AMENDMENT REPORT VOLUME 1

CUSC Amendment Proposal CAP166

Transmission Access
Long Term Entry Capacity Auctions

The purpose of this report is to assist the Authority in their decision of whether to implement Amendment Proposal CAP166

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I DOCUMENT CONTROL

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0.1	24/02/09	National Grid	Report for Industry Comment
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b Distribution

Name	Organisation
The Gas and Electricity Markets Authority	Ofgem
CUSC Parties	Various
Panel Members	Various
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II CONTENTS TABLE

1.0 SUMMARY AND RECOMMENDATIONS

Executive Summary

1.1 CAP166, Transmission Access – Long-term Entry Capacity Auctions, was proposed by National Grid and submitted to the CUSC Amendments Panel for consideration at their meeting on 25 April 2008. CAP166 proposes that all long-term entry access rights to the GB transmission system would be allocated by auction.

1.2 The CAP166 original proposal includes the following main features for access to the wider transmission system:

- Long-term entry access would be released annually in blocks of whole financial years;
- Long-term entry access rights would be defined on a zonal basis, such that each User can share capacity between its power stations on a real time basis at a 1:1 exchange rate within these defined zones;
- Capacity would be allocated on a pay as bid basis up to a zonal baseline;
- The User commitment associated with long-term entry access rights would be a liability to pay the accepted bids, with the associated security arrangements to be developed by the Working Group in accordance with the Best Practice Guidelines for Gas and Electricity Network Operator Credit Cover.
- Outside of a specified period an incremental capacity release methodology would be developed to release capacity above the baseline to bids meeting a regulatory test.

1.3 The CAP166 original proposal also includes separate arrangements for infrastructure comprising generators' local connections, including the appropriate User commitment (which may be approximately equivalent to 100% of costs).

1.4 Following consideration of CAP166 by the Working Group, three Working Group Alternative Amendments were agreed.

Working Group Alternative 1 (WGAA1)

WGAA1 was proposed by National Grid and features an auction based upon a boundary constraint model where access is auction on a nodal basis (rather than the zonal basis in the original amendment proposal). WGAA1 allows the auction to determine the price of such access, with there being no set reserve price.

Working Group Alternative 2 (WGAA2)

WGAA2 was also proposed by National Grid, and again features an auction based on a boundary constraint model. WGAA2 was developed following a Working Group Consultation Alternative Request and introduces the concept of a reserve price that is reflective of both the Long Run Marginal Costs of providing existing and incremental capacity and also the Short Run Marginal Costs of allowing an over-allocation of capacity across derogated system boundaries.

Working Group Alternative 3 (WGAA3)

WGAA3 was initially proposed by Bill Reed, a Working Group member, prior to the Working Group consultation but due to the lack of time was not developed any further from the initial proposal. However upon the granting of a time extension for the Working Group it was more fully developed into the Working Group Alternative Amendment described in this Working Group Report. It features a Capacity-Duration Auction where access is allocated to all those that request it in a given year with the costs of providing such access being split into two charges; a long-run priced element which is designed to reflect the existing TNUoS charges for the costs of transmission infrastructure and a short-run priced element which reflects the forecast operational costs (in the form of transmission constraints) of providing access to a User in advance of any necessary transmission reinforcements being completed.

1.5 The Working Group was unable to develop all of the options fully under the original timescales. Instead, it focused its effort on developing WGAA1 and following the Working Group consultation, WGAA2 as it is largely similar to WGAA1. WGAA2 was proposed by National Grid during the Working Group consultation (WGCR02) due to concerns about revenue recovery in WGAA1. WGAA1 and WGAA2 propose the allocation of rights to individual nodes, rather than at the zonal level, with a boundary constraint model that clears simultaneously across the entire network. In essence bids are accepted so as to maximise total auction revenue, but subject to ensuring that limits on flows across pre defined boundaries are not breached. In effect generators compete in the auction with other generators who are subject to the same constrained boundary or boundaries as them. As these boundary constraints can interact with each other, this calculation is carried out simultaneously through linear programming. Following the granting of a time extension to the Working Group, WGAA3 was also further developed.

1.6 Four further proposals were put forward for consideration as candidates for Working Group Alternative Amendments, one by a Working Group member during the initial assessment of CAP166 (denoted as WGAA2 in the Working Group Consultation issued on 17 October) and three others by respondents to the Working Group Consultation. Due to the time available to Working Group 2 to assess these alternative proposals all four were unable to be fully assessed as whether they were suitable to move forward as formal Working Group Alternatives. A record of each is included within this report. However, the Working Group requested an extension to further develop proposals for a capacity and duration auction model. This extension was granted and through discussions on this proposal WGAA3 and WGAP1 were developed.

1.7 A record of the three Working Group Consultation Requests that were not taken forward (WGCR01, WGCR03, and WGCR04) is outlined in section 13.0.

1.8 A record of the Working Group Alternative Proposal (WGAP1) is included in section 4.3.

1.9 For WGAA1 and WGAA2, boundaries have been defined to provide an appropriate balance between the accuracy of the model and its simplicity so that bidders are able to participate effectively. Generators will be cleared at the same price if they are subject to the same critical boundary. There are likely to be a number of different cleared prices across the network.

1.10 A basic spreadsheet model has been developed to test the approach proposed for WGAA1 and WGAA2. Whilst there has been very limited time to carry out such analysis, early indications are that the model is capable of allocating transmission capacity to generators in the manner intended. However, this has not been rigorously tested.

1.11 It appears that the charges that generators would see under an auction with no reserve price would be very different from those produced by the present TNUoS charging methodology. This is because the present methodology calculates charges on the basis of the modelled flows that generators cause across the transmission system and the cost of transmission system to accommodate those flows, whereas the auction reflects the scarcity of capacity behind a constrained boundary.

1.12 Issue 1.0 of the Working Group Report was submitted to an extraordinary CUSC Panel meeting on 5th December 2008. The Panel allowed an eight week extension to further consider a capacity and duration auction model. Following this extension, version 2.0 of the Working Group Report was submitted to the CUSC Panel meeting on 30th January 2009. The Panel agreed that a Consultation Report containing the CAP166 original proposal, WGAA1, WGAA2 and WGAA3 should proceed to wider industry consultation as soon as possible, that the Working Group Report be accepted and that the Working Group be disbanded.

Working Group Recommendation

1.13 The Working Group voted on whether they believed the original or the Working Group alternatives are **better than the current baseline**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	0	13	0
WGAA1	0	13	0
WGAA2	2	11	0
WGAA3	2	11	0

1.14 Next the Working Group voted on whether they believed the original or the Working Group alternatives are **better than the original amendment**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	-	-	-
WGAA1	1	8	4
WGAA2	3	6	4
WGAA3	4	8	1

1.15 The majority of the Working Group believed WGAA1 and WGAA2 were not better than the original or the baseline. The Chair of the Working Group with support of some members of the Working Group took forward WGAA1 and WGAA2.

1.16 The Working Group voted on which of the proposals they believe best facilitates the applicable CUSC Objectives. The result of this vote is described in the following table:

Proposal	Best
Original	0
WGAA1	0
WGAA2	2
Abstained	11

1.17 After the Working Group extension the Working Group voted again on which of the proposals they believe best facilitates the applicable CUSC Objectives. The result of this vote is described in the following table:

Proposal	Best
Original	0
WGAA1	0
WGAA2	0
WGAA3	3
Abstained	10

National Grid's View

1.18 Of the four options (the CAP166 original proposal, WGAA1, WGAA2 and WGAA3) contained within this Amendment Report National Grid is supportive of WGAA2 and WGAA3 only.

1.19 National Grid is broadly supportive of both a price based and a capacity duration style of auction for allocating transmission access rights as it believes both will give the opportunity for User's who value access to the GB transmission system the highest, to obtain that access. National Grid views this against the existing system which can frustrate new Users who may value that capacity more highly than existing access rights holders but have no choice but to await new transmission infrastructure build rather than directly compete with existing access right holders.

1.20 However the two price based auction models presented by the original CAP166 amendment proposal and WGAA1 do not in National Grid's view better facilitate the applicable CUSC objectives. In the case of the original amendment this is down to the fact that there are significant interactions between zones which means that practically it is very difficult to define them other than if they are kept small. These small zones then have very few generators within them defeating the initial objective of allowing for the free sharing of TEC within them. Therefore the boundary model methodologies are clearly better than the zonal. WGAA1, though a boundary constraint model, does not have any concept of a reserve price within its methodology and it retains the existing levels of over-allocated TEC within the baseline capacity released. This effective removal of a reserve price and the signals to compete on volume would likely see a collapse in the auction price and in turn lead to significant areas of the existing transmission system being left with little or no locational pricing signal, which would not allow for a cost-reflective charging system to be retained.

1.21 This then leaves WGAA2 and WGAA3 as the options National Grid believes would better facilitate the applicable CUSC objectives if they were ultimately to be implemented. Both offer a mechanism by which parties who value rights more than others may procure them, either in the case of WGAA2 by outbidding others in an annual auction, or in WGAA3 by committing to purchase a volume of short-run priced rights where they effectively share additional "over-allocated" rights with others who are also willing to do so in advance of transmission system reinforcements.

1.22 In National Grid's view, both WGAA2 and WGAA3 require further development, in particular to the securities that form part of WGAA2 and to a lesser extent WGAA3. In the case of WGAA2 this will be to develop a set of arrangements to allow wider works to be securitised against Users, and in the case of WGAA3 to assess the effectiveness of the fixed cost reflective final sums methodology proposed. There is clearly also development work to be done for either WGAA2 or WGAA3 on fully working up a full SO Long Term Release Methodology that is compatible with the principles developed by the Working Group, an auction model and IS System that will allow Users to fully participate in the auction process and also the required charging amendments to be progressed under separate Charging governance. National Grid believes however that all of these items of further work, though complex can be taken forward to an appropriate conclusion should either WGAA2 or WGAA3 ultimately be approved by the Authority.

Amendment Panel's Recommendation

1.23 The CUSC Panel voted on whether they believed the original and the Working Group alternatives were better than the current baseline. The results of the vote are described in the following table:

Proposal	Better	Not better
Original	0	8
WGAA1	0	8
WGAA2	1	7
WGAA3	1	7

1.24 The majority of the Panel do NOT believe that any of the Original or the Alternative Proposals is better than the current baseline.

1.25 The CUSC Panel voted on which of the proposals they believe best facilitates the applicable CUSC Objectives. The results of this vote is described in the following table:

Proposal	Best
Original	0
WGAA1	0
WGAA2	1
WGAA3	1
Abstained	6

1.26 The majority of the CUSC Panel did not believe that any of the original or alternative proposals were best and so abstained from this vote. One Panel member felt WGAA2 was the best option and another Panel member felt WGAA3 was the best option. For the avoidance of doubt the majority of the CUSC Panel did not believe that any of the CAP166 original or alternatives should be approved by the Authority.

1.27 The CUSC Panel also discussed the proposed implementation date and agreed with the majority Working Group recommendation that any implementation of the CAP166 proposals be restricted to the two dates specified in section 7.2 of this report. Namely if an Authority decision is made prior to 1st December 2009 then implementation could take place on 1st April 2011, and should an Authority decision be made on or after 1st December 2009, but before 1st December 2010 then implementation should be on 1st April 2012.

2.0 PURPOSE AND INTRODUCTION

2.1 This Amendment Report has been prepared and issued by National Grid under the rules and procedures specified in the Connection and Use of System Code (CUSC) as designated by the Secretary of State. It addresses issues relating to the allocation of finite transmission access rights.

2.2 Further to the submission of Amendment Proposal CAP166 (see Annex 7) and the subsequent wider industry consultation that was undertaken by National Grid, this document is addressed and furnished to the Gas and Electricity Markets Authority ("the Authority") in order to assist them in their decision whether to implement Amendment Proposal CAP166

2.3 This Amendment Report also outlines the discussions held by the Working Group, the responses to the Working Group Consultation, the responses to the Company Consultation and the nature of the CUSC changes that are proposed.

The Transmission Access Review Working Groups

2.4 CAP166 was proposed by National Grid and submitted to the Amendments Panel for their consideration on 25th April 2008.

2.5 In a change from normal practice, CAP166 was one of six Amendment Proposals which the CUSC Amendments Panel divided between two Working Groups under the banner of the Transmission Access Review. Working Group 1 has considered CAPs 161-164 and Working Group 2 CAPs 165 and 166. The Panel also directed the formation of a third Working Group (known as "Working Group 3") to assess some enabling changes which underpin a number of these CAPs related to transmission charging proposals under the Transmission Charging Methodologies Forum (TCMF).

2.6 A combination of two, or more of these six CAPs collectively or, potentially in the case of Connect and Manage, individually, could be considered to constitute a model of transmission access reform. At the time of the original six proposals there were broadly speaking three models: (i) Connect and Manage (CAP164); (ii) Evolutionary Change (CAPs 161, 162, 163 and 165); and (iii) Evolutionary Change with auctions (CAPs 161, 162, 163 and 166). However, the intention is that all six CAPs can be implemented individually or in certain combinations with each other.

2.7 The Working Groups have also been constituted to deliberate on related transmission charging proposals under the Transmission Charging Methodologies Forum (TCMF). This Amendment Report is concerned with the CUSC-related issues of CAP166, although references are made to charging where this aids understanding of the proposed Amendment. Charging issues are being consulted on in a parallel pre-consultation.

2.8 The Amendments Panel agreed that Working Group 2 would work towards submitting a report on CAP166 back to the CUSC Panel within 3 months, inclusive of a period of Working Group Consultation. An extension of 2 months to this timetable was granted by the CUSC Panel on 25 July 2008 after a request from the Chair of Working Group 2. A further extension of 2 weeks was granted by the CUSC Panel on 3 October 2008.

2.9 Following this two week extension a Working Group report was presented to the CUSC Panel on 5th December 2008. It was noted that within this report one option, that of a "Capacity-Duration" auction model had been initially drawn up, but due to the available timescales not fully developed. In order that this model be more fully investigated and noting the Authority's desire to be able to consider the fullest range of options available to it for CAP166 the CUSC Panel granted the Working Group a further 8 weeks in which to consider the Capacity-Duration auction model.

2.10 Furthermore, the Authority's approval of CAP 160 during the assessment period alters the way in which the Working Group considers Alternatives raised in the consultation process.

2.11 Working Group 2 considered the issues raised by CAP166 and considered whether the amendment proposal, and some suggestions for potential Working Group Alternatives, better facilitated the Applicable CUSC Objectives as compared with the current version of the CUSC. Working Group 2 met 30 times during the assessment period for CAP166 and attendance is recorded for voting purposes in Annex 6. Each Working Group meeting was attended by CUSC Party-nominated members or their alternates, and invited experts. Working Group 2 also drew on discussion in Working Group 3 mainly regarding the definition of local works.

2.12 Section 3 of this Amendment Report describes the original proposed amendment. Section 4 summarises the Working Group discussions and section 5 presents three Alternative Amendments developed by the Working Group. Section 6 considers the original amendment proposal together with the Working Group Alternative Amendments against the applicable CUSC objectives.

2.13 The CAP166 Working Group Report was submitted for the second time to the CUSC Amendments Panel meeting on 30 January 2009. Following evaluation and consultation by the Working Group, the Amendments Panel determined that CAP166 was appropriate to proceed to wider industry consultation by National Grid.

2.14 Following the completion of the consultation referred to in 2.13 above, this document outlines the nature of the CUSC changes that are proposed. It incorporates National Grid's recommendations to the Authority concerning the Amendment. Copies of all representations received in response to the consultation have been also been included and a 'summary' of the representations received is also provided. Copies of each of the responses to the consultation are included in Volume 2 of this document.

2.15 This Amendment Report has been prepared in accordance with the terms of the CUSC. An electronic copy can be found on the National Grid Website, www.nationalgrid.com/uk/Electricity/Codes/.

2.16 **Comparison with Current Methodology**

2.16.1 The following table provides a summary of the comparison between the current methodology and that under an auction framework:

Options	**Current Methodology (TNUoS)**	**Auction Framework**	
		Price Based Auction	**Capacity / Duration Auction**
Nature of rights (Local)	Enduring	Enduring	Enduring
Nature of rights (wider)	Enduring	Finite	Finite
Capacity definition	TEC in Bilateral Connection Agreement (BCA)	Local Capacity Nomination (LCN) and Transmission Access Capacity (TAC) in BCA	Local Capacity Nomination (LCN) and Transmission Access Capacity (TAC) in BCA
Revenue Recovery (Pricing)	LRMC with residual pricing (TNUoS)	Cleared price through auction with residual pricing	Long-Run Marginal Costs for access provided through physical transmission assets. Short-Run Marginal Costs for access provided through operational actions Residual pricing
Allocation of rights to wider system	First come first served	Price driven	Equal basis among all parties in auction
Volume of long-term rights	Determined by SQSS	Determined by SQSS (with separate arrangements for derogated boundaries)	As requested by User in auction

3.0 PROPOSED AMENDMENT

3.1 This section describes National Grid's original CAP166 amendment proposal and includes clarifications that have resulted from Working Group discussions. The full text of the original amendment proposal can be found in Annex 7.

3.2 Defect

3.2.1 This CAP166 amendment proposal seeks to address a number of defects which, in the view of the proposer of CAP166, exist with the current transmission access arrangements.

3.2.2 The current entry access arrangements give existing generators a rolling option to renew their rights to access the transmission system on an annual basis. The allocation of these rights is through incumbency, so that, when there is no spare capacity and where there is a time-lag in the provision of new capacity, new Users have no ability to obtain from National Grid acting as the Great Britain System Operator (GBSO) long-term transmission access rights even if they would value them more highly than incumbents.

3.2.3 The fact that the true value of transmission access rights cannot be discovered from the market compromises transmission licensees' ability to develop an optimally economical system of electricity transmission, as well as creating a barrier to entry. Entry could be facilitated by improving liquidity in the trading of transmission access rights (and separate amendments have been proposed to do so), but in order for Users that are able to trade capacity to do so at value they first should have had to pay value for those rights.

3.2.4 The proposed amendment also seeks to address the issue that the current arrangements, whereby generators have a rolling option, do not provide any certainty to National Grid and Transmission Owners. This uncertainty can lead to inefficient transmission investment signals, in that the planning of incremental capacity can take little, if any, account of the potential future release of existing capacity currently held by incumbents. Additionally, existing generators are not required to put in place any financial security, even for the one year's worth of charges they currently incur a liability for.

3.3 Principles

3.3.1 This CAP166 original amendment proposal seeks to allocate all long-term entry access rights to the electricity transmission system by auction. All existing transmission access rights (both for existing pre- and post-commissioning power stations) would be withdrawn and reallocated using this new process. All power stations operating at, or due to commission after, the implementation of CAP166 would no longer have any access rights to the wider transmission system from this time if they had not obtained them in the proposed CAP166 auction.

3.3.2 All the available transmission access rights across the GB transmission system would be identified on a zonal basis, and released in annual (financial year) blocks. Auctions would be held annually, and long term transmission access rights allocated on a pay as bid basis to the limit of the available ("baseline") zonal capacity.

3.3.3 There would be a reserve price based on the current Transmission Network Use of System (TNUoS) Charging Methodology.

3.3.4 Successful bookings would be underpinned by User commitment in the form of a liability to pay the accepted bids for the duration of their access booking. Financial security for such liabilities would be required.

3.3.5 Outside of a specified period, incremental capacity would be released by the GBSO where any unfulfilled bids in excess of the zonal reserve price were of a level sufficient to pass a regulatory test, which would need to be defined under a separate Incremental Entry Capacity Release ("IECR") methodology.

3.3.6 These arrangements would provide access to the wider transmission system. Separate arrangements would be put in place for infrastructure comprising generators' local connections to the wider transmission system, such that potential new generators would first apply for a local connection, and would then have their generators' bids for long-term entry access rights constrained to the sum of their prevailing contracted or offered local capacity limits in the zone in which they were connecting. Separate arrangements for charging and security would apply for local infrastructure, and for the residual element of the entry Transmission Network Use of System ("TNUoS") capacity charge.

3.3.7 For the avoidance of doubt, no capacity allocated to a User in one auction would be removed or reallocated from that User in any subsequent auction, even if the bid price for that capacity is greater in the second auction compared to the first.

3.4 Process

3.4.1 The high-level process approximately splits into two elements

- The allocation of local access rights
- The allocation of wider access rights

3.4.2 A flow-chart that details the high level process and is complementary to the rest of this section 3.4 is attached at Annex 2.

3.4.3 The allocation of local access rights is dependent on the introduction of a parameter to define a User's local access rights – the Local Capacity Nomination (LCN).

3.4.4 The Local Capacity Nomination (LCN) would be the maximum capacity (in MW) to which a generator is entitled to obtain transmission access products (long-term and short-term access products including overrun) within an auction year (equivalent to National Grid's current charging year – April to March). It must not exceed the Connection Entry Capacity (CEC) of the generator to avoid damage to the local transmission assets.

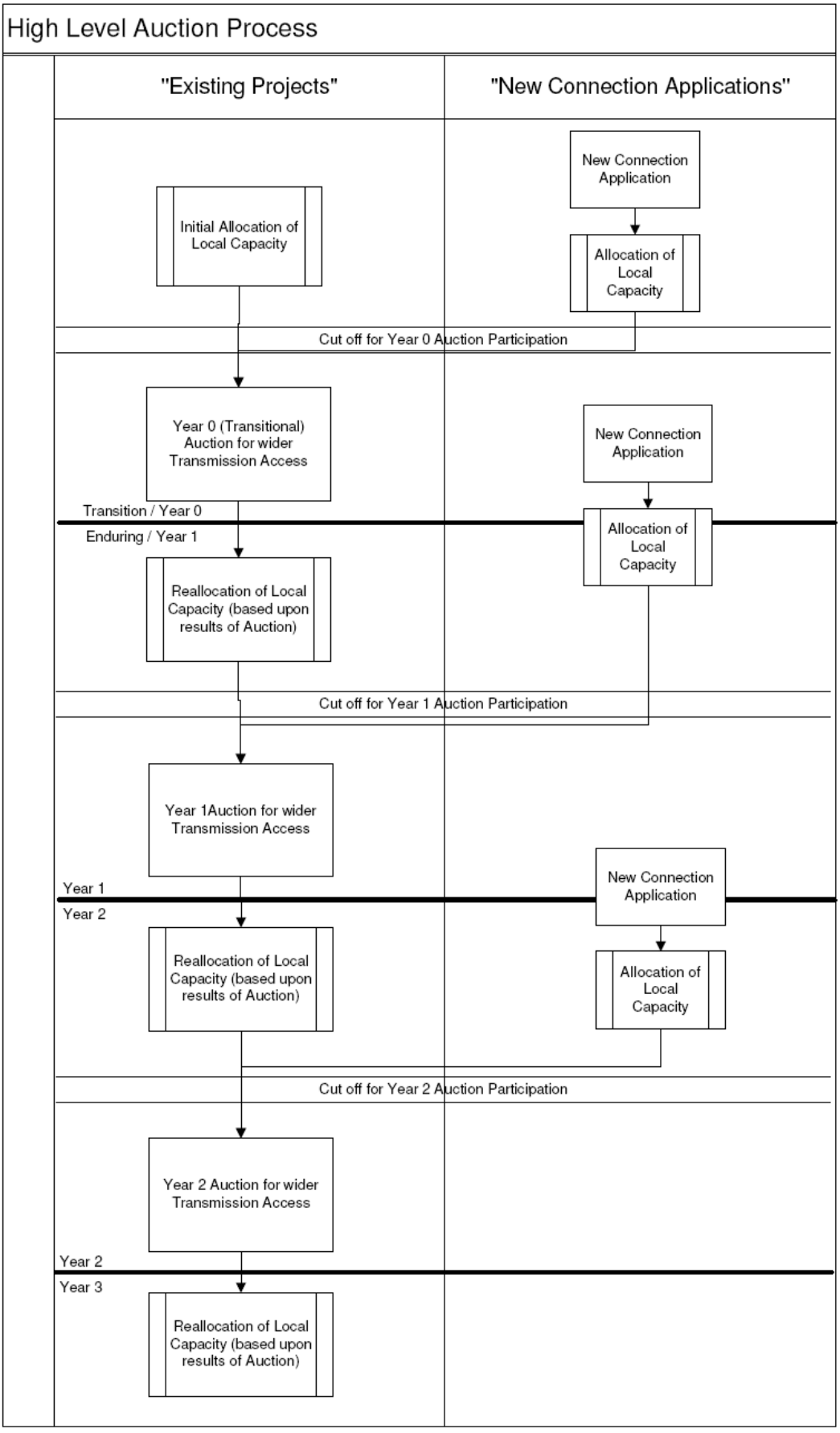
3.4.5 LCN will be the basis upon which a generators' local TNUoS charge will be calculated and levied.

3.4.6 LCN could be shareable between generators, when multiple generators agree to share. Any sharing arrangement would be managed with a clause which, in the case of two generators sharing, would restrict one generator if the other generator is using the local connection capacity and vice versa. This approach is similar to that currently adopted to deal with design variation connections.

3.4.7 The concept of LCN will be introduced into CUSC Exhibit B: Connection Application. A local connection application will be progressed under the same process as an existing local and wider connection application.

3.4.8 The manner in which allocation of local and wider access rights interact is as shown in Figure 1 below:

Figure 1: Proposed High Level Auction process



3.4.9 Allocation of Local Access Rights

3.4.9.1 It is clear from the above that there is a significant interaction with the assessment of local works required to deliver the User's requested level of local access and the wider works allocated through the proposed auction The management of this interaction has been a key discussion point of the Working Group (see sections 4.3 and 4.4 for further details).

3.4.9.2 The high level process would commence with an allocation of local access rights to existing Users[1]. The level of local access rights granted to a User would be denoted by its Local Capacity Nomination (LCN); the LCN would form the upper limit on the combined wider capacity a User may procure through any auction or short-term access products (including overrun). An LCN would consist of a MW level and a date from which that MW level is applicable. Staged projects might see a ramp up of LCN as the project is progressively completed.

3.4.9.3 The default LCN value granted to an existing User would be the TEC level granted in its Bilateral Agreement. For those projects yet to commission / energise the effective date will by default commence at the same time the TEC value was due to come into effect (as specified in the BCA) and will carry the same MW level as the existing TEC value.

3.4.9.4 Once the stages above have been completed for existing Users then so the enduring process will come into effect for any existing Users that wish to explore a change in their local access rights. Each User that wishes to change the timing or level (MW) of their LCN from its default TEC value will signal this intent to National Grid (this may be through a Modification Application or some other transitional process to be defined). Similarly the following process will be followed by any new Users applying to connect a Power Station to the GB Transmission System.

3.4.9.5 National Grid will for each connection application (or transitional) request calculate two dates the "earliest LCN date" and the "backstop LCN date". The "earliest LCN date" is the earliest date by which works to deliver the desired LCN capacity could be completed (assuming they were commenced from the beginning of the next financial year and if that project was considered in isolation). The "back-stop LCN date" is calculated using a similar process but considers the earliest date by which all projects that wish to advance their LCN can have the works delivered to do so. It is clear that in all cases the "earliest LCN date" <= "back-stop LCN date".

3.4.9.6 Any projects that wish to increase their LCN MW level will also have an assessment of whether there are any additional local works necessary to accommodate this and if so this may impact upon one or both of the offered "earliest LCN date" and "back-stop LCN date". Both the notified (offered) "earliest LCN date" and "back-stop LCN date" will be conditional in two areas:

- The results of the next wider access auction; and,

[1] The Term "existing Users" denotes any User that has a signed Bilateral Connection Agreement or Bilateral Embedded Generation Agreement by a certain "transition date"

- Applications from other Users ("subsequent User(s)") to connect in the same locality as the "first User" which are received after the "first User" has received its offer and which are signed by the "subsequent User(s)" before the cut-off date for the next wider access auction.

3.4.9.7 Regarding the conditionality with the results of the wider access auction, a User will only have its final LCN Effective Date firmed up once it is known whether it has secured wider access in that auction. Those Users that are successful in the wider access auction will then receive a firm LCN effective date that aligns with their booked wider access rights. Those parties that fail to secure wider access rights in the auction will then be offered their "back-stop LCN date" as their firm LCN Effective date.

3.4.9.8 The conditionality in advance of the auction would work along the following lines. The first User to apply to connect in a locality may receive a "Earliest LCN Date" and a "Back-Stop LCN Date" that are the same and equal to the date to facilitate only that User's Power Station. Then a second User applies to connect in the same locality. The second set of local works to facilitate the LCN is more complex than the first Users so the second User is offered an "Earliest LCN Date" equivalent to that offered to the first User, but its Back-Stop LCN Date is further into the future reflecting the more complex works to connect two Power Stations in the same locality. The first User must then also have its Back-Stop LCN date amended to be consistent with the first User.

3.4.9.9 In the above example the capacity constraints to deliver the local works for the two Power Stations will be reflected in the incremental capacity supply curves that feed into the auction process. This will ensure that only one of the two generators in the locality (in the above example) will be able to procure wider auction access in timescales consistent with their Earliest LCN Date. The other will then only be able to procure access consistently with the Back-Stop LCN Date.

3.4.9.10 It should be noted that in situations in which the provision of local capacity is constrained, these arrangements prioritise the provision of local capacity based on the outcome of the auction for wider long-term transmission access rights. By the end of the above process the "queue" for local works would have effectively been optimised based upon the desire of the User to commit to wider long-term transmission access.

3.4.9.11 In circumstances in which local capacity is constrained and priority is given to those Users that are successful in the auction, but some local capacity remains available, this would be allocated on a first-come-first-served approach (similar to that currently adopted for interactive offers).

3.4.10 Allocation of Wider Access Rights

3.4.10.1 The auction process, under CAP166, would give Users the opportunity to bid for long-term transmission access rights which provide the (generator) holder with a (perfect) hedge against the short-term value of transmission access (i.e. Users that operate within the (MW) volume of transmission access rights they purchase in the auction are not exposed to the short-term cost of transmission access).

3.4.10.2 The auction process proposed under the Original Amendment would have the following key attributes:

- A zonal, dynamic, cleared price, multi-year auction as more fully described in section 4 below.
- The auction will allocate capacity for a 40 year period i.e. the 2010 auction (run in autumn 2010) would allocate capacity from April 2011 to March 2051.
- All 40 annual allocations would run simultaneously in the auction. The methodology used for each of the years that are covered by the auction is summarised below:
    - Establish physical zones and associated capacity limits based on SQSS security criteria
    - Establish demand at system peak in each zone
    - Establish the supply function for incremental transmission capacity for each zone for each year
    - Enhance the boundary capabilities associated with derogated boundaries, e.g. England-Scotland boundary (SYS boundary B6) increased to accommodate derogation associated with BETTA transition arrangements
    - Publish market information covering zones and incremental capacity (supply function).
    - Invite bids for capacity in each zone for each of the years on a volume and price basis – Generators would be limited to a maximum number of Bids per Power Station equal to 5 × (Number of BMUs at the Power Station).
    - Generators would also be able to set a "de-minimis" auction acceptance volume parameter that would limit the auction model from accepting a Bid from a Power Station if it was pro-rated or capped at a level below the de-minimis value specified.
    - There will be a reserve price set in each zone equal to the zonal generation TNUoS tariff calculated in accordance with the existing ICRP model.
    - Run the zonal auction to maximise notional value indicated by bids whilst ensuring that the flows across each boundary is not exceeded.
    - Set the cleared prices based on accepted bids in each zone
    - Publish results to the market and allow for revision of bid price and volume with a reduction in volume being only reversible if another party subsequently reduces volume within the same zone
    - A number of rounds would then ensue with the ability for auction participants to revise bid prices and volumes in each round. This process would continue until no further material movement takes place between three successive rounds of the auction. A contingency for a forced close by only allowing upward price and volume movements will be in place after [15] flexible auction rounds have taken place.
    - The rounds would occur on each working day in September and October. Bids would be accepted from Users between 08:00 – 17:00 on each working day with the results of that round being published by 20:00 on the same day. The exception would be the first two rounds of the auction held in each year which would occur on the first and third working days of September. The extra day being to allow Users to fully appraise the results of the first round and further refine their bidding strategy.

- Capacity will be allocated based on auction result with fixed financial commitment based on the zonal cleared price for each year.

3.4.10.3 The maximum (MW) volume of long-term transmission access released by the GBSO would be based on the amount of existing TEC (be that from commissioned generators or from pre-commissioning generators). In zones with spare transmission access capacity, this (MW) volume would be increased on a pro-rated basis across all such zones until the SQSS would be breached. This means that Users would be able to operate their power station either using the short-term transmission access regime introduced by CAP161 (SO Release of short-term access rights), CAP162 (entry Overrun) and CAP163 (entry access right Sharing) (in the event of the approval of these amendments) or obtain a hedge against this by bidding for long-term transmission access rights in the auction. If Users were to bid for long-term transmission access rights only when the (cost-reflective) short-term price is higher, and the Transmission Licensees construct transmission assets in order to release these long-term rights then this should result in an economic and efficient transmission network.

3.4.10.4 From the perspective of different types of Users, the wider access auction process proposed by CAP166 would have the following implications:

Existing (post-commissioning) User

3.4.10.5 The proposed arrangements would replace the existing rights and obligations under the CUSC with regard to transmission access rights and charging liabilities. Existing Users would be required to bid for the long-term access rights alongside Users that wish to use the system in the future.

3.4.10.6 The auction would be held once a year in September for long-term access rights starting from the following 1 April.

3.4.10.7 Prior to the commencement of the auction, the GBSO would publish the following information:

- Zonal baseline transmission capacities (in MW);
- Previously sold baseline capacities (in MW);
- Local Capacity Nominations (LCNs) (in MW)
- Reserve prices (in £/MW); and
- Details of the Incremental Entry Capacity Release methodology.

3.4.10.8 Users would bid in each of the future (whole financial) years that they want long-term transmission access rights with the associated capacity (in MW) and price (in £/MW/year). Users would be able to bid for different capacities and with different prices in each year.

3.4.10.9 In the first round of the auction, bidding may be difficult since successful bidding involves accurately forecasting the clearing price, however, at the end of the first round, the GBSO will publish the following information:

- Long-term transmission access right allocations in each year (MW in each zone);

- Details of the 'hurdle' test for incremental capacity release, including the level of incremental capacity triggered in each future year.

3.4.10.10 Bidders then have an opportunity to make use of this information and revise their bids in a series of future rounds.

3.4.10.11 Further auction rounds would take place until the changes in the transmission access allocation between two successive rounds fall below the pre-defined tolerance level (in MW). The auction would then close.

3.4.10.12 Users that are successful in the auction would then receive the long-term transmission access rights (which provide a hedge against the short-term cost of transmission access) for the capacity (in MW) for which they were successful in the years in which they were successful.

3.4.10.13 Users would also be committed to paying the associated price they bid (£/MW/year) for these long-term access rights in the years in which they were successful.

3.4.10.14 If Users trigger incremental capacity and this is not provided by the TOs, the GBSO will be required to buy back the capacity that cannot be provided.

3.4.10.15 Users that are unsuccessful in the auction could make use of the short-term transmission access regime, or wait until the next auction for long-term transmission access rights.

3.4.10.16 All generation Users (those utilising short-term access rights and long-term access rights) will be required to pay use of system charges which will be set to recover any difference (surplus or deficit) between the auction revenue and the proportion of the transmission licensees maximum allowed revenue to be recovered from generation Users (27%).

<u>New (pre-commissioning) User</u>

3.4.10.17 New Users would bid for long-term access rights in the auction alongside existing Users. The auction process would be as set out above for existing Users.

3.4.10.18 New (pre-commissioning) Users will need a connection to the transmission system in order to make use of long-term transmission access rights. New Users will be able to apply for local (MW) capacity via a local connection with the offer remaining open until the auction of wider long-term transmission access rights is concluded.

3.4.11 Auction Timescales

3.4.11.1 It is envisaged that each annual auction would commence on 1st September in each year and would likely endure for no longer than 2 calendar months.

3.4.11.2 Users who wish to participate in a given year's auction should ensure that they have a signed offer for local connection by 1st June in the same year (although dispensations may be available for Users who have referred their offer for connection to the Authority). Further details on timescales may be found in section 4.4 below.

3.4.12 Wider Access Capacity Baselines

3.4.12.1 The baseline capacity to be auctioned in each wider access auction will be set equal to a capacity made up of the following components:

- Firstly the capacity that would be released within each zone under a strict interpretation of the GB SQSS planning criteria[2] will be assessed;
- Secondly for the first year of the auction process any zones that have "existing TEC allocations" in excess of that permitted through a strict application of the GB SQSS (known as "over-allocated zones") will have this level of baseline auction capacity applied for the first annual auction only. The "existing TEC allocation" in a zone will be set equal to the sum of the TEC of generators already connected to or using the GB Transmission System in that zone (i.e. commissioned and generating) and the TEC of generators that will connect to or use the GB Transmission System in the first year for which long-term capacity rights will be granted via auction.
- Finally any other derogations which permit the allocation of explicit additional baseline capacity in a zone will also be accounted for and the explicitly stated volume in any such derogation will be added to the baseline.

3.4.12.2 Once the results of the first annual auction are known future baseline allocations will be as follows:

- In non "over-allocated zones" the baseline auctioned will continue to be based upon that permitted by the GB SQSS Planning Standards;
- In "over-allocated zones" the baseline auctioned from year 2 onwards will be equal to that purchased by Users in year 1 plus any incremental capacity that may be physically constructed.

3.4.12.3 In future years, incremental physical capacity that can be offered to Users will be specified in the form of "incremental capacity supply functions" and will correspond to the completion of physical transmission system reinforcements. The incremental capacity supplied by such reinforcements will be applied to the auction from the next 1st April following the completion of the reinforcement.

3.4.13 Reserve Prices

3.4.13.1 In the CAP166 Original Amendment there will be a zonal reserve price set in the auction for Wider Transmission Access based on the current Transmission Network Use of System (TNUoS) Charging Methodology. The TNUoS charging zones would be redrawn to be consistent with the auction zones.

[2] NB. The GB SQSS is currently undergoing a substantive review. Should the Planning Standards be amended such that a different baseline capacity in a zone could be released into the long-term auction it would be the intention for this revised baseline capacity to be used.

3.5 Securities

3.5.1 Pre Commissioning Securities

3.5.1.1 Under CAP166 it is proposed that pre commissioning securities are comprised of security for local TNUoS charges only. Termination or reduction of the requested LCN would therefore result in the levying of a Local Capacity Reduction Charge, based on Local Cancellation Amounts. The Local Capacity Reduction Charge would be non-refundable.

3.5.1.2 The Local Cancellation Amount in each year would be a percentage of the Local Termination Amount, which is the higher of zero and eight times the relevant local generation TNUoS charge. The Local Capacity Reduction Charge would therefore be calculated as:

Local Capacity Reduction Charge = $LCN_r \times LCAM_t$

Where:

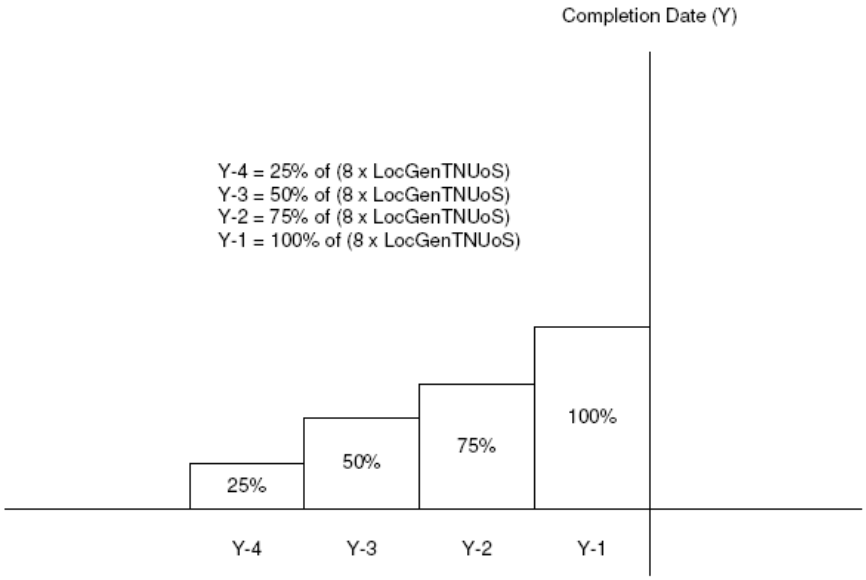
- LCN_r is the reduction in Local Capacity Nomination in kW.
- $LCAM_t$ is the relevant Local Cancellation Amount which varies according to the number of full years from the Completion Date:
  - In the year prior to the Completion Date (i.e. t) *LCAM = LTA x 100%)*, where LTA is the Local Termination Amount;
  - Where t=-1, *LCAM = LTA x 75%*;
  - Where t=-2, *LCAM = LTA x 50%*; and
  - Where t=-3, *LCAM = LTA x 25%*.

Local Termination Amount = $Max (0, (LocGenTNUoS_n \times X))$

Where:

- $LocGenTNUoS_n$ is the relevant nodal Local Generation TNUoS tariff applicable to the generation project and published in the Statement of use of System Charges. If such a nodal tariff is not currently published, then the appropriate tariff will be calculated by National Grid as part of the application process, in accordance with the Charging Methodology.
- *X* is a multiplier, initially taking the value 8, although it may be appropriate that this be amended in subsequent price control periods.

This is shown diagrammatically below:



3.5.1.3 The value of X has initially been allocated the value of 8 according to the rationale developed through the assessment of CAP165. The 8 years figure is derived from analysis of TNUoS tariffs against wider UCAs, which shows that, on average, the UCAs are 15 times the TNUoS tariffs. The 15 is halved to reflect a 50/50 risk sharing between generators and consumers. Consistency would imply that the same multiplier could also be used for local connections in the CAP166 proposal.

3.5.1.4 However, there is an additional rationale for 8 years being an appropriate multiplier: If local TNUoS was exactly reflective of capital costs, then a capital payment of 8 x annuitised TNUoS would cover 50% of the capital costs. This is because the TNUoS methodology converts capital sums by assuming a 50 year asset life and a 6.25% rate of return. Annual sums can be converted into a capital sum by multiplying by:

$$(1-(1+0.0625)^{-50})/0.0625 = 15.22$$

3.5.1.5 If the 50% risk sharing, consistent with the CAP165 treatment for wider access is applied, the result is a multiplier of 8.

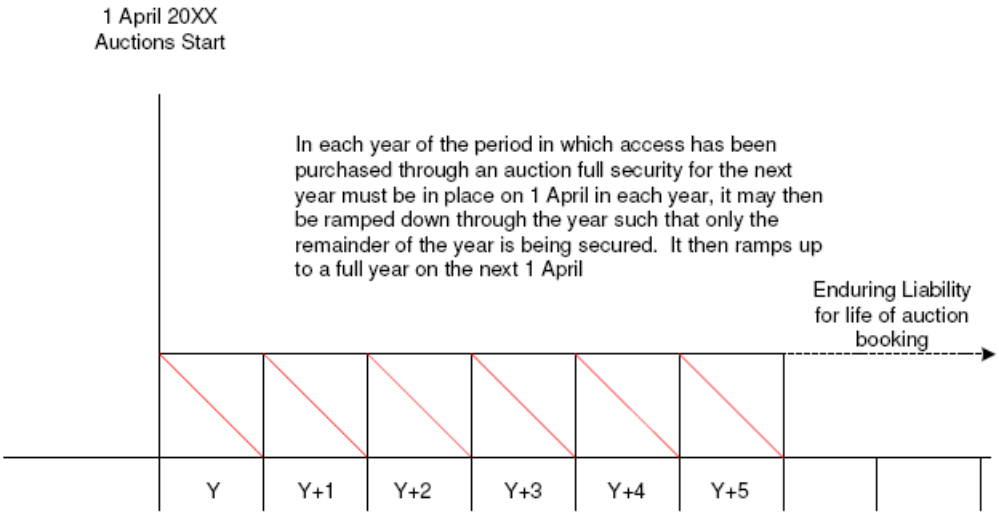
3.5.1.6 Local Cancellation Amounts will be calculated using the prevailing Local Generation TNUoS tariff at the time Capacity Reduction. Capacity Reduction Charges would not apply to projects where there are no transmission asset works.

3.5.1.7 The introduction of generic Local Capacity Reduction Charges, defined in the CUSC to replace the existing final sums regime, defined in the bilateral Construction Agreements, will also require the introduction of provisions to define the level of financial security that should be held in relation to these potential liabilities.

3.5.1.8 It is therefore proposed to add the applicable Local Cancellation Amount to each User's Security Requirement, as defined in paragraph 3.22 of the CUSC. To the extent that these amounts exceed the Allowed Credit extended to each User, Security Cover will need to be provided to National Grid, in any of the forms prescribed in the CUSC.

3.5.2 Post Commissioning Security

3.5.2.1 Financial security would be required for the balance of the current year's generation TNUoS charges – that is to say any Local TNUoS charge, Residual TNUoS charge and any charge payable based as a consequence of a successful auction bid. This amount would be added to each User's Security Requirement, as defined in paragraph 3.22 of the CUSC, and, to the extent these amounts exceed the Allowed Credit extended to each User, Security Cover will need to be provided to National Grid, in any of the forms prescribed in the CUSC. Diagrammatically this is as follows:

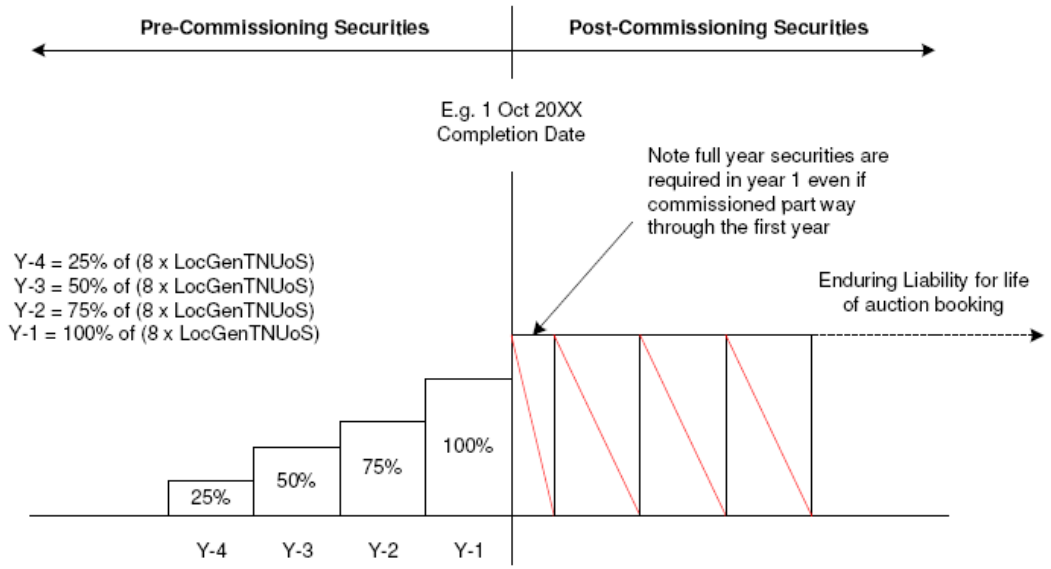


Each years security requirement is made up of that year's:
Local TNUoS liability + Residual TNUoS liability + Wider Auction charge liability

3.5.2.2 It is noted that should any of the component TNUoS charges be payable on a £/MWh basis, rather than a £/MW basis then there will need to be a year ahead forecast made to ensure the appropriate amount of security may be made available. This may be calculated as security for BSUoS is currently.

3.5.2.3 It is also noted that the above treatment of post-commissioning security would introduce a significant new requirement for security (27% of approx. £1billion of annual TNUoS revenues).

3.5.2.4 One other aspect of the post-commissioning security / charging arrangements for newly connecting generators is that a full years charges will be accrued and equivalent securities will be required even if the generator commissions part way through the year (as is the case with the existing TEC based charging arrangements). Diagrammatically the transition from pre- to post-commissioning securities is proposed to be as follows:



3.5.3 Security – Balance between Pre- and Post-Commissioning Generators

3.5.3.1 In the above it is noted that the proposed security requirements for post-commissioning securities as they stretch across Local, Residual and Wider TNUoS charges are more onerous than those for pre-commissioning securities which are based solely upon the Local element of TNUoS charges. This approach has been adopted in this proposal not because the Working Group believes that this is necessarily reflective of the actual risks posed by pre- and post-commissioning generators, but rather because the group has not been able to reach a workable proposal for charging equivalent securities for Wider and Residual TNUoS to pre-commissioning generators.

3.5.4 Transition to New Security Arrangements

3.5.4.1 As part of this process, there will be a reconciliation of the security requirements of Users from their existing levels of securities held under the current access arrangements to the new required levels of securities under any auction based access arrangements. Where a User wishes to retain its existing security arrangements (the “Pre-CAP166 Security Arrangements”) following any implementation of CAP166 then it shall be permitted to do so. This arrangement is in place due to the current financial climate and the concerns of certain generators that having to refinance securities due to a change of commercial regime may lead to material financial losses as the terms on which existing securities have been procured may no longer be available.

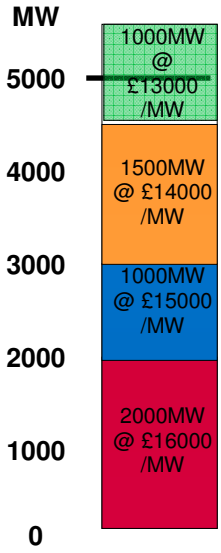
3.6 Auction Design

3.6.1 It is proposed that the auction for long-term entry capacity access rights would be on a pay as bid basis, with multiple rounds (of the auction). Generators’ bids would specify the volume (MW) of transmission access they required in each zone, and the associated price that they were prepared to pay.

3.6.2 In each zone, for each (whole) financial year (1st April to 31st March), the GBSO would stack the bids for transmission access capacity (MW) in descending price order. Bids would only be considered as valid if they were no less than a zonal reserve price (set by the GBSO and notified to bidders in advance). Bids in the stack below the zonal baseline (MW) capacity for transmission access would be allocated to the respective bidders. The marginal bid in each zone would be pro-rated to the limit of available (MW) capacity, and offered to the marginal bidder (with no obligation for them to take that capacity).

3.6.3 These rules are illustrated in the below diagram. The zonal baseline capacity in this example is 5000MW, and the reserve price is £13000/MW. Bids are stacked in descending price order such that the bid for 2000MW at £16000/MW is consider first. As can be seen, 4500MW is allocated to 3 Users. 500MW (of a 1000MW bid) is offered to a fourth User.

Example of a pay as bid auction for a given zone for a given year



3.6.4 In the event that there was more than one bidder at the margin (because all such bidders had bid the same price), the (MW) amount offered to each bidder would be pro-rated in proportion to the volume (MW) of each bidder's bid.

3.6.5 Negative bids would be permitted where the zonal reserve prices are negative. The most negative bids would be considered last (e.g. in a negative zone with three bids of -£1000, -£5000 and -£10000, the -£10000 bid would be considered last). Participation in the auction would be limited to physical players only (i.e. those with a local connection, or an offer for such in the years for which wider access rights were being bid) to prevent the price collapsing to zero.

3.6.6 Under CAP166, wider access rights would be explicitly de-linked from the local connection to the transmission system, and would be auctioned once a year. New entrants would need to apply for a connection to the transmission system at least 3 months before the annual auction to receive an offer for a local connection. This offer would be held open, by the GBSO, until the resolution of the auction process, and the User would have the option of accepting (or otherwise) the local connection offer dependent on the outcome of the auction (see section 3.10).

3.7 Incremental Capacity Release

3.7.1 Any unfulfilled bids (for transmission access) equal to, or in excess of, the zonal reserve price would be tested to see if the release of incremental capacity on the transmission system could be triggered.

3.7.2 A constrained period would be identified in which the release of incremental capacity could not be triggered (because the Transmission Licensees would not physically be able to deliver any reinforcements in such timescales). The exact period would be defined in the transmission licence, rather than the CUSC, and the CUSC would refer to this.

3.7.3 In each zone, the first year outside the constrained period would be considered, and the volume (MW) and price associated with any unfulfilled bids equal to, or in excess of, the zonal reserve price would be noted, and the resulting amount of revenue foregone calculated. It would be assumed that the total volume of such bids could be released, and the amount of additional revenue that could be derived from the release of unfulfilled bids in subsequent years would also be calculated. Where the Net Present Value of the resultant transmission revenue stream was in excess of 50% of the cost of providing the additional capacity, the incremental capacity would be released, and the reinforcement constructed.

3.8 Under/Over Recovery

3.8.1 The Working Group noted that the revenue recovered from successful auction bids was unlikely to equal the proportion of the transmission licensees maximum allowed revenue that is to be recovered from generation Users (27%). The Working Group discussed the provisions that would be needed to deal with over or under recovery. Whilst this is strictly a charging issue, the discussion is included here for completeness due to the interaction with auction.

3.8.2 The Working Group identified the following options to deal with any revenue surplus or deficit as a result of the auction.

3.8.3 Option A: Re-circulate to generation Users within the same zone

3.8.3.1 The Working Group investigated this option for the original CAP166 proposal. Given that a zonal auction is essentially a set of separate auctions for zonal capacity, the Working Group considered that the objective was to discover the differential between what bidders were willing to pay in a particular zone rather than between what bidders in different zones are willing to pay. For this reason, the Working Group considered that it may be appropriate for any zonal under or over recovery to be returned to Users that bid in that particular zone.

3.8.3.2 Following some basic testing of the original proposal, some Working Group members found that returning any over-recovery to Users within a particular zone meant that, for a dynamic auction, the auction would never close. Users within the zone would always be happy to increase their bid because they would know that their use of system charge (in this case payment) would also increase. For this reason this option has been discounted.

3.8.4 Option B: Re-circulate to all generation Users

3.8.4.1 The Working Group agreed that this would be the most appropriate approach for an ex post auction since it would ensure that the differentials between prices, which reflect the differences in the long-term locational value of transmission access, would be maintained.

3.8.4.2 The Working Group also considered this approach for the original proposal as a solution to the problem outlined above. However, some Working Group members believed that this would represent a cross-subsidy since Users in some zones would benefit from (potentially significant) over-recoveries in other zones despite the fact that they were essentially competing in separate auctions for separate zonal capacity. Despite the reservations of these Working Group members this approach is the favoured option of the Working Group as a whole.

3.9 Impact on the System Operator and Transmission Owners

3.9.1 The GBSO will receive all requests for local connections to the transmission system and will pass this information to the relevant TO.

3.9.2 The GBSO would administer the auction of wider entry access rights, including the publication of the required information after each round and monitoring allocation between rounds against the auction close-out criteria.

3.9.3 Following the auction, the GBSO will know the revenue to be recovered from generators based on the successful bids for long-term access rights in the auction. It is likely that there will be a difference between the total annual revenue recovered from the auction and the proportion of the maximum allowed revenue (27%) that is to be recovered from generation. This difference (surplus or deficit) will be passed back to all generation Users as part of the Residual element of the transmission use of system charge ("TNUoS").

3.9.4 The TOs will know the transmission system reinforcements that are required and the associated timescales and will be required to complete them to time. In the event that such reinforcements are not completed to time, the GBSO would need to buy back that amount of capacity. Arrangements for the funding of such buy back payments will need to be agreed (outside of the CUSC, as is the case for other existing incentive schemes); for instance it may not be appropriate to expose the TO to any such costs that result solely from consenting delays.

4.0 SUMMARY OF WORKING GROUP DISCUSSIONS

During the Working Group meetings between April 2008 and December 2008 the Working Group mainly considered auction models where Users bid a price. When the first version of the Working Group report was submitted to the CUSC Panel the Working Group requested an extension to consider an auction model where Users bid capacity and duration. Section four is split into two sections: the first describes the discussions of the Working Group up to the first Working Group report and in the majority consider a price auction, the second describes the discussions of the Working Group during the eight week extension and consider a capacity and duration auction.

4.1 Price Auction

The following section summarises the discussions which took place in the Working Group during the initial period where the focus was on development of a price based auction.

The main feature of such an auction is that the System Operator publishes the availability of capacity in each year of the auction to the market and uses the prices submitted by Users to determine the allocation of rights.

4.1.1 Nature and Definition of Rights

4.1.1.1 The nature and definition of the long-term entry rights to be allocated through an auction process are proposed to remain the same as current rights apart from the following key differences: The rights will be allocated by auction and the rights will apply for a defined period (rather than allocated first-come-first-served and automatically renewed each year, as at present; the rights would be implemented zonally rather than nodally; the rights would be split into two components (local and wider); and final sums would be replaced by a generic commitment based on the accepted bid prices.

4.1.1.2 The majority of Working Group members believed that they currently had 'evergreen' transmission access rights (assuming they paid TNUoS) and it was not appropriate (or potentially legal) for these to be withdrawn through a CUSC amendment. The Authority representative stated their belief that rights under the CUSC were unclear, and that there are features of the existing rights which suggest they are not evergreen. National Grid noted that whilst the rights currently have evergreen characteristics, such features could be changed by making an amendment to the CUSC.

4.1.1.3 Some members of the Working Group suggested that if this were the case then rights to be allocated, via CAP166, could also, in the future, be removed (or fundamentally altered) via an amendment to the CUSC. The Authority representative stated that, in the case of future rights where parties have made a non-reversible financial commitment, this was unlikely to be appropriate. However, they did not believe that this was the case for existing rights.

4.1.1.4 Some members believed that if existing rights were evergreen, this would constitute a property right, and that such rights could not be changed solely by a CUSC amendment. However, the Working Group accepted the suggestion of the Chair that, without prejudice to those rights, in order to proceed with the work of developing and assessing CAP166 they had to set aside their views of existing transmission access rights.

4.1.1.5 Some members of the group considered that it may be hard for Users to know when their power station will close and therefore difficult for them to know for how long to bid for transmission access rights in the auction. Other members of the group considered that Users would be in better position to predict when their power station might close compared to transmission owners.

4.1.1.6 The amendment proposed allocating capacity in blocks of (whole) financial years of transmission access bookings. The group discussed whether shorter blocks should be offered, but agreed that this was addressed by CAP161.

4.1.1.7 The group discussed whether it was appropriate for the long term access rights to be zonal by definition, and whether zones would be stable enough for capacity to be allocated for 10 or 20 years (or indeed longer). The group considered that the auctioning of zonal rights would be complex to manage if the zones changed. Some of the Working Group were concerned that small portfolio or single station Users would be disadvantaged by zonal transmission access rights if they were implemented without other sharing arrangements (as proposed in CAP163). Zones were considered in greater detail by the (CUSC Transmission Access) Supporting Changes Working Group (known as "Working Group 3"), this discussion is summarised later in this report.

4.1.1.8 The Working Group discussions considered arrangements for wider access to the transmission network. Working Group 3 considered the appropriate arrangements for the local connection, and this is included in section 4.2. The interactions between the two products are however in section 4.3 below.

4.1.2 Generation Zoning and LCN Definitions – WG3 Discussions and Conclusions

Generation Zoning

4.1.2.1 National Grid recommended that in light of the proposed suite of CUSC Transmission Access Review Amendments (namely CAPs 161, 162, 163, 164, 165 and 166), it might be appropriate to move away from the existing TNUoS generation zones and develop a set of zones which better facilitate the release of transmission access via SO Short-term Entry Rights (CAP161), Entry Overrun (CAP162), Entry Capacity Sharing (CAP163), Long-term Finite Rights (CAP165) and Long-term Entry Capacity Auctions (CAP166). To help facilitate this work on zones the CUSC Amendment Panel established a separate group, known as Working Group 3, to assist Working Groups 1 and 2. Transmission Access Working Group 3 considered generation zoning in detail, a summary of their discussions is included in this section.

4.1.2.2 At the second meeting at Working Group 3 on 27th May 2008, National Grid introduced two separate generation zoning options in the form of: (i) a Scenario-based Zoning Methodology ("SZM"); and (ii) a Network-based Zoning Methodology ("NZM"). Both methodologies were proposed on the assumption that:

- local reinforcement works required to connect a generator to the MITS (and therefore make use of transmission capacity) are achievable;
- the resulting zones facilitated TEC exchanges within zones on a 1:1 basis; and
- limits (MW) at points of connection can be 'aggregated' in terms of their effects on wider transmission system constraints.

Scenario-based Zoning Methodology ("SZM")

4.1.2.3 The SZM considered the actual boundary constraints of the transmission system and followed the process of: (i) identifying candidate boundaries; (ii) identifying critical circuits for these boundaries based on the required transfer level specified within the GB SQSS; (iii) the calculation of sensitivity factors at all nodes with regard to critical circuits; and (iv) the grouping together of those nodes which have similar sensitivities.

4.1.2.4 In practice, candidate boundaries were identified manually based on the operational boundaries of the transmission network. The worst critical contingency and circuits were then identified against the indicative boundary. Sensitivity Factors were then calculated for each node by 'injecting' an additional 100MW of generation at each node within a zone and calculating the resultant flows on each of the relevant critical circuits under a contingency. Those nodes of Sensitivity Factors within a range of 20 percent were then grouped together.

4.1.2.5 The advantages of the SZM were observed as being that:

- maximum tradable transmission capacity within a zone could be derived from Sensitivity Factors for the winter peak scenario;
- the grouping of nodes of similar Sensitivity Factors into zones gives greater clarity and certainty to zonal transmission access; and
- additional constraint costs are minimised because actual transmission network constraints are honoured.

It was also noted that the publishing of nodal Sensitivity Factors leads to an indicative economic optimisation for TEC exchange.

4.1.2.6 The disadvantages of the SZM were noted to be that critical circuits tend to 'move' in meshed networks and that they are scenario and contingency dependent. Additionally, it was noted that zones developed under the SZM are unlikely to remain stable over a number of years due to changes to the transmission network and the demand and generation background.

Network-based Zoning Methodology ("NZM")

4.1.2.7 The NZM did not consider actual transmission boundary limitations, but worked on a 'hub and spoke' principle, considering the change in voltage angles resulting from the exchange of TEC at individual nodes as the parameter for determining relevant zones. It was identified that under the NZM, zones might be considered to be less likely to change so long as the network topology and impedance of the transmission network did not change significantly. And, where the SZM studied a few 'snapshots' of the transmission system, the NZM did not rely on a specific scenario being studied, hence providing more stability to the zones in the long-term.

4.1.2.8 Limitations of the NZM were identified to be that the choice of hub-node used to determine the zones was critical to the zonal definition and likely to have a significant impact on a generators ability to exchange transmission access rights. Additionally, it was noted that actual transmission system constraints might not be fully reflected.

Working Group 3 discussion

4.1.2.9 Working Group 3 noted that a significant amount of further information and analysis of both options was required, including the estimated total effect on transmission constraints, the stability of zones and the 'liquidity' of capacity exchange.

4.1.2.10 Working Group 3 questioned as to whether it would be possible to overlap zones in the NZM, or even have a unique zone for each node to maximise tradability. Concern was expressed however, regarding the impact of sequential trades from zone to zone and the potential impact of this on constraint costs.

4.1.2.11 In addition to the SZM and NZM, Working Group 3 questioned the possibility of the publication of node to node exchange rates in preference to zoning. The presentation slides regarding the SZM and NZM can be found on the National Grid Codes website.3

Indicative generation zones

4.1.2.12 At the fourth meeting of Working Group 3 on 16th June 2008, National Grid presented some indicative generation zones based on both the SZM and NZM. Zoning for regions that are radial in nature was relatively simple, the zoning process however, was much more difficult due to the presence of loop-flows.

4.1.2.13 It was noted that in the short to medium term (circa 2-3 years), National Grid (as the GBSO) can arrive at larger generation zones which may better facilitate the exchange of transmission access rights due to the greater certainties associated with background conditions and operational measures. In the longer-term however, it was considered that smaller generation zones would be required to cater for increased uncertainty.

4.1.2.14 In general, a number of key issues and findings were noted:

- Generation zones were generally different from the existing TNUoS generation charging zones.
- Short-term zones can be much bigger than the long-term zones, and they can change from time to time.
- In a meshed network, the effect of loop-flows may increase the percentage loadings on critical circuits and make it difficult to define zones.
- The definition of local works will affect zoning criteria.
- Being geographically proximate does not necessarily mean being electrically proximate, especially when substations are operated in a "split" configuration. In this instance, re-arranging of busbar sections or substation uprating may be required to facilitate TEC sharing.

Working Group 3 discussion

4.1.2.15 Working Group 3 noted the importance that any new zoning methodology should be suitable for all long and short-term transmission access products proposed under the suite of CAP161-166 amendments and gave consideration to the trade-off between the potential increased costs of operational constraints, the liquidity of absolute trades, and the number of nodes in each zone. It was considered that zones should be based on capability (e.g. local connection capacity) rather than obtained long-term transmission access rights (TEC or its equivalent).

Hybrid zoning methodology

[3] http://www.nationalgrid.com/NR/rdonlyres/9A797D89-2BC2-459C-A3C7-744F3212109F/25954/Meeting2Zoning.pdf

4.1.2.16 At the fifth meeting of Working Group 3 on 1st July 2008, National Grid presented some indicative generation zones based on a hybrid (of SZM and NZM) zoning methodology, in that a critical trip was applied (under n-d) with 100MW injected at each of the rim nodes and then extracted at the hub node. Following this, the loading of all lines under a combination of every rim-rim, rim-hub pair was analysed. If a loading increased by more than 20MW, this was then considered to be a 'sensitive' case. The exercise was repeated for a number of other critical trips with a sense check undertaken prior to determining the zones.

4.1.2.17 The methodology applied to determine a set of zones was as follows:

1. Set local works and size of zones (2 of the 3 variables – excluding constraints).
2. Identify active constraints based on existing knowledge of that selected zone.
3. Calculate the volume of additional constraints based on:
   - NZM sensitivities;
   - Load factors of buying and selling generators to calculate the volume of potential tradability.
   - Use realistic outage windows to estimate the number of hours of potential exposure to constraints.
4. Estimate the costs of constraining off and replacement energy.

Operational constraint costs

4.1.2.18 In addition to presenting some indicative generation zones and some of the issues surrounding the zoning process, consideration was given to the balance between facilitating transmission access tradability within zones and the consequences of constraint costs and stability.

4.1.2.19 Operational constraint cost is calculated based on the volume of active constraints (MWh), multiplied by the cost (£/MWh) of these constraints. It was noted that a small generation zone will lead to less trading options, though this might not necessarily be considered as a 'low' level trading. Working Group 3 members considered that a potential % cap of total zonal trades should ideally, be the same for all generation zones, although different zones may permit a far larger volume of transmission access trade for the same operational cost risk. It was considered that limits on trades would allow larger zones with more nodes, and that a limit could be set as a function of the load factor of generators, or proportions of the total transmission access capacity (MW) within a zone.

4.1.2.20 National Grid presented some high level analysis on the volume of additional constraints and the associated cost of this, based on a mid depth local works definition and the exchange of between 25-100% of TEC within a zone when compared to existing constraint costs of approximately £80m per annum.

Working Group 3 discussion

4.1.2.21 Working Group 3 noted that there is a trade-off between (i) nodal tradability, (ii) maximum zone size and (iii) how much local works must be completed prior to transmission access being allocated. For example, if a deep definition of 'local works' is applied then, as a consequence, zones are likely to be larger. It was reiterated that the existing assumption is that when transmission access is exchanged or shared, resulting in additional constraints, this additional cost will be socialised amongst all transmission system Users.

4.1.2.22 Working Group 3 noted that there are three different areas in the TAR proposals where local assets and works are defined: (i) within the CUSC; (ii) for local charging purposes; and (iii) within the zoning methodology. Working Group 3 considered that the disconnect between the actual local works that are required for a connection and the local charge which the User will pay may be necessary to:

- Avoid circumstances in which there would be a permanent output restriction on a generator being connected; and
- Protect the individual generator from the actions of others or the decisions of the Transmission Owner.

4.1.2.23 The Working Group noted that having separate definitions may be consistent with the way in which current Construction Agreements list the incremental works required to accommodate generators, with the generator paying the Long-Run Marginal Cost (LRMC) derived from the Investment Cost Related Pricing (ICRP) transport and tariff model. However, the Working Group subsequently agreed that different CUSC and charging definitions may lead to Users getting access rights without facing the associated cost reflective charge, as described in 4.1.3.11 below.

4.1.2.24 Working Group 3 considered that the stability of zones was very important and therefore new generation zones should not be developed in this process on the premise that zones are acceptable at present, but there may be issues to address in the future. The presentation slides relating to the hybrid zoning methodology can be found on the National Grid Codes website.4

4.1.2.25 At the sixth meeting of Working Group 3 on 16th July 2008, National Grid presented some indicative generation zones, using a 'mid depth' definition of local works and a lower Sensitivity Factor limit (20%). In order to avoid significant local works reinforcement conditions, very small zones were created which based on previous Working Group 3 discussions, were considered too small. However, it was noted that to fully appreciate the 'size' of zones, it is the number of trading parties and the amount of tradable transmission access capacity within a zone that should be considered more relevant than the geographic area.

4.1.2.26 In parallel, National Grid presented some further analysis on indicative generation zones based on a 'deeper' definition of local works, to assess how this may increase the tradability of transmission access. Several Indicative zones were created although it was noted that it was not possible to zone certain regions such as East Anglia on the basis of the deep definition, without invoking local works designs that were economically inefficient. In general, it was considered by the Working Group that moving to a deeper definition of local works did little to increase the size of zones and the potential liquidity of access sharing.

4.1.2.27 Working Group 3 noted that stability at nodes is important, but the possibility of considering (i) nodes with existing generation and (ii) nodes with signed applications (to connect to the transmission system at some date in the future) should be explored. This was not necessarily perceived to provide stability to zones beyond a 3 to 5 year period, but it was deemed workable if a fully automated and transparent model can be made publicly available to the industry.

[4] http://www.nationalgrid.com/NR/rdonlyres/1E709B88-B313-47B7-9835-2424C283798C/26845/GenerationZoning_final_meeting5.pdf

Generation zoning and nodal exchange rates

4.1.2.28 At the seventh meeting of Working Group 3 on 29th July 2008, National Grid recapped on the generation zones which had been presented to date, noting that these were based very much on existing generation centres, existing demand centres and radial spurs.

4.1.2.29 When identifying the generation zones, a number of factors had been raised as requiring consideration, particularly as to whether generation zones should be developed with a view to them being short-term or long-term, and whether they should be based on physical transmission system boundary limits or the additional constraint costs that these would be likely to produce. Given the complexity of zoning, attention of Working Group 3 turned to giving consideration of inter-zonal TEC exchange of transmission access and even the possibility of nodal TEC exchange of transmission access.

4.1.2.30 The options considered included the determination of a nodal 1:1 exchange rate based on the physical transmission network rather than generation background, which should therefore be temporally stable. This option would need to consider both long-term and short-term timescales, local charging definition and reflect network contingency analysis.

4.1.2.31 The second option was for a Locational Marginal Pricing ("LMP") based approach for setting point-to-point rights. This bid-based approach can accommodate multiple constraints and payments would be made into a 'pool' based on the cost as compared to a hub point. Working Group 3 had concerns that the results would be volatile and that there would be less transparency behind the prices. In addition, the approach was felt to be complex.

4.1.2.32 Alternatively, a 'flowgate' approach was considered which would look at the physical capacity of constraining transmission circuits. This was felt to be a substantial change to existing transmission access rights, and with the example of around 1.5 billion nodal calculations per year required to update the Flowgate rights, Working Group 3 felt that this option was the most complex to implementation and was prone to volatility.

4.1.2.33 The last option considered was the use of a nodal exchange rate using a MWkm methodology. Consideration was given to using the Direct Current Load Flow ("DCLF") transport model currently used to calculate TNUoS tariffs, to calculate nodal exchange rates for transmission access. This option involved taking into account various sets of contingencies, with the added advantage that some automation to identify all circuits was already available in the form of the Secured Load Flow model used to calculate to Global Locational Security Factor in TNUoS tariffs.

4.1.2.34 The weaknesses of this option were noted as being that the use of MWkm as a measure, does not equate to a critical circuit flow and as a result, overestimated transmission access exchange rates had already been identified at this early stage and would continue to be a significant risk. In addition, it was noted that there was no correlation to overloaded flow and the increase in GBSO costs that would be associated with this.

4.1.2.35 At the eighth meeting of Working Group 3 on 13th August 2008, as well as further developing the principle of a zonal methodology based on nodal exchange rates, National Grid introduced a zonal alternative and a nodal alternative.

4.1.2.36 **Nodal exchange rates:** A step by step methodology was discussed for establishing zones through grouping nodes between which the exchange rate fell within a certain range. Example exchange rates were shown for a particular approach based on specific assumptions. The approach was based upon worst-case contingencies in order to establish exchange rates, where the resultant zones would have minimal constraint costs arising from the exchanges. Transmission access exchange rates were shown for one set of possible assumptions. Working Group 3 was comfortable with the exchange rate discussed, which reflected the different impacts on a specific circuit from different nodes, but expressed concerns that under various critical trips the exchange rate may change significantly.

4.1.2.37 **Zonal alternative:** An alternative is to use zones that have already been defined (e.g. SYS, charging or candidate short/medium term generation zones), then the impact of such (i.e. increase in constraint costs) could be examined for an agreed suite of assumptions and scenarios. The Working Group agreed that careful assumption must be made around likely projects connecting and TEC sharing behaviour.

4.1.2.38 **Nodal alternative:** Working Group 3 considered an ex ante nodal exchange rate approach. The total impact on constraint costs is mitigated when Users who wish to share, notify the SO of the specific nodes between which the transmission access will be shared in addition to the maximum size of trade. This allows a more robust exchange rate to be established. Once granted sharing could occur over any timescale; without exposure to nodal overrun charges.

Sharing access rights between nodes

4.1.2.39 Given the issues identified with establishing zones in which sharing with a 1:1 exchange rate is allowed, at the ninth meeting of Working Group 3 on 22nd August 2008, the Working Group gave some further consideration to some potential options for sharing transmission access between nodes, without the requirement for generation zones. Three models were considered (the presentation is available on the National Grid Codes website):

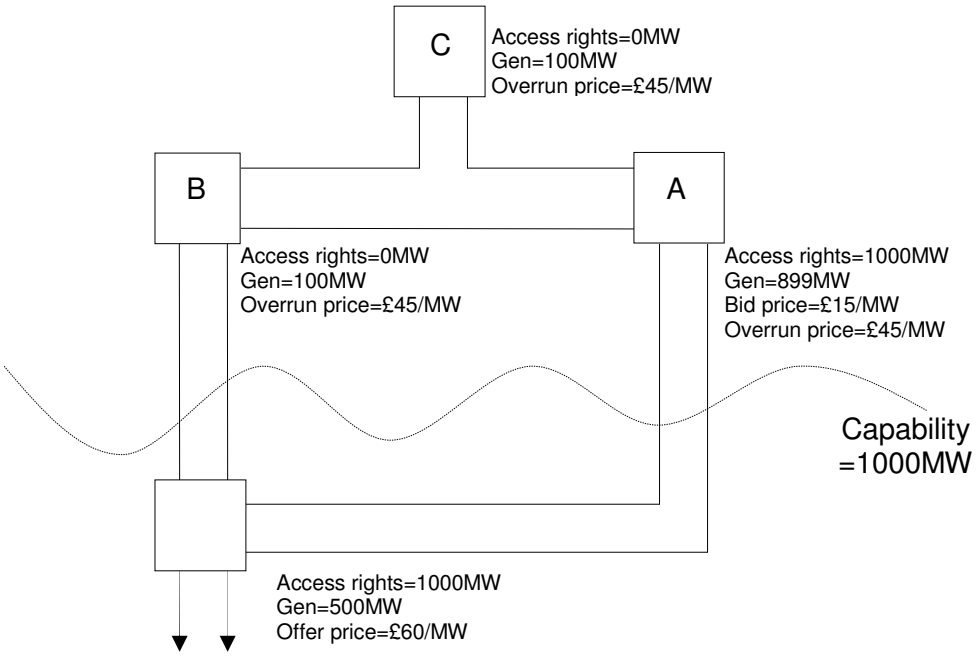
(a) Sharing with exchange rate determined by ratio of nodal (ex post) Overrun prices;
(b) Sharing with fixed point to point exchange rate calculated by National Grid based on known volume and duration; and
(c) Sharing facilitated by the release of point to point transmission access rights by National Grid in investment timescales.

Exchange rate determined by ratio of nodal Overrun prices

4.1.2.40 Under this option, the User would notify National Grid of a sharing arrangement agreed bilaterally between two parties. National Grid would then calculate exchange rates based on (ex post) overrun prices. The results from these calculations would then form the inputs into the calculation of overrun volume.

4.1.2.41 Whilst overrun prices allow Users to share transmission access rights to an extent, Working Group 3 considered that there was an issue with a bilateral exchange being affected by a third party generating, which would consequently affect the overrun prices and exchange rates

4.1.2.42 If we consider the simplified example (shown in the diagram below) of two generators behind a constraint, generator A has long-term transmission access rights and generator B does not. The overrun price increases above zero only if the aggregate output from both generators exceeds the long-term rights held by generator A. This means that provided generator A reduces output whenever generator B wants to generate, the overrun price faced by generator B will be zero.



4.1.2.43 This arrangement would break-down if there was a third generator, generator C, generating without transmission access rights behind the same constraint. The output from generator C could also cause the overrun price to increase above zero, undermining the effectiveness of the sharing arrangement between generator A and generator B.

4.1.2.44 In these circumstances, generator A is not able to extract the full value of their transmission access rights due to the actions of a third party. This would be solved if generator A and generator B were to enter a sharing arrangement with the associated transmission access exchange rate based on the ratio of the (ex post) nodal overrun prices. Now, if generator C decides to generate, this would push the overrun price at the generator A node and the generator B node such that the exchange rate remains constant.

4.1.2.45 In more complex examples, the actions of generator C may cause the exchange rate between generator A and generator B to diminish, as there would be a constraint between generator A and generator B, but the value of generator A's transmission access rights at generator B's node would always be accurately reflected.

4.1.2.46 Working Group 3 considered the following high-level process for exchange rates determined by the ratio of overrun prices, noting that this option for sharing transmission access rights was reliant on the approval of the CUSC amendment (CAP162) to introduce overrun prices calculated in a cost reflective manner. The Working Group subsequently agreed that this option was only applicable with overrun with a marginal price, as described in the Final Conclusions from Working Group 3 below.

(a) Users notify National Grid of sharing arrangement

i. It has been assumed that a joint request for a sharing arrangement would be made by a User with transmission access rights (seeking to donate) and a User without transmission access rights (seeking to receive).

ii. The request would state a 'go-live' date and 'end-date' for the arrangement, along with a maximum capacity in MW. The maximum capacity is included to allow a User to donate to a number of receiving Users.

iii. The request would need to be made [x] days ahead of time to allow for the necessary administrative process to be undertaken.

iv. The Sharing arrangement and associated 'go-live' date and 'end-date' would need to be recorded in a central register.

(b) National Grid calculates transmission access exchange rates based on ratio of (ex post) overrun prices

i. For a donation of transmission access rights from node A to node B, the exchange rate would be calculated as:

$$Exchange\ rate = \frac{Overrun\ price_{Node\ A}}{Overrun\ price_{Node\ B}}$$

Therefore, if the power station at node A reduces output to 100MW below its total transmission access rights holding, and the overrun prices are £45/MWh at node A and £50/MWh at node B, this would provide for the following at node B:

$$100MW \times \left[\frac{£45/MWh}{£50/MWh}\right] = 90MW$$

ii. This calculation would be performed for each half-hour for which the sharing arrangement is valid (i.e. between 'go-live' date and 'end date'.

(c) Results from calculations in (b) form inputs to calculation of overrun volume

i. It should be noted that this calculation is reliant upon overrun prices being calculated prior to the final volumes of overrun being known. (This cannot be done for the Cost Recovery methodology)

ii. The volumes of overrun at each node would need to be corrected for these exchange rates. If, in the example above, a generator at node B without access rights generated 100MW, this would initially be considered as 100MW of overrun, but the exchange rate would then be calculated which would essentially show a 100MW donation from node A providing 90MW of transmission access rights at node B and the overrun volume would be corrected from 100MW to (100MW-90MW=) 10MW.

Fixed point to point exchange rate calculated by National Grid

4.1.2.47 Whilst option 1 (exchange rate determined by ratio of nodal overrun prices) may be acceptable for Users that are reasonably (electrically) proximate, this is unlikely to be the case for generators that are further apart, due to the increased risk of a binding constraint that effects the receiving (but not the donating) generator. In order to facilitate sharing for these power stations, National Grid could calculate a fixed transmission access exchange rate that could be applied.

4.1.2.48 The work to investigate 1:1 sharing within pre-defined zones has identified significant risks due to actual node to node exchange rates being dependent upon:

(a) The volume of transmission access rights shared: A node to node exchange rate calculated based on a transfer of 1MW may be incorrect for a transfer of 10MW, 100MW or 1GW.

(b) Other transmission access right sharing: The exchange rate between nodes A and B may be incorrect if there is a transfer between nodes C and D.

(c) Other time dependent transmission system conditions: On the day transmission system conditions, such as demand and circuit outage conditions, also impact on node to node exchange rates.

4.1.2.49 In order to ensure that reasonable node to node exchange rates can be calculated, the User would need to minimise uncertainty by specifying the maximum volume of transmission access rights to be Shared and the timing and the duration of the sharing arrangement.

4.1.2.50 Working Group 3 considered the following high-level process for fixed point to point transmission access exchange rates calculated by National Grid.

(a) Users apply to National Grid for a fixed exchange rate

i. It has been assumed that a joint request for a sharing arrangement would be made by a User with transmission access rights (seeking to donate) and a User without access rights (seeking to receive).

ii. The Users would be liable to pay a fee to cover the cost of the analysis performed by National Grid.

iii. The request would state a 'go-live date' and 'end-date' for the arrangement, along with a maximum capacity in MW. As described above, the fixed duration and maximum volume information is required to cap the risk associated with the sharing arrangement, allowing the SO to calculate a reasonable fixed exchange rate.

(b) National Grid calculates fixed point to point exchange rate

i. The request would need to be made a number of weeks ahead of time to allow for an engineering assessment to be undertaken by National Grid (the number of weeks of analysis would depend on the duration of the exchange rate).

ii. For applications for exchange rates within the current operational year, the assessment would be based on the current transmission system and would be performed against the requirements of the operational criteria contained in the SQSS. This assessment would reflect the information that is available in these timescales, including demand level and planned transmission system outages.

iii. For applications for exchange rates that go beyond the current operational year, the assessment would be against the current and committed transmission system (including planned reinforcements) and would be performed against the requirements of the planning criteria contained in the SQSS.

iv. The Working Group subsequently considered that this assessment should not increase socialised constraint costs or sterilise boundary capability

(c) National Grid offers fixed exchange rate and User has 2 weeks to accept. If accepted, the Sharing arrangement and associated 'go-live date' and 'end-date' would need to be recorded in a central register and used in overrun volume calculations and future 'applications' for capacity/exchange rates. The appropriate charge for this was considered to be a cost-reflective fee based on the administration costs.

Point to point access rights released by National Grid

4.1.2.51 In the event that a fixed transmission access exchange rate provided by the aforementioned option above was considered to be unacceptably low, Users may want the Transmission Owners to invest in order to achieve a point-to-point capability. Such investment could be minor (and therefore relatively quick) when compared to the investment required to provide that same User with full entry rights.

4.1.2.52 In this option, a User would apply to National Grid for a transmission access right between [Node A] and [Node B] for a maximum of [x] MW and a duration of [Y] years. National Grid would then assess that application against the current planning baseline with an additional [X] MW of generation at Node A and an additional [X] MW of demand at Node B.

4.1.2.53 National Grid would then offer a point-to-point transmission access right to the User, with the offer including a list of reinforcement works triggered by that application. In the event that the User then accepts this offer, a point-to-point right is only available when reinforcements have been completed. The point-to-point right is recorded and used in overrun volume calculations and future 'applications' for capacity / exchange rates / point to point rights. It was considered appropriate that a User should pay the TNUoS differential between Node A and Node B for [Y] years.

Cost of Constraint Analysis on the Short/medium Generation Zones

4.1.2.54 The expected impact from implementation of the proposed short/medium term generation zones was presented during the tenth meeting of Working Group 3 on 12th September. An examination was made of the potential additional costs of constraints incurred as a result of transmission access sharing within zones. National Grid noted that where generators are permitted to connect to the transmission system without the requirement to undertake wider system reinforcement, this is likely to result in additional system boundary constraints and increase the constraint volumes on the existing constraint boundaries.

4.1.2.55 Working Group 3 considered that further thought regarding the range of assumptions was required in the pursuit of calculating the utilisation element of constraint cost. Problems with trying to make predictions about future constraint cost trends from using historic SO costs were identified. It was noted that in a zone which flips between importing and exporting, it is not appropriate to attribute a cost to the boundary constraint under a winter peak scenario as it might not always be obvious if costs are related to an export or an import. In these cases, the data used needs to be further analysed to properly attribute an export or import cost against the corresponding linear trending in export or import utilisation.

4.1.2.56 The locational element of constraint cost was also analysed. One to one trading was considered to be acceptable up to a point of 'headroom', beyond which a specific point to point arrangement would be required. It was noted that any trade undertaken will change the size and validity of the headroom. It was considered that this headroom figure could be fixed for a year, with some risk of an increase in constraints prior to re-calculation in the following year.

Initial Working Group 3 Conclusions

4.1.2.57 Prior to the eleventh meeting of Working Group 3 held on 24th September, National Grid circulated a report[5] that examined the potential additional costs of constraints that would be incurred by the sharing of transmission access within generation zones. The additional utilisation and location costs are calculated using a set of proposed generation zones. The calculations presented have considered factors including headroom, sensitivity factors and loading curves from the generators. The results indicated a total (utilisation + location elements) additional cost of constraints of about £37m per annum if trading up to the headroom level only is allowed. If trading beyond the headroom was undertaken up to 2 times the headroom, the cost of constraints could potentially rise to £1.1 billion per annum for the upper range and a potential saving of about £0.2 billion per annum for the lower range. The £0.2 billion saving is the total cost of constraint from the utilisation element plus the average historical cost of constraint that can be saved. The actual cost would vary depending on the system running arrangement, the characteristics of the generators and the duration of transmission access exchange.

5 http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/workingstandinggroups/wg161-166/

4.1.2.58 During this eleventh meeting, a summary of the options considered was made. A zoning methodology that results in small zones, with a minimal increase in constraint costs, severely limits the liquidity of tradable capacity. The Working Group recognised that methodologies that form large trading zones provide greater tradability, although the increased operational constraint costs which could result from such zones was considered too great a risk. The remaining options are (i) Larger zones, with trading limited to headroom on a point to point and beyond basis, with an allocation process for headroom and subsequent re-allocation process following the completion of a trade, was considered as a viable option by the Working Group. The downside however, was identified as being the complexity of the arrangements which would be required, the potential for hoarding capacity and that trades would be limited to within-zone; or (ii) A nodal point to point option for the sharing of system access which the Working Group also concluded was a viable option.

Final Conclusions from Working Group 3

4.1.2.59 The final Working Group 3 meeting was held on the 10th November, during which the key issues and areas for further confirmation from the consultation phase were discussed. One Working Group Consultation response stated that zones will lead to increased shared constraint costs but conversely, an overly pessimistic methodology may lead to under utilisation of capacity sharing. The Working Group concurred that the analysis previously presented showed that a zonal methodology with large zones has a significant risk of increasing total socialised constraint costs. National Grid discussed how, when determining nodal exchange rates, all feasible worst case system operation scenarios must be considered, in order to meet the principle of maintaining cost levels.

4.1.2.60 A respondent stated that a node to node exchange rate that was significantly different from 1:1 would reduce the effectiveness of sharing. Working Group 3 concurred and reiterated that this is likely to lead to sharing to occur mainly between proximate generators and it was concluded that the exchange rate should be capped at a maximum of 1 to 1 in order to prevent the ability for a User with multiple generators to book capacity and share it in order to minimise transmission charges. A view was expressed in a consultation response that capacity entry sharing should be available in both long term and short term timescales to which the Working Group agreed, although it was recognised that exchange rates may differ between the two as certainty increases towards real time.

4.1.2.61 A respondent stated that a nodal exchange rate methodology must be robust and transparent, but it is felt that this may introduce unnecessary complexity and therefore cost. Whilst the Working Group agreed nodal point to point exchange rates requires a degree of complexity, ultimately it avoids the requirement to achieve a balance between limiting zonal tradability with an onerous headroom limit and introducing unacceptable risks through significant increases in socialised constraint costs. Working Group 3 therefore concluded that a node to node exchange rate methodology should be applied.

4.1.2.62 A respondent questioned how exchange rates based on zonal overrun prices would be calculated. The Working Group discussed the options for overrun pricing set-out in Charging Pre-consultation GB ECM-14 (Consequential impact of CUSC amendment proposals: CAP161, CAP162, CAP163 and CAP164). The options are:

(i) Simple Methodology;
(ii) Cost Recovery Methodology; and
(iii) Marginal Methodology.

4.1.2.63 The simple methodology is based on historic constraint data, which is mapped to 24 indicative constraint zones. This means that all the nodes in a particular zone would be subject to the same overrun price. The Working Group noted that implementing node to node exchange rates based on these overrun prices would essentially allow unfettered sharing with a 1:1 exchange rate within these zones.

4.1.2.64 The Working Group agreed that whilst these zones may give the appropriate level of accuracy for a simple pricing methodology (where the impact is limited by the Local Capacity Nomination), the analysis performed previously would suggest that allowing sharing on this basis would cause an unacceptable increase in socialised constraint costs. For this reason, the Working Group agreed that node to node sharing with exchange rates based on the ratio of ex post overrun prices should not be an option with the simple overrun pricing methodology.

4.1.2.65 Where the cost recovery methodology is based on a "degut" of the actual costs performed ex post by the System Operator, a methodology is used to attribute actual costs to the volume of overrun to calculate a £/MWh overrun price. Whilst, unlike the simple methodology, this cost allocation will be nodal, the Working Group agreed that this methodology would be inconsistent with node to node sharing based on the ratio of overrun prices. This conclusion is based on concerns about the interaction between the derivation of the price and volume of overrun (i.e. it would not be possible to calculate the overrun price until the overrun volume is known, and with sharing the volume is not known until the ratio of overrun prices is determined).

4.1.2.66 The marginal methodology is based on a model of the transmission system which is optimised to minimise system balancing costs. The optimisation generates nodal marginal overrun prices (shadow costs). The Working Group noted that this pricing option was at an early stage of development, but agreed that provided it was developed such that truly nodal (rather than boundary based) prices were produced, then it would be appropriate for use with node to node sharing with the exchange rate determined by the ratio of nodal overrun prices.

4.1.2.67 In summary, the Working Group agreed that node to node sharing with an exchange rate based on the (ex post) overrun prices should only be implemented if the marginal overrun pricing option is implemented.

4.1.2.68 One respondent specifically sought clarification for how codification could be implemented when three or more parties are involved in the transfer if the exchange rate is not 1:1. If different exchange rates are set for each exchange (there could potentially be 6 exchange rates for 3 parties) the codified approach would need to allocate TEC between parties such that monitoring can take place. The Working Group agreed that in cases where three or more parties are involved in the share, complex arrangements would be required to ensure an efficient outcome. Furthermore, the Working Group agreed that the number of parties involved in a share should be limited to two at this stage, but that this limitation should be reviewed when there is some experience of the sharing arrangements.

4.1.2.69 Several respondents to the Working Group Consultation requested clarification of how node to node access capacity exchange rates would be calculated. The Working Group agreed that further illustration would provide additional clarity.

4.1.2.70 The Working Group agreed that the basis of the exchange rate should be to "leave the system whole" such that any spare boundary capability is not used up and there are therefore no concerns about node to node sharing arrangements sterilising boundary capability.

Offshore generation

4.1.2.71 Working Group 3 gave consideration to offshore generation and how this would be incorporated into zones. It was noted that offshore generation is currently being modelled at the landing point, assuming a radial connection and Grid Code compliance at the point of connection.

Governance

4.1.2.72 Two approaches towards the governance of a new zoning methodology were considered by Working Group 3:

1. A new Licence Condition could be written into the Transmission Licence similar to that which exists for the Use of System Charging Methodology (Standard Licence Condition C5) and the Connection Charging Methodology (Standard Licence Condition C6).
2. The governance arrangements for the new methodology could sit in the CUSC.

4.1.2.73 The Working Group considered that the CUSC defines the transmission access product and since zoning is part of the definition of the product, then it would be appropriate to include this as an Annex to the CUSC. Whilst this was the preferred option, the option of a Licence Condition was not ruled out.

4.1.3 Arrangements for Local Connections – WG3 discussions and Conclusions

4.1.3.1 The arrangements for local connections were developed by Working Group 3, and the conclusions are described below.

Definition of Local Capacity Nomination

4.1.3.2 Working Group 3 proposed that for generators with local only connections, a local access product should be developed. This concept, the Local Capacity Nomination (LCN) would be the maximum capacity (in MW) to which a generator is entitled to obtain transmission access products (long-term and short-term access products and overrun) within a charging year. It was also identified that it must not exceed the Connection Entry Capacity (CEC) of that generator to avoid damage to local transmission assets.

Summary of the properties of Local Capacity Nomination

4.1.3.3 LCN was determined by Working Group 3 to have the following properties:

- LCN is the term used by a generator to notify National Grid of its desired maximum local capacity holding in a transmission charging year;

- LCN represents the physical (and contractual) cap on the total generators' transmission access (MW) derived from a combination of all long and short-term transmission access products, including overrun;
- LCN will not exceed a generator's CEC;
- LCN is defined on a Power Station basis (consistent with TEC);
- LCN will be allocated on a first-come-first-served basis;
- LCN will be the basis upon which a generators' local asset charge will be calculated and levied;
- LCN is shareable between generators, when multiple generators agree to share. Any sharing arrangement would be managed with a clause which, in the case of two generators sharing, would restrict one generator if the other generator is using the local connection capacity and vice versa. This approach is similar to that currently adopted to deal with design variation connections.

Enduring arrangements for existing LCN holders

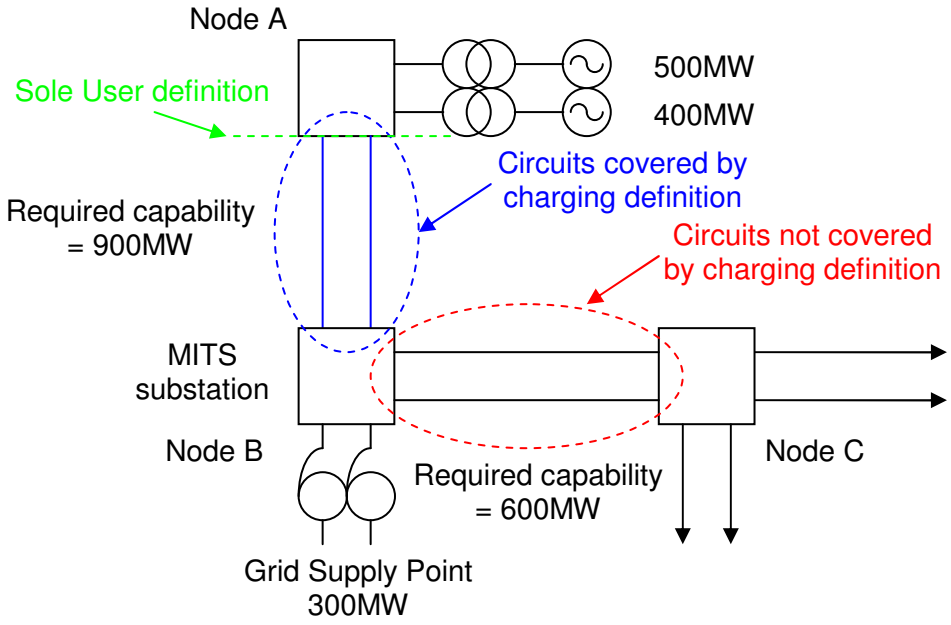
4.1.3.4 Working Group 3 debated as to whether LCN should be a finite right, linked (or not) to the period of firm transmission capacity obtained in an auction, or evergreen. Given that a generator may not wish to obtain long-term capacity through an auction process, it did not seem appropriate to link LCN to capacity obtained through the auction.

4.1.3.5 Working Group 3 considered that evergreen rights would be appropriate provided the definition of local assets is generally limited to "sole use" assets; i.e. local assets are not shareable. Where local assets (which are not shared) come to the end of their life, the TO could determine whether they should be replaced following bilateral discussions with the relevant generator. It was noted that the proposed charging definition of local works included shared use assets in some circumstances and some Working Group members believed that it might be appropriate to change the definition of local assets in these circumstances in order to ensure that they are not shared.

4.1.3.6 The problem with the "sole use" approach to local assets is that it may not in all circumstances be consistent with the principle of ensuring that Users which purchase short-term access products or share, make an appropriate contribution to the cost of the assets that are provided to facilitate their connection. If a "sole use" definition of local assets were to be adopted, then the cost of "spur" circuits to entry points with multiple generators will not be based on LCN (in MW). In the extreme circumstance of a generator choosing a "local only" connection at an entry point at which other generators are connected, that generator would not make any contribution to the cost of the transmission assets required to provide their connection.

4.1.3.7 This is shown in the below diagram. If a "sole User" definition were to be applied (this is represented by the dotted green line), neither generator would make any contribution to the cost of the spur (shown by the blue lines) required solely to provide their connection.

Potential Definitions of Local Works



4.1.3.8 The Working Group therefore concluded that local assets should not be limited to "sole use" assets. The Working Group considered that an alternative approach would be to use the definition from the "local generation charging" proposals contained in National Grid's GB ECM-11 Conclusions Report, which is that local circuits are those between an entry point and the next Main Interconnected Transmission System (MITS) substations, where a MITS substation is defined as a Grid Supply Point with more than one circuit connected or a substation with more than four transmission circuits connected. In the diagram above, these local circuits are highlighted in blue.

4.1.3.9 In this simplified example, the circuits between node A and the next MITS substation (node B) would be defined as "local" under the charging definition. This means that the generators at node A would get access once these circuits had been reinforced to provide a secure capability of 900MW. However, the circuits between node B and node C would not be covered by the charging definition of "local". This would lead to a permanent restriction to the output of the generators unless these circuits were reinforced to provide a secure capability of at least 600MW.

4.1.3.10 As described in 4.1.2.22 above, the Working Group originally considered that different charging and CUSC definitions of "local" works may be required to:

- Avoid circumstances in which there would be a permanent output restriction on generators being connected; and
- Protect individual generators from the actions of others or the decisions of the Transmission Owners.

4.1.3.11 On 10th November, Working Group 3 reviewed the consultation responses, allowing further discussion to be undertaken. The Working Group expressed concerns associated with different charging and CUSC definitions of "local" works. The Working Group noted that if the CUSC definition leads to reinforcement works that go beyond the next MITS substation in order to avoid permanent restrictions, then a User with LCN only will essentially be getting transmission access without paying the associated cost reflective charge.

4.1.3.12 Based on this concern, the Working Group agreed that the charging definition for local works should be consistent with the CUSC definition. The Working Group noted that there were scenarios where this definition could lead to a permanent output restriction being placed on a generator and that this would be reflected in bids for short-term access being turned down, restricted sharing exchange rates and high overrun prices. The Working Group also noted that the proposals for node-to-node sharing arrangements would allow generators in this position to apply for node-to-node access rights to facilitate sharing with other generators.

4.1.3.13 One Working Group Consultation respondent expressed concern that the initial view was to define LCN as a finite right, stating that generally local assets should not be shareable with other generators and that finite right arrangements are only required to redistribute assets that are no longer required by a User but can be used by other generators. During the final Working Group 3 meeting, the majority of Working Group 3 agreed that an enduring right approach was appropriate for sole User assets. National Grid completed some further analysis of the existing system and concluded that, given the relatively shallow nature of local works as defined, there were very few instances in which an enduring LCN right could risk causing inefficient investment of delays to the entry of new power stations.

4.1.3.14 It was acknowledged that since it is a feasible circumstance that multiple Users may wish to share LCN and the associated local assets, arrangements would be required to facilitate this. Working Group 3 agreed that this could be dealt with by including access restrictions in the generators connection agreement. This is similar to the treatment currently used to deal with connection design variations. The Transmission Owner would build sufficient local assets to cope with the shared holding of LCN only.

Application processes

4.1.3.15 New **connections:** Existing applications for new generation connections are progressed in line with Section 2.13 of the CUSC: *New Connection Sites, based on the desired CEC and TEC of the applicant*. Following any implementation of one or more of the suite of CUSC Transmission Access Review Amendments (CAPs 161-166), it is foreseeable that a generator may wish to obtain only short-term access products following connection. Given that a generator's LCN will determine the level of obtainable short-term (and long-term) transmission access, and provide the basis upon which the TO decides on an economic level of transmission investment, the concept of LCN needs to be introduced into CUSC Exhibit B*: Connection Application*. A connection application will then be progressed under the same process as any other connection application.

4.1.3.16 Existing **connections wishing to increase LCN:** Section 6.30.2 of the CUSC: *Increase in Transmission Entry Capacity* defines the process by which generators can currently apply to increase their TEC. Any request from a User to increase its TEC for a connection site up to a maximum of its CEC is deemed to be a modification. This approach also appears appropriate for Users wishing to apply for an increase in LCN. In the event that multiple generators were sharing LCN, the application would have to be made on behalf of all of the generators involved.

4.1.3.17 Application **fees:** Given the proposed changes to the transmission access regime, it is considered appropriate that the current application fees included in the Statement of Use of System Charges, should be reviewed to differentiate between connection, local, and wider transmission system applications. Fixed and variable application fees will remain in operation. The Working Group noted in particular that generators wishing to increase LCN above their current TEC level during transition should not be exposed to the full Modification Application fee currently associated with changes in TEC.

4.1.3.18 **Pre-commissioning User commitment:** Working Group 3 identified that there are a number of potential options for arrangements to provide pre-commissioning User commitment:

- Cost-reflective final sums liabilities (possibly capped at the original offer);
- A liability based on the relevant Unit Cost Allowance (UCA); or
- A liability based on a multiple of the local generation TNUoS tariff.

4.1.3.19 Working Group 3 concluded that the requirement for pre-commissioning security associated with increases in LCN should be consistent with the arrangements proposed for wider long-term transmission access under CAP166.

4.1.3.20 The CAP166 original proposal for wider rights is a liability that ramps up over the 4 years prior to completion, to a total of 8 times the local generation TNUoS tariff. The 8 years is derived from analysis of TNUoS tariffs against wider UCAs, which shows that, on average, the UCAs are 15 times the TNUoS tariffs. The 15 is halved to reflect a 50/50 risk sharing between generators and consumers. Consistency would imply that the same multiplier could also be used for local connections.

4.1.3.21 However, there is an additional rationale for 8 years being an appropriate multiplier: If local TNUoS was exactly reflective of capital costs, then a capital payment of 8 x annuitised TNUoS would cover 50% of the capital costs. This is because the TNUoS methodology converts capital sums by assuming a 50 year asset life and a 6.25% rate of return. Annual sums can be converted into a capital sum by multiplying by:

$$(1-(1+0.0625)^{-50})/0.0625 = 15.22$$

4.1.3.22 If the 50% risk sharing, consistent with the CAP166 treatment for wider access is applied, the result is a multiplier of 8.

4.1.3.23 Local TNUoS would not recover all costs, due to Users paying for what they are using rather than what is installed. It therefore would seem appropriate that security is also provided on this basis, and that security should not be provided for TO investments made for wider system reasons.

4.1.3.24 The Working Group therefore concluded that pre-commissioning User commitment for local commitment should be based on a multiple of 8 years of local generation of TNUoS, profiled 25%/50%/75%/100% over the 4 years prior to completion.

4.1.3.25 Termination or reduction of the requested LCN would therefore result in the levying of a Local Capacity Reduction Charge, based on Local Cancellation Amounts. The Local Capacity Reduction Charge would be non-refundable.

4.1.3.26 The Local Cancellation Amount in each year would be a percentage of the Local Termination Amount, which is the higher of zero and eight times the relevant local generation TNUoS charge. The Local Capacity Reduction Charge would therefore be calculated as:

Local Capacity Reduction Charge = LCN_r x $LCAM_t$

Where:

- LCN_r is the reduction in Local Capacity Nomination in kW.
- $LCAM_t$ is the relevant Local Cancellation Amount which varies according to the number of full years from the Completion Date:
  - In the year prior to the Completion Date (i.e. t) *LCAM = LTA x 100%)*, where LTA is the Local Termination Amount;
  - Where t=-1, *LCAM = LTA x 75%*;
  - Where t=-2, *LCAM = LTA x 50%*; and
  - Where t=-3, *LCAM = LTA x 25%*.

Local Termination Amount = Max (0, ($LocGenTNUoS_n$ x X))

Where:

- $LocGenTNUoS_n$ is the relevant nodal Local Generation TNUoS tariff applicable to the generation project and published in the Statement of use of System Charges. If such a nodal tariff is not currently published, then the appropriate tariff will be calculated by National Grid as part of the application process, in accordance with the Charging Methodology.
- *X* is a multiplier, initially taking the value 8, although it may be appropriate that this be amended in subsequent price control periods.

4.1.3.27 Local Cancellation Amounts will be calculated using the prevailing local Generation TNUoS tariff at the time of Capacity Reduction. Capacity Reduction Charges would not apply to projects where there are no transmission asset works.

4.1.3.28 **Pre-commissioning security:** The introduction of generic Local Capacity Reduction Charges, defined in the CUSC to replace the existing final sums regime, defined in the bilateral Construction Agreements, will also require the introduction of provisions to define the level of financial security that should be held in relation to these potential liabilities.

4.1.3.29 It is therefore to add the applicable Local Cancellation Amount to each User's Security Requirement, as defined in paragraph 3.22 of the CUSC. To the extent that these amounts exceed the Allowed Credit extended to each User, Security Cover will need to be provided to National Grid, in any of the forms prescribed in the CUSC.

4.1.3.30 Working Group 3 noted that alternatives to the CAP165 original amendment proposal had also been developed by Working Group 2, including cost reflective final sums liabilities. The Working Group noted that should these CAP165 alternative amendments be approved, then they would also amend the pre-commissioning liabilities and security associated with LCN to be cost reflective final sums liabilities,

4.1.3.31 Existing **connections wishing to decrease LCN:** Section 6.30.1 of the CUSC: *Decrease in Transmission Entry Capacity* defines the process by which generators can currently reduce their TEC. Essentially, a User is entitled to decrease its TEC giving five business days notice in writing, prior to the 30 March in a financial year, with that notified decrease in TEC taking effect on 1 April of that same year. When discussing the possibility that LCN could be evergreen, the Working Group considered that this process could be applied to LCN. (The Working Group also noted the discrepancy between the late March deadline and National Grid's requirement for charge setting data to be provided no later than 23rd December in the previous (charging) year. The Working Group recommended an alignment of the notification timescales associated with TEC / LCN reduction with the TNUoS charge-setting process.

Transitional arrangements to LCN

4.1.3.32 Working Group 3 considered three options for transition from the current arrangements to those which require a Local Capacity Nomination.

- LCN based on a generator's CEC
  Given that CEC is not currently linked to transmission access allocation, this option seems the least appropriate.
- LCN based on a generator's TEC
  Given that the suite of CUSC Transmission Access Review Amendments (namely CAPs 161, 162, 163, 164, 165 and 166) are potentially introducing some fundamental changes to the way in which transmission access is allocated, existing TEC may not be considered appropriate for some generators.
- Generators would request its desired LCN in advance of a pre-defined date
  Working Group 3 concluded that this option appeared to be the most practical solution, although it was noted that the value notified will be limited to a generators CEC. In the event that a generator did not notify National Grid of its desired LCN, the use of TEC as a default value seemed appropriate. In the instance that multiple generators wish to share an LCN, a process for notification will be required. Timescales for a generator to notify National Grid of its desired LCN value will be very much dependent on the transmission access products implemented.

4.1.4 Local Works and their interaction with Wider Access Auctions

4.1.4.1 The Working Group discussed at length the issues surrounding the definitions of Local Capacity Nominations and their impact on the Auction process. Note that the Working Group did not discuss in depth the definition of LCN, or the assets that make up the LCN. The assumption was made that the LCN fundamentals developed by Working Group 3 would form the starting point for Working Group 2's discussions, albeit Working Group 3's conclusions were adapted to suit the auctions process. More complete details on the LCN definition and the changes made can be found in section 4.3 above.

4.1.4.2 The primary concern of the Working Group was that the proposed split of transmission assets to "local" and "wider" should be that the existing "queue" of Users awaiting wider transmission access rights should not be substituted by one of Users awaiting their local works to deliver an LCN value.

4.1.4.3 Though the two processes of allocation and indeed charging for the two categories of access rights are distinct there is a clear interaction between the two, especially given a key condition of the enduring auction regime is that a User may only bid in an auction for wider access rights providing it has an effective LCN for the period it is bidding for. The key question is whether to let the LCN allocation drive the wider auction result, or vice versa. Both approaches were discussed in both a transitional context and an enduring context.

Approach 1: Auction Result drives LCN Allocation - Transitional Context

4.1.4.4 The initial stage of the process is to withdraw all existing local and wider access rights from Users. Those withdrawn local rights are then substituted for a local right to procure wider access to a level up to their LCN. Each User's LCN MW level and effective date initially defaults to its pre-existing TEC MW level and TEC effective date[6]. Should the User be satisfied with this default allocation, it need do nothing and it will retain this default position as its firm LCN MW level and effective date.

4.1.4.5 Should a User wish to vary an aspect of this "default" LCN (either the MW level and/or the effective date) it will then need to notify National Grid of this intention – either through a Modification Application or through an as yet to be defined transitional process.

4.1.4.6 Once notified of the User's aspirations to vary its LCN from the default position, National Grid will determine any works required to accommodate these, and in doing so calculate two possible dates by which these works can be completed. The first such date is the "earliest LCN date" – this is the soonest date by which the works can be completed assuming that this project's works are considered in isolation to any other works – i.e. there is no constraint on construction resource.

4.1.4.7 The second date calculated is the "back-stop LCN date". This date is the soonest date by which the works can be completed, but in this case that this project's works are considered alongside any other works to deliver other projects earlier LCNs (these other projects may be grouped on a national basis or perhaps on a narrower regional basis). The back-stop LCN date is then selected as the soonest that the entire group of project's works to deliver LCN can be completed. It will be identical for all projects in the group.

4.1.4.8 Both the "earliest LCN date" and the "backstop LCN date" are conditional dates based upon the results of the next auction for wider access rights.

4.1.4.9 Each User will then be permitted to bid in the wider access auction for any years that it chooses to, provided that the years it is bidding for are not sooner than its "earliest LCN date". It is then assumed that those projects may procure wider access over varying timescales, some being successful in advance of their "back-stop LCN date", some perhaps as early as their "earliest LCN date", some may be unsuccessful or may choose not to participate and rely on short-term products (including over-run) to secure wider access.

[6] For existing generators the "pre-existing TEC effective date" will be the "Go-Live date" for any auctions process, for pre-commissioning generators this will be the Completion Date in its Construction Agreement

4.1.4.10 Those Users that are successful in the wider access auction will then have their LCN effective date advanced within their Bilateral Agreement to align with the first year in which that User has secured a non-zero volume of wider access capacity. The Working Group noted the concern that Users may bid for very small capacities for a single year in order to obtain an advancement in their LCN date. The LCN date will also at this stage become firm. Those that are not successful / do not participate in the wider auction will retain their back-stop LCN date as their firm LCN date.

4.1.4.11 Some Working Group members suggested a potential enhancement to Approach 1 the aim of which would be to further optimise User's LCN effective dates. The scenario was discussed where the above process described in paragraphs 4.4.4 – 4.4.10 had been completed but that there still scope to further optimise the LCN effective dates of Users who had been allocated their "back-stop LCN date". This some Working Group members felt may be possible if sufficiently few parties behind a local works resourcing constraint had been successful / taken part in the auction for wider transmission access. Thus there was still the capability to bring forward some of these User's works to facilitate an earlier LCN effective date.

4.1.4.12 The Working Group discussed the means by which such a further level of LCN optimisation might occur and two approaches were put forward:

- The first is to use the final results of the auction model and from it interpret which of the unsuccessful bidders would have been next in line to be allocated wider transmission access. Once these Bidders had been identified they could have their LCN works brought forward in their auction ranking order until such time as any remaining local resource allocation was exhausted. However some members of the Working Group felt that using the auction model in this way was not suitable given that it is set up purely to allocate wider transmission access.

- An alternative method also discussed by the Working Group was to further bring forward LCN effective dates on a first-come first served basis (based on Application Date).

Approach 1: Auction Result drives LCN Allocation - Enduring Context

4.1.4.13 In the enduring context it might be anticipated that the volume of new projects applying for connection in a given year would not lead to their being a "queue" for local access. In such cases it is more likely that the "earliest LCN date" equals the "back-stop LCN date" and is in line with the applicant's anticipated project timescales. This would then mean that the requirement to reallocate LCN dates following the wider access auction would not arise.

4.1.4.14 However should there be the resource constraint for works to permit the earliest allocation of LCN due to a number of projects applying to connect in the same year then a similar process to that for the transitional period as described above could be extended to the enduring regime.

Approach 2 – LCN Allocation drives Auction Result – Transitional & Enduring Context

4.1.4.15 Again in this approach all Users have their existing local and wider access rights withdrawn and the local rights are reallocated through their LCN. The LCN is again defaulted to the User's pre-existing TEC MW level and its TEC effective date.

4.1.4.16 Again should Users wish to amend this LCN beyond the default level (either in terms of its MW level or its commencement date) and this requires works to be carried out, once National Grid has assessed the magnitude of these works it will offer a User a "LCN commencement date".

4.1.4.17 The "LCN commencement date" will be calculated such that each project requesting an acceleration of its LCN date will be brought forward as far as construction resources will allow. In the event that two or more projects are subject to a resourcing constraint for their LCN works such that one or more, but not all of the projects could have their works completed by a certain date but the remaining projects would follow at a later date, then all of the projects would be given the same, **later** date as their LCN commencement date". These LCNs would at this stage become firm.

4.1.4.18 The auction is then run to permit those Users to procure wider access with the proviso that Users are only able to bid for wider access rights from their "LCN commencement date". For the avoidance of doubt, no further optimisation of the LCN commencement date is performed following the results of the wider auction.

4.1.4.19 Note that this model would work unchanged for either the transitional case or the enduring process.

LCN Allocation - Conclusions

4.1.4.20 The Working Group's believed the two approaches outlined above had the following advantages and disadvantages of the two approaches.

Approach 1 – Advantages /Disadvantages

4.1.4.21 ADVANTAGE – WIDER AUCTION NOT INFLUENCED BY LOCAL QUEUE: As noted above a key objective was that a wider access queue is not replaced by a local access queue. Given the feedback loop between wider and local access rights enshrined within Approach 1 there are fewer constraints resulting from local access issues feeding into the wider access regime.

4.1.4.22 ADVANTAGE – EFFICIENT ALLOCATION OF LOCAL RIGHTS: The feedback loop between the wider access auction and the allocation of local rights does mean that if a project is able to progress it own construction works more quickly than another project and is able to procure wider access to reflect this, then it will not be frustrated by having to wait for local access.

4.1.4.23 DISADVANTAGE – COMPLEXITY: Another consideration to be made with approach 1 is that if wider access is not constrained but local access is then there might be the scenario where all of the projects with clustered future LCN might be successful at procuring wider access at their "earliest LCN Date". However the LCN works to deliver this level of wider access are not physically deliverable. It would be anticipated that in these cases the auction model would be developed such that it accounted for LCN constraints as part of its allocation of wider access. For instance not allowing more than a pre-defined MW volume or number of new connections to be accepted in any one period. This would however add further complexity to the auction model.

4.1.4.24 DISADVANTAGE: IMPACT UPON SHORT TERM TRADED OR SHARED PRODUCTS: The key defect of the above approaches is that they disadvantage categories of User whose access procurement strategy is predominantly in the shorter term traded or shared access products. This is an inevitable consequence of the requirement to prioritise resources to deliver local connections. It is clear that an unambiguous signal is needed to allow National Grid to determine which projects should be progressed in preference to others. The only signal available is that which emerges from the wider access auctions and so those that choose not to actively participate in these auctions will have less priority under this model than those that do participate in the wider access auctions.

Approach 2 – Advantages /Disadvantages

4.1.4.25 ADVANTAGE – LESS COMPLEX: As approach 2 already resolves local access issues prior to the auction then there is no need to resolve these as part of the auction model.

4.1.4.26 ADVANTAGE – IMPACT UPON SHORT TERM TRADED ACCESS PRODUCTS: Approach 2 by allocating local access without accounting for a signal from the wider access auctions does not differentiate between those projects that are seeking wider access in the long-term or the short-term markets.

4.1.4.27 DISADVANTAGE – LOCAL QUEUE FORMED: Approach 2 would mean that the existing wider access queue would be replaced with an albeit smaller, but still significant local queue.

4.1.4.28 DISADVANTAGE – SUB-OPTIMAL ALLOCATION OF LOCAL ACCESS: Given the significant numbers of projects currently in the access queue who it would appear would wish to accelerate their local connection dates in any new regime that allowed them to the allocation of these rights in an optimal manner is crucial. Given the large numbers of post-2016 offers that exist it may be difficult to allocate each of these with a “LCN commencement date” that isn’t interactive with other projects. As this “LCN commencement date” is by definition the latest that all grouped projects can be accommodated, it is somewhat inevitable that some projects that could have been locally connected earlier (if approach 1 were adopted) in fact are connected much later under approach 2.

LCN Allocation Method - Conclusions

4.1.4.29 The Working Group undertook further discussions following the close of the Working Group Consultation and concluded that an approach based upon Approach 1 would be appropriate to take forward subject to the following enhancements.

4.1.4.30 The high level process would commence with an allocation of local access rights to existing Users[7]. The level of local access rights granted to a User would be denoted by its Local Capacity Nomination (LCN); the LCN would form the upper limit on the combined wider capacity a User may procure through any auction or short-term access products (including overrun). An LCN would consist of a MW level and a date from which that MW level is applicable. Staged projects might see a ramp up of LCN as the project is progressively completed.

4.1.4.31 The default LCN value granted to an existing User would be the TEC level granted in its Bilateral Agreement. For those projects yet to commission / energise the effective date will by default commence at the same time the TEC value was due to come into effect (as specified in the BCA) and will carry the same MW level as the existing TEC value.

4.1.4.32 Once the stages above have been completed for existing Users then so the enduring process will come into effect for any existing Users that wish to explore a change in their local access rights. Each User that wishes to change the timing or level (MW) of their LCN from its default TEC value will signal this intent to National Grid (this may be through a Modification Application or some other transitional process to be defined). Similarly the following process will be followed by any new Users applying to connect a Power Station to the GB Transmission System.

4.1.4.33 National Grid will for each connection application (or transitional) request calculate two dates the “earliest LCN date” and the “backstop LCN date”. The “earliest LCN date” is the earliest date by which works to deliver the desired LCN capacity could be completed (assuming they were commenced from the beginning of the next financial year and if that project was considered in isolation). The “back-stop LCN date” is calculated using a similar process but considers the earliest date by which all projects that wish to advance their LCN can have the works delivered to do so. It is clear that in all cases the “earliest LCN date” <= “back-stop LCN date”.

4.1.4.34 Any projects that wish to increase their LCN MW level will also have an assessment of whether there are any additional local works necessary to accommodate this and if so this may impact upon one or both of the offered “earliest LCN date” and “back-stop LCN date”. Both the notified (offered) “earliest LCN date” and “back-stop LCN date” will be conditional in two areas:

- The results of the next wider access auction; and,
- Applications from other Users (“subsequent User(s)”) to connect in the same locality as the “first User” which are received after the “first User” has received its offer and which are signed by the “subsequent User(s)” before the cut-off date for the next wider access auction.

4.1.4.35 Regarding the conditionality with the results of the wider access auction, a User will only have its final LCN Effective Date firmed up once it is known whether it has secured wider access in that auction. Those Users that are successful in the wider access auction will then receive a firm LCN effective date that aligns with their booked wider access rights. Those parties that fail to secure wider access rights in the auction will then be offered their “back-stop LCN date” as their firm LCN Effective date.

[7] The Term “existing Users” denotes any User that has a signed Bilateral Connection Agreement or Bilateral Embedded Generation Agreement by a certain “transition date”

4.1.4.36 The conditionality in advance of the auction would work along the following lines. The first User to apply to connect in a locality may receive an "Earliest LCN Date" and a "Back-Stop LCN Date" that are the same and equal to the date to facilitate only that User's Power Station. Then a second User applies to connect in the same locality. The second set of local works to facilitate the LCN is more complex than the first Users so the second User is offered an "Earliest LCN Date" equivalent to that offered to the first User, but its Back-Stop LCN Date is further into the future reflecting the more complex works to connect two Power Stations in the same locality. The first User must then also have its Back-Stop LCN date amended to be consistent with the first User.

4.1.4.37 In the above example the capacity constraints to deliver the local works for the two Power Stations will be reflected in the incremental capacity supply curves that feed into the auction process. This will ensure that only one of the two generators in the locality (in the above example) will be able to procure wider auction access in timescales consistent with their Earliest LCN Date. The other will then only be able to procure access consistently with the Back-Stop LCN Date.

4.1.4.38 It should be noted that in situations in which the provision of local capacity is constrained, these arrangements prioritise the provision of local capacity based on the outcome of the auction for wider long-term transmission access rights. By the end of the above process the "queue" for local works would have effectively been optimised based upon the desire of the User to commit to wider long-term transmission access.

4.1.4.39 In circumstances in which local capacity is constrained and priority is given to those Users that are successful in the auction, but some local capacity remains available, this would be allocated on a first-come-first-served approach (similar to that currently adopted for interactive offers).

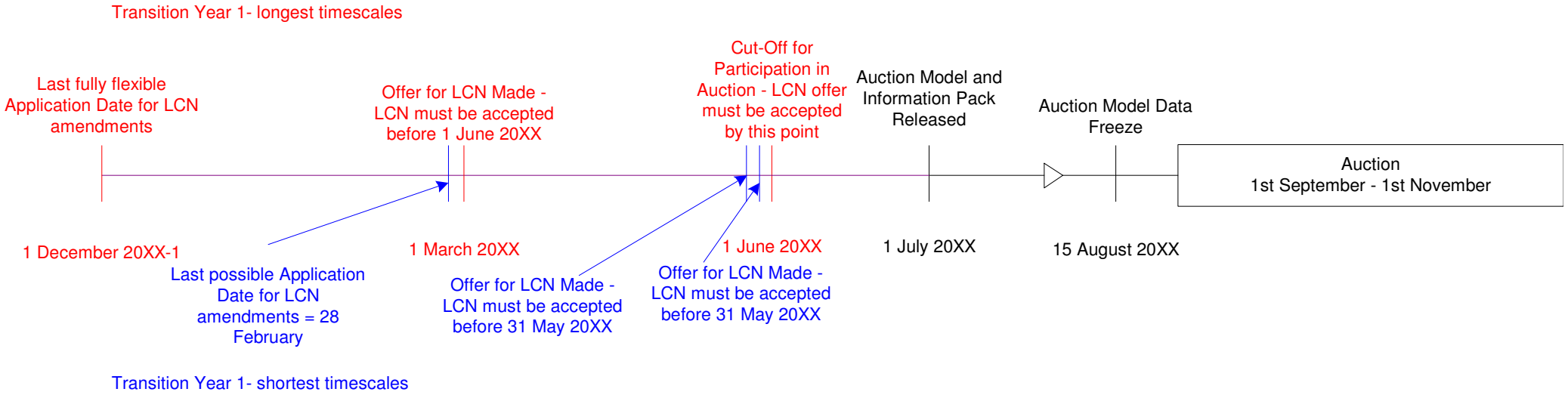
Mechanism to trigger LCN re-allocation

4.1.4.40 Another area of discussion undertaken by the Working Group was the mechanism by which this reallocation process could be instigated. Some members of the Working Group suggested that a Modification Application could be used as for an advancement of or increase in the value of LCN would require National Grid to undertake system studies before making an offer to the User in a similar manner to that undertaken when considering a Mod App. Other members of the Working Group were concerned that a formal Mod App may result in the eventual LCN offer being conditional on other issues that have a scope much wider than a strict local assessment of LCN, and thus a Mod App was not necessarily the most appropriate way forward. As such a separate transitional process more narrowly defined than a Mod App should be developed as part of these proposals.

Timescales for the Application of LCN

4.1.4.41 The Working Group also considered the timescales around which Users would need to apply for a new connection or notify National Grid of their wish to amend their LCN such that they would be in a position to accept an offer with the appropriate LCN in it in time to participate in the next annual auction for wider access. These timescales are shown in the diagram below:

Timeline showing local connection offer and wider auction processes



4.1.5 Auction Objectives

4.1.5.1 National Grid proposed a number of high-level objectives of an auction for long-term transmission access, which included:

- Implementation of a mechanism to allow parties to signal both the volume of access rights they require and the price they are prepared to pay;
  This means that existing (baseline) capacity can be allocated to those parties that value it most, and that greater flexibility can be given in the provision of an economic justification for the release of new (incremental) capacity.
- Implementation of a process that allows baseline and incremental capacity to be allocated in a consistent way;
- A requirement for parties booking long-term transmission access rights to pay at least the associated cost-reflective charge (i.e. there should be a reserve price). If parties are not willing to pay such a charge, transmission access rights should be held back and released in the short-term.

4.1.5.2 The Working Group discussed these objectives and how they could be achieved. Given the importance of the allocation of baseline transmission access (MW) capacity, particularly given its current scarcity in many areas of the transmission network, the Working Group discussed how baseline and incremental capacity would be defined. This definition would need to take account of the current capability of the transmission system which is quantified by performing network analysis against the requirements of the Security and Quality of Supply Standard. The Working Group agreed that the means by which this network analysis is incorporated into the auction design would be critical.

4.1.5.3 The Working Group also discussed the importance of the economic justification for the release of incremental capacity and a consistent treatment between baseline and incremental capacity. The Working Group noted that an economic justification for transmission assets is achieved by looking across multiple years and agreed that the ability to do this would also be critical to the auction design.

4.1.6 Auction Design

4.1.6.1 The following section summarises the Working Group discussions on value-based long-term transmission entry capacity auction design.

Design considerations

4.1.6.2 In developing an auction design for long-term entry capacity, the Working Group discussed the treatment of the following key issues:

(d) Network analysis
  - Zonal model;
  - Nodal load flow model;
  - Boundary constraint model.

(e) Baseline and incremental capacity
(f) Definition of baseline capacity
(g) Incremental capacity
(h) Pricing
(i) Reserve price
(j) Static/dynamic

Network analysis

4.1.6.3 One of the features of transmission networks is the interaction between connected Users. In the case of the interaction between different generators in the long-term, this is currently handled with ex ante network analysis against the requirements of the (GB) Security and Quality of Supply Standard (SQSS). This analysis is primarily based on avoiding unacceptable conditions during any two concurrent transmission circuit outages at peak winter (average cold spell) demand.

4.1.6.4 In the case of a generator applying for a new connection, this analysis is performed in order to determine whether reinforcements to the transmission system are required to accommodate the new generator in addition to existing contracted generation. It is worth noting that the existing contracted generation in this context is assumed to be relatively static. Where a requirement for transmission reinforcements is identified, these reinforcements are listed in a Construction Agreement and the new generator has to wait until these reinforcements are complete prior to connection.

4.1.6.5 For an auction solution, the existing contracted generation cannot be assumed to be static because all pre and post commissioning generation is competing for scarce access rights. .

Potential network analysis approaches for the auction

4.1.6.6 An auction design must include some form of network model to ensure that any rights allocated can be delivered by the network. Three network models have been considered by the group. These are

- Zonal model
- Nodal load flow model
- Boundary constraint model

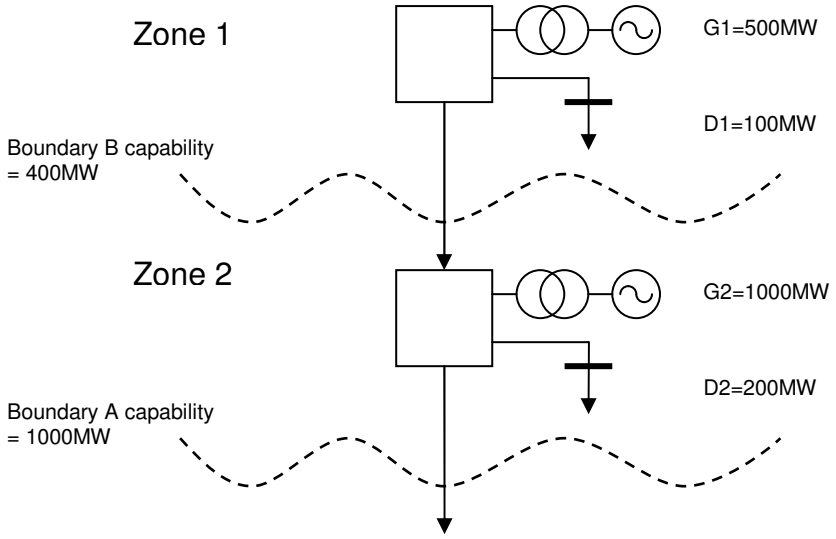
4.1.6.7 These models differ from each other in their balance between the accuracy with which the system is modelled and the transparency of the results to the auction participants. Each of these models will be discussed in turn

Zonal Modal

4.1.6.8 The original modification proposes a zonal auction. Under this approach, National Grid (as GBSO) performs network analysis ex ante to establish baseline capacities that are available in each zone. Transmission access rights are then allocated in a set of separate capacity auctions for each zone. This approach has the benefit that it is relatively straightforward for participants to understand due to the fact that the auction in each zone is independent from other zones. However, it may not result in an optimal allocation of capacity between zones.

4.1.6.9 For example in Figure 1, there are two transmission boundary constraints, A and B. If we consider boundary A, the total generation bidding for access behind this boundary (G1+G2) is 1500MW. If we subtract the total demand behind this boundary (D1+D2) of 300MW, this leaves a total export requirement of 1200MW to accommodate all generation (G1+G2) against a boundary capability limit (at boundary A) of only 1000MW. The issue is how this 1000MW of boundary capability should be allocated between zones 1 and 2.

Figure 1: Interactive zones example



4.1.6.10 If, for example, 400MW is allocated to zone 1, since this is what can be accommodated across boundary B, and the balance of 600MW to zone 2, this would only give an efficient outcome if the generation in zone 1 is willing to bid at least as much as the generation in zone 2. If the generation in zone 2 is actually prepared to bid higher than the generation in zone 1 then the more efficient answer is to allocate a greater share of the boundary A capacity in zone 2. The issue with this approach is that the GBSO would need to make assumptions about the capacity available in each zone, and these assumptions would determine the overall efficiency of the auction. Arguably, the most appropriate starting point is to allocate transmission capacity to zones in accordance with the transmission access rights that are allocated today.

4.1.6.11 The zonal approach is weighted towards transparency for the User at the expense of accuracy of modelling the system. However, if the expectation is that the auction will not lead to significant changes to the transmission access right holders, then the inaccuracies associated with this approach may be deemed to be acceptable. The majority of the Working Group felt that the outcome of the auction result would be driven as much by the allocation of capacity between zones prior to the auction as by the bids of participants. It was therefore felt that a more sophisticated network model was required.

Nodal load flow model

4.1.6.12 An alternative to the zonal model approach is to have a nodal load flow model underpinning the auction. A transmission network model is established which contains peak demand, circuit capabilities and all credible contingencies which are modelled in sufficient detail to cover interactions between the maximum circuit flows and generation connections. Users can bid for capacity, with an optimisation being performed to maximise bid revenue whilst honouring the system constraints from the network model. The entry capacity will be allocated to the highest bidders up to the transmission circuit capabilities.

4.1.6.13 The advantage of this option over the alternatives is the increased accuracy due to the presence of a nodal load flow model which is run during the allocation process as Users at different locations signal their requirements and the associated value they place on them. However, a full load flow solution is complex and therefore would be expensive and involve a significant lead time.

4.1.6.14 It should be noted that the nodal load flow model would only accurately model thermal capability restrictions, and not restrictions due to the need to avoid unacceptable voltage conditions or system instability. These issues could be handled either by completing ex ante voltage and stability analysis and representing the calculated limits as thermal constraints, or with a more complex model which considers thermal, voltage and stability issues together.

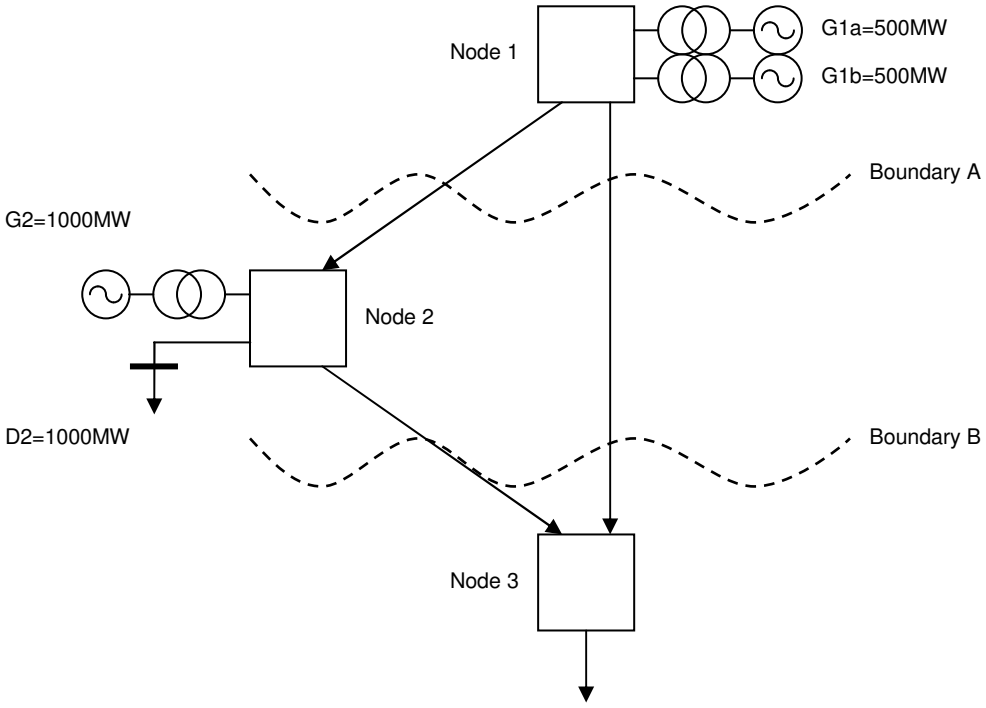
4.1.6.15 With the load-flow approach, it is essential that whilst transmission capacity in exporting parts of the network is limited to the circuit capabilities (plus the winter peak demand in that part of the network), capacity in importing parts of the network should not be constrained. In order to ensure this is the case, a 'slack' node which handles the difference between generation and demand such that the load flow model is soluble, would be required in an importing area of the transmission network. In order to avoid the location of the slack node influencing the outcome of the auction, it may be necessary to optimise across several loadflow models with the 'slack' node in different positions. This solution would be more accurate in circumstances in which the demands for access rights in the auction are dramatically different from those anticipated. This multiple loadflow approach would further complicate this approach.

4.1.6.16 The main disadvantage of the load-flow approach, even without voltage and stability restrictions being modelled, is the lack of transparency for Users which may adversely impact on price discovery. This approach essentially auctions capacity at all the nodes in parallel, taking into account all the complicated interactions between nodes simultaneously. Given the number of nodes on the system, understanding these interactions will be complex for Users.

4.1.6.17 The complexity is better illustrated in Figure 2, below. In this example, the two generators connected at node 1 (G1a and G1b) are competing for transmission capacity between nodes 1 and 3 with an expectation that the transmission access rights will go to the highest bidder. However, if we assume that the transmission circuit between nodes 1 and 3 has a much higher capability than that between nodes 1 and 2, then the capability between nodes 1 and 3 is dependent on the success in the auction of the generator connected at node 2 (G2). If this generator is successful, then it will balance the demand connected at node 2 (D2) such that the majority of the export from node 1 utilises the high capability line between nodes 1 and 3 giving a high transfer capability. If this generator is unsuccessful, there is no generation to balance the demand at node 2 and the majority of the export from node 1 utilises the lower capability line between nodes 1 and 2 giving a lower transfer capability. G1a and G1b think they are competing for a certain transfer capability only to find that this is no longer the case due to the success (or otherwise) of G2.

4.1.6.18 The load-flow approach is weighted towards accuracy of modelling the system at the expense of transparency for the User. There will be many interactions between nodes on the system and so it will be difficult for participants to interpret the price signals provided to them by the auctions. It was not clear to the majority of the group that this model would result in an efficient allocation of access rights due to the complexity of the approach.

Figure 2: Interaction between transfer capability and connected generation example



Boundary Constraint Model

4.1.6.19 The boundary constraint model was developed by the Working Group to provide a compromise between the zonal model with its simplicity but inaccuracies and the full nodal load-flow model which is more accurate but is complex for Users to understand. In the boundary constraint model, an ex ante load-flow analysis is performed to determine prevailing system power flows and boundary capabilities.

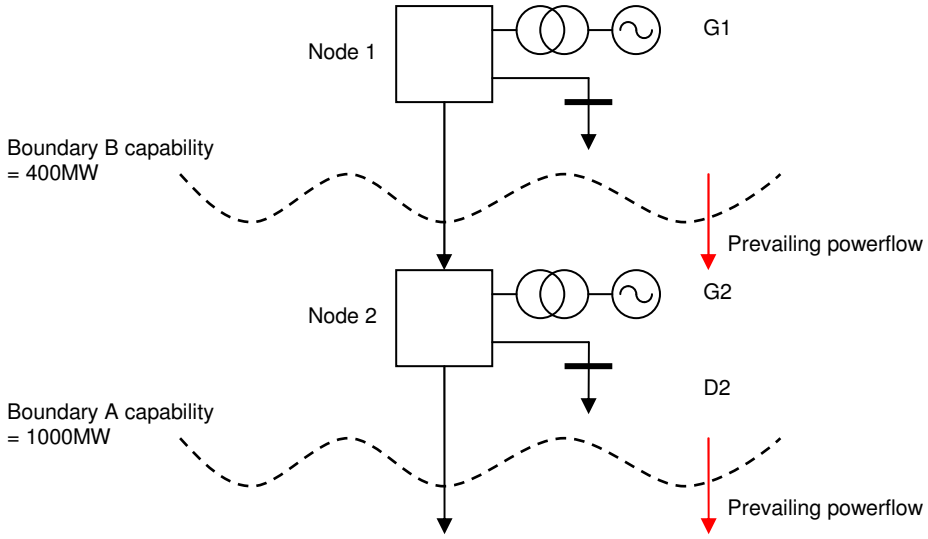
4.1.6.20 This ex ante analysis will involve scaling existing generation on the exporting side of system boundaries upwards until boundary constraints are revealed.

4.1.6.21 The prevailing power flows are used to link the access rights allocated in particular areas and the associated boundary flows. Using this approach, a set of more straightforward constraint conditions can be derived and these can then be used in an optimisation which seeks to maximise bid revenue.

4.1.6.22 It is worth noting that this approach also avoids the issues associated with a slack node described above.

4.1.6.23 This approach deals naturally with the problem of nested boundaries as illustrated in Figure 3 below.

Figure 3: Simple optimisation constraints



4.1.6.24 The optimisation constraints for the section of network above are:

$$(G1 - D1) \leq Boundary\ B\ capability$$

$$([G1 + G2] - [D1 + D2]) \leq Boundary\ A\ capability$$

4.1.6.25 With this approach the long-term transmission entry capacity will be allocated to the highest bidders up to the transmission boundary capabilities by discovering the value that all Users behind particular boundary constraints place on transmission access.

4.1.6.26 The simple example in figure 3 above assumes that each generator has an equal impact on the boundary. The appropriateness of this assumption will depend to a degree on the number of boundaries used in the model. A simple model of the boundary constraint auction approach has been developed using the SYS zones which has 17 boundaries. This will result in some approximations and further work is being carried out to identify a suitable number of boundaries. The initial result of this analysis of boundaries is included in Annex 3 to this document however. It should be noted that if the number of boundary constraints is too large, then the problems of complexity for Users identified in the load-flow model will also apply in this model. The key to this model is therefore in finding a suitable compromise between transparency for Users and accuracy of modelling.

4.1.6.27 The simple example above assumes that the boundary capacity is not impacted by the pattern of generation accepted in the auction. However, the example of Figure 2 above demonstrated that there are situations in which the generation impacts on the boundary capacity. The simplest approach to this issue is for the GBSO to perform analysis ex ante to establish reasonable boundary capabilities. The accuracy of this approach would ultimately depend upon the number of boundaries that are used (i.e. the more boundaries, the more accurate).

4.1.6.28 In order to achieve this, assumptions would have to be made about the potential success in the auction of generators that interact with boundary capabilities (G2 in the figure 2 example above). The issue with this approach is the importance of these assumptions. If they are wrong then the auction will either under-allocate transmission access rights, meaning that generation that could be accommodated would not be successful, or over-allocate transmission access rights, meaning that constraint costs will be higher than they would otherwise have been.

4.1.6.29 It should be noted that to some extent this problem exists today, although this is due to the closure uncertainty associated with a rolling transmission access right rather than the access allocation process. All Users are included in the contracted background which is used as the basis of the transmission network analysis performed when assessing the reinforcement works required to accommodate new generation connections. If some of these generators, the presence of which were effectively providing additional transmission capacity, were to leave the transmission system, with as little as five days notice, capacity would have been over-allocated and additional constraint costs would be incurred.

4.1.6.30 In addition, the value that generation in certain locations on the transmission system brings, in terms of allowing other generation to connect, would not be reflected. This is likely to mean that this generation is less likely to be successful in the auction, contributing to the risk of over-allocation described above.

4.1.6.31 The further approach discussed for the issue of interaction between generation and boundary capability is to perform analysis ex ante to establish boundary capabilities and participation factors to reflect the impact that connected generators have on the boundary capability. For the figure 2 example above, generators G1a and G1b would be given participation factors of 100% for boundary A (i.e. each MW accepted at G1a or G1b requires a MW of capability on boundary A) whereas generator G2 could be given a negative participation factor for boundary A (i.e. a participation factor of -10% would mean that each MW accepted at G2 would increase the capability of boundary A by 0.1MW). The advantage of this approach is the increased accuracy achieved by reflecting the impact that generators at different locations have on system boundary capabilities. It should be noted that the accuracy of this approach depends on how sensitive the participation factors are to the location of generation. Assumptions will need to be made about the location of generation in the ex ante loadflow analysis. If the auction results in generation in very different locations being awarded capacity, then the participation factors may no longer be valid. It is therefore important that sufficient sensitivity analysis is performed ex ante to avoid this issue. In terms of transparency, different participation factors for different generators are likely to make it more difficult for bidders to understand the competition for boundary capability.

Discussion of Appropriate Network Model

4.1.6.32 The Working Group discussed the relative merits of each of the network models in terms of accuracy and simplicity.

4.1.6.33 The zonal model was recognised as most transparent of the auction models. However it ignores the complex interactions between nodes once the volume in each zone has been set. The results were therefore deemed to rely too heavily on the initial assumptions made by the GBSO when allocating the initial capacity between zones.

4.1.6.34 It was recognised that the load-flow approach provided more accuracy as all calculations are carried out during allocation. However, there were concerns among the group that it would be extremely complex for generators to participate in the auction; any benefit due to increased accuracy of modelling is likely to be reduced due to the inability of participants to interpret the pricing signals from the model.

4.1.6.35 The view of the Working Group was that the boundary constraint approach provided the best compromise between accuracy of modelling and transparency for Users. However, it should be noted that there has only been limited testing of a simplified model with SYS 17 boundaries. The testing to date has demonstrated that the simplified model generally works as expected. However, the issue of nested boundaries means that it can be difficult for participants to understand what is limiting their ability to obtain capacity and therefore how much they need to bid. This will be complicated further as the number of constraint boundaries increases. At this stage there is not yet a firm view on the number of boundaries that will be required in the model although Annex 3 contains details of initial boundary analysis for all regions of Great Britain with the exception of the London area. It is only with testing of the full model that an assessment of the transparency of the auction for participants can be assessed.

Baseline and Incremental capacity

4.1.6.36 The auction will need to allocate baseline (existing) transmission capacity (MW) and incremental (new) transmission capacity (MW). The Working Group considered the following options for dealing with baseline and incremental capacity:

- Treat baseline and incremental capacity in separate auctions
  Separate auctions for baseline and incremental capacity may simplify the auction process and make it more transparent for Users. In particular, this would mean that any test that would need to be met for the release of incremental capacity could apply to the incremental capacity auction only. The main problems with this treatment are:
  - The interaction between baseline and incremental capacity
    In order to ensure that the separate baseline and incremental capacity auctions give an efficient solution, spare capacity from the baseline capacity auction would need to be reflected in the incremental capacity auction. This additional complexity may mean that the transparency and simplicity benefits of separate auctions for baseline and incremental capacity are lost.
  - Uncertainty for Users
    Separate treatment would mean that Users may need to book capacity in both auctions. This introduces additional uncertainty for Users that may only want the capacity that is allocated to them in the baseline capacity auction if they are also successful in the incremental capacity auction.
- Treat baseline and incremental capacity in the same auction
  A single auction for baseline and incremental capacity would address the interaction and uncertainty issues described above for separate auctions, but would be more complex and therefore less transparent.

4.1.6.37 Given the advantages and disadvantages described above, the Working Group concluded that baseline and incremental capacity would need to be treated together in the same auction.

Definition of Baseline Capacity

4.1.6.38 The Working Group agreed that quantity of baseline long-term access rights that are released by the auction will have a fundamental effect on the way that the transmission system is operated for many years to come.

4.1.6.39 In order to understand the options available for the definition of the baseline capacity on the transmission system and the associated consequences, an understanding of the planning criteria contained in the SQSS (http://www.nationalgrid.com/uk/Electricity/Codes/gbsqsscode/DocLibrary/) is required.

4.1.6.40 The current SQSS contains both generation connection and main interconnected transmission system planning criteria. The generation connection planning criteria contain limits to loss of power infeed and also consider a generator at 100% of its output and ensure that there are no unacceptable conditions for the loss of any two transmission circuits, so-called "n-2" criteria.

4.1.6.41 The main interconnected transmission system criteria apply to wider transmission system boundaries, where wider transmission boundaries are defined as those which split the transmission system into two zones, the smaller of which contains a demand of 1500MW or more. A planned transfer condition is established using one of the following techniques:

- Straight scaling technique – All generators on the system at the time of average cold spell ("acs") peak demand are considered contributory and their output is calculated by scaling such that the aggregate level of generation is equal to acs peak demand;
- Ranking order technique – In circumstances in which the plant margin exceeds 20%, the ranking order technique will be applied in addition to the straight scaling technique. This maintains the output of generators that are considered more likely to operate at times of acs peak demand at more realistic levels and treats those less likely to operate as non-contributory (e.g. Open Cycle Gas Turbines).

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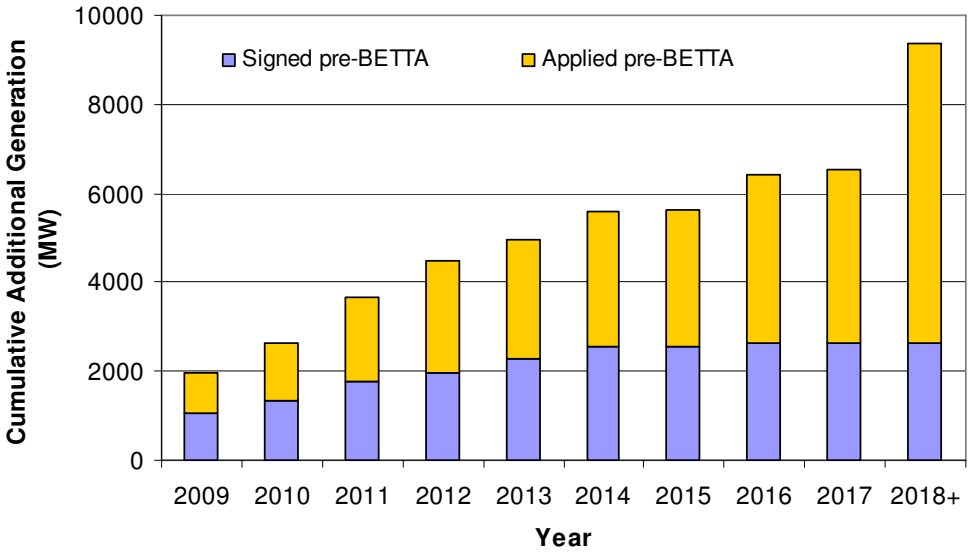
4.1.6.42 A safety margin (or Interconnection Allowance) is added to the power flows of the planned transfer condition to take account of non-average conditions (e.g. power station availability, weather and demand) and again analysis is performed to ensure that there are no unacceptable conditions for the loss of any two transmission circuits.

4.1.6.43 This essentially means that capacity on wider transmission system boundaries is over-allocated due to an implicit assumption that access rights will be shared.

4.1.6.44 The Working Group tested an illustrative boundary constraint auction and found that the generation connection criteria and main interconnected transmission system criteria could be modelled.

4.1.6.45 The Working Group noted that at BETTA, the decision was taken to treat connection applications received from Users in Scotland prior to a deadline such that their connections were not contingent on transmission reinforcements on the circuits between Scotland and England or on any other transmission reinforcements in England and Wales. This led to a further over-allocation of long-term transmission access rights in Scotland. This is currently handled with a derogation against the requirements of the SQSS for the boundary between Scotland and England. The Working Group agreed that, if necessary, this could be reflected by artificially increasing the capability of derogated transmission system boundaries in a boundary constraint auction.

4.1.6.46 The Working Group discussed the treatment of the boundary between Scotland and England in further detail. Analysis showing the amount of generation which had signed connection agreements or applied for connection before BETTA was considered. The expected build up of this additional generation is shown in the following chart.

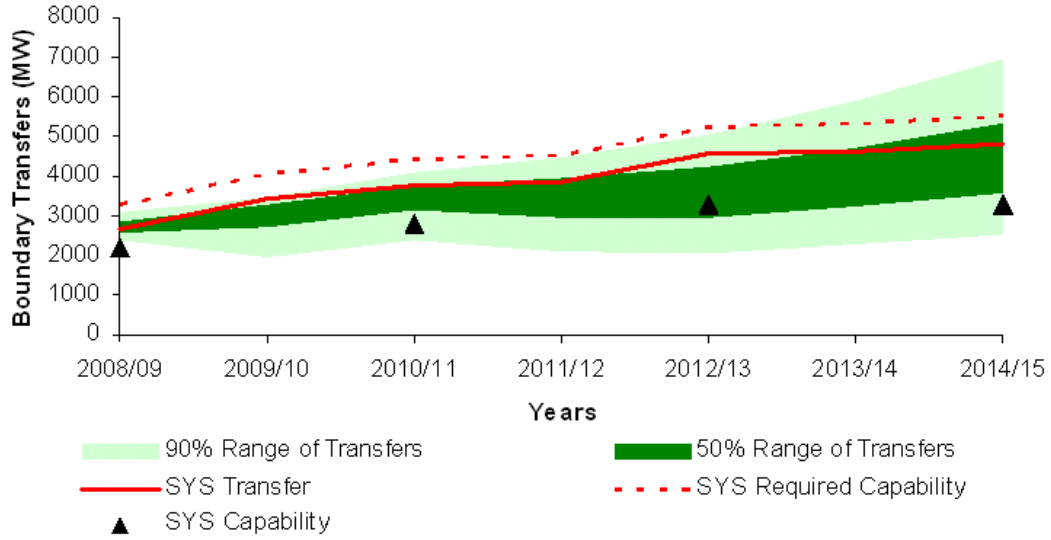


4.1.6.47 This analysis shows that nearly 10GW of projects over and above a 2008 capacity baseline which signed or applied for connection before BETTA could connect in Scotland after 2008. Since this generation applied before BETTA, under the current arrangements it can be connected without taking into account works which may be required on the boundary between England and Scotland or any other works in England and Wales. The Working Group agreed that the over-allocation of long-term access rights to this extent would be unworkable, and that alternatives would need to be considered.

4.1.6.48 The Working Group also noted that although the Cheviot boundary is currently over-allocated the growth in generation in Scotland may ultimately result in there being a requirement to over-allocate boundaries in England and Wales as the additional flows from generation in Scotland and newly connecting generation in England and Wales that is subject to similar BETTA planning background as the plant in Scotland connects.

4.1.6.49 The Working Group requested further detail on the extent of the over-allocation across the Cheviot boundary, both now and into the future. Complete details for the Cheviot boundary together with the other SYS planning boundaries may be found in the Seven Year Statement – Chapter 8. The SYS data for the Cheviot (SYS Boundary B6) is shown below:

Figure 8.B6 Boundary Transfers and Capability
Boundary 6: SPT to NGET



B6	SPT - NGET (EXPORT)	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
	SYS Transfer	2643	3413	3759	3862	4556	4616	4813
	SYS Capability	2200	2200	2800	3300	3300	3300	3300

4.1.6.50 As can be seen in the above SYS data the SYS Transfer (solid red line) across the B6 boundary is expected to grow to reach 3862MW in 2011/12 (the year upon which the first year and subsequent auction "over-allocated" baseline would be fixed). This would represent an "over-allocation" of ~500MW based upon the expected physical boundary capability of the boundary.

4.1.6.51 The Working Group also considered situations in which generation plant characteristics have influenced the design of the transmission system (e.g. the use of short-term cable ratings for generation with limited running time like pumped storage). The Working Group agreed that this could be modelled by scaling the impact that different generation technologies have on transmission boundaries in a boundary constraint auction.

4.1.6.52 The Working Group noted that whilst this approach appears appropriate for access allocation, it may be problematic if these generators (e.g. pumped storage) were to seek to share their transmission access rights with Users with different generation plant characteristics. The Working Group agreed that this would be an issue for sharing within pre-defined zones with a 1-1 exchange rate, but that with the alternative node to node sharing arrangements, any exchange rate provided by the System Operator could be used to manage the issue of different generation technologies (provided these generators are connected at different nodes).

4.1.6.53 The Working Group noted that the approach to allocating transmission capacity and triggering reinforcement in an auction would need to be based on the relevant SQSS criteria, but also that if the short-term transmission access developments described in CAP161, CAP162 and CAP163 are approved, then it may no longer be appropriate for capacity on main transmission boundaries to be over-allocated. Since Users are able to choose to share access, buy short-term access from the GBSO or overrun their aggregate holding of long and short-term access rights, over-allocating transmission access rights behind export constraints may cause an inefficient increase in socialised constraint costs.

4.1.6.54 If the SQSS is revised in line with these assumptions, then it may be more appropriate to allocate physical boundary capacity in an auction. Users would essentially choose the appropriate SQSS scaling for their generation type by their choice between the long-term access rights allocated by the auction and the short-term access rights provided by CAP161, CAP162 and CAP163.

4.1.6.55 In light of the above, the Working Group considered the following options for the definition of baseline transmission access capacity:

- **Consistent with the current long-term transmission access rights**
  This option would be consistent with the current SQSS planning criteria, but with an over-allocation in Scotland. Given the extent of over-allocation of long-term access rights in Scotland, the Working Group agreed that the baseline capacity of the Scotland to England boundary should be limited to a level sufficient to accommodate those in a position to take part in the first annual auction and to purchase capacity from year 1 onwards – i.e. capacity will be allocated to any successful bidder who has an LCN Effective Date earlier than 1st April T+1, assuming that the first auction allocates capacity from Year T onwards. Any unsold baseline capacity as a result of this condition would not roll forward to future annual auctions.
  The Working Group also noted that the use of a reserve price may allow for a larger baseline capacity to be used for the Scotland to England boundary and would allow the operational costs (if any) caused by this larger baseline to be targeted to those that caused them, and this is discussed further below. Other Working Group members noted that a larger baseline could still be allocated without a reserve price, and the operational costs of this (if any) could be socialised as is the case currently.
- **Strictly consistent with the current SQSS**
  This option would be more strictly consistent with the current SQSS planning criteria such that the aggregate level of long-term access rights available in Scotland would be lower than is currently the case.
- **Consistent with physical boundary capability at peak demand**
  For exporting zones/boundaries, long-term access rights would only be released up to physical zonal/boundary capabilities, with the assumption that sharing of transmission access rights will be provided by the short-term access and sharing arrangements contained in CAP161, CAP162 and CAP163.

4.1.6.56 The Working Group also discussed the stability of the baseline capabilities and the importance of this given the decisions made by Users between long-term and short-term transmission access. The Working Group agreed that baseline capabilities would need to be consistent across all the years for which capacity is sold in a particular auction, but that they could change auction by auction. The Working Group also agreed that whilst baseline capabilities may change auction by auction, that long-term wider entry rights purchased by Users would be financially firm.

4.1.6.57 The Working Group discussed the impact of baseline capability changes on Users choosing between long and short term wider entry rights. The Working Group discussed an example in which a particular User chooses short-term access rights because they see a high baseline capability. If this capability was then revised downwards the following year, then this User is exposed to a significant increase in the short-term price of transmission access. The Working Group agreed that it is appropriate that this is a risk associated with choosing short-term (instead of long-term) wider entry access rights.

4.1.6.58 The Working Group discussed the circumstances by which baseline capabilities may change from year to year. For larger boundaries or zones, the capability will be limited by particular circuits and therefore the location of generation will interact with the baseline capability (if generation is closer to the limiting circuits, then the baseline capability will be lower). Where the location of generation that results from an auction is very different from that assumed in any ex ante network analysis used to calculate baseline capability, then it may be necessary to revise the baseline capability for the next auction.

Incremental capacity

4.1.6.59 In order to release incremental capacity, the GBSO needs to ensure that the bids received in the auction are sufficient to trigger an investment in long-term transmission assets. In order to achieve this, a 'hurdle' test is envisaged in which the cost of the reinforcement to the transmission system is compared to the value of the additional bids that could be accepted if that reinforcement is constructed. If a participant obtains capacity at a price above the supply function for incremental transmission capacity then the reinforcement is triggered. The supply function for incremental transmission capacity indicates to the Users the cost that would need to be met from incremental capacity bids in order to trigger the release of incremental capacity.

4.1.6.60 The Working Group agreed that a methodology for deriving the supply function for incremental transmission capacity would be required and this has not been developed at this stage. The Working Group did, however, discuss the principles that would underpin the derivation of the supply function, including:

- Constraints;
- Risk sharing;
- Multiple years;
- Complexity.

4.1.6.61 The Working Group considered appropriate constraints on the supply function for incremental transmission capacity and the following options have been considered:

4.1.6.62 Option 1: Assume that incremental capacity is unconstrained after [4] years

4.1.6.63 This approach is similar to that used in the gas Quarterly System Entry Capacity (QSEC) auctions. The provision of incremental capacity is assumed to be unconstrained after 42 months, although National Grid NTS (as the Gas transmission system operator and owner) has the ability to "play" permits to flex this period back or forward on each system entry point (and the playing of these permits is incentivised).

4.1.6.64 This approach would be suitable if the User commitment associated with bidding for transmission access capacity in the auction means that fewer projects seek transmission access rights than is currently the case, to the extent that all of these projects can be accommodated within the [4] year period

4.1.6.65 If this is not the case, and demand for transmission access rights continues to be in excess of supply of those rights, then this approach would lead to an over-allocation of long-term entry transmission rights and the associated inefficient operational costs.

4.1.6.66 Option 2: Model the constraints that exist on the delivery of incremental capacity

4.1.6.67 The current queue for long-term entry access rights on the transmission system suggests that transmission access is likely to be constrained for an extended period (the queue stretches out beyond 2020 in some locations). Given this, it may be more appropriate to model the constraints that exist in the provision of incremental capacity. This has the following advantages over the unconstrained approach for circumstances in which the demand for incremental long-term entry access rights is in excess of supply:

- Long-term entry access rights are not over-allocated and therefore inefficient increases in operational costs are avoided;
- The transmission rights available are allocated to those that value them most.

4.1.6.68 Given the issues listed above, the Working Group agreed that the supply function for incremental transmission capacity should include the constraints that exist on the delivery of incremental capacity.

4.1.6.69 The supply function for incremental transmission capacity would need to be set to take account of the appropriate risk sharing between generators and all Users. The Working Group agreed that the supply function should be set to 50% of the cost of the associated transmission reinforcement to achieve consistency with the gas regime and the previous work completed for CAP131 and CAP165.

4.1.6.70 The Working Group noted that in order to trigger incremental capacity, the comparison of the price Users are prepared to pay, and the supply function for incremental transmission capacity would need to look across multiple years.

4.1.6.71 The following options to handle multiple-years have been considered:

- Option A: Treat all years together

4.1.6.72 Users could submit a schedule of volumes and bid prices for a number of future years, and these could all be treated together.

4.1.6.73 Whilst this may be manageable for a relatively simple auction, it becomes a complex problem for a nodal loadflow or boundary constraint (with many boundaries) auction.

4.1.6.74 The advantage of this approach is that the baseline capability is automatically the same in each year.

- Option B: Separate auctions for blocks of years

4.1.6.75 This option is based on giving precedence to those Users that are willing to commit to access rights in the longer-term in order to simplify the auction process and introduce greater transparency.

4.1.6.76 The GBSO would first host an auction for a long-term block of access rights, say [10] years (in whole financial years). Users would specify the start date, volume and bid price for each year. It is essential that Users are able to profile bid prices between different years because of the likelihood that there will be more competition for access rights in some years rather than others. Access would be allocated to those that value these rights the most.

4.1.6.77 Once this auction has closed, the GBSO would then host an identical auction, but for a short-term term block of access rights, say [5] years. This auction would be conducted with all rights allocated by the [10] year auction included in the baseline (i.e. the baseline would be reduced by any access rights allocated in the [10] year auction).

4.1.6.78 Once this [5] year auction is closed, the System Operator would finally host an auction for access rights in individual years. Again, this auction would be conducted with all rights allocated in the [10] and [5] year auctions included in the baseline.

4.1.6.79 The main issues with this approach are:

- The precedence given to those Users that are willing to commit to transmission access rights in the longer term may lead to an inefficient solution
- Users with ageing power station assets may only want capacity for a limited number of years. If they do not participate in the auctions for [10] year or [5] year block of capacity then there may be no baseline capacity remaining for them to bid for. If they'd have been willing to bid more for these limited number of years than those generators that were allocated baseline capacity in the [10] year and [5] year auction, then the outcome will not be efficient.

- The treatment of incremental capacity; without a different treatment for incremental capacity, Users bidding for transmission capacity in the [10] year auction may not trigger incremental capacity, whereas if the [10] year and [5] year blocks of capacity were auctioned together then this would have been the case due to the increased demand for transmission access rights in certain years. This issue could be addressed by holding separate auctions for baseline and incremental capacity, although this brings other issues as described above. The auction for incremental capacity would need to consider all bids for transmission capacity simultaneously, which means that some of the simplicity and transparency of this option would be lost.

- Option C: Separate treatment for each year

4.1.6.80 Separate auctions would be held (simultaneously) for each year. Incremental capacity would initially be triggered in an individual year if the additional bid revenue that could be accepted in that year is greater than the associated supply function for incremental transmission capacity. In order to derive the supply function, the cost of transmission reinforcement (as modified to reflect the appropriate risk sharing arrangement, i.e. 50%) would need to be annuitised . The results from each year would then be summarised between rounds. Incremental capacity would be released if:

- It is triggered in at least [8] individual years, since this represents a recovery of [50%] of the capital cost at regulated rates of return; or
- It is triggered in less than [8] years but the net present value of the additional bid revenue as a result of the transmission system reinforcement across all years is greater than 50% of the capital cost of the reinforcement.

4.1.6.81 The incremental capacity that is triggered would be re-entered into the auctions for individual years. The separate auctions would then be repeated and the results published prior to the next auction round.

4.1.6.82 An illustrative example of this approach is described below.

4.1.6.83 If the capital cost of a transmission zone or boundary reinforcement is £70000/MW, then the annuitised value is £4600/MW (assuming an annuitisation factor of 15.22 as per paragraph 3.5.1.4 which is based on an asset life of 50 years and a regulated rate of return of 6.25%).

4.1.6.84 If this reinforcement is triggered in [8] individual years then the total revenue recovered will be at least [8×£4600/MW=] £36780/MW which is approximately 50% of the capital cost.

4.1.6.85 If the reinforcement is triggered in less than [8] years, then a net present value test will be applied as shown in the example below.

	2012	2013	2014	2015	2016	Total
Additional bid revenue [capacity of reinforcement × price[8]]	£11000	£11000	£11000	£11000	0	£36390
50% Reinforcement cost	£35000	0	0	0	0	£35000

[8] This would be the relevant price; the options are described under Pricing below

4.1.6.86 In this illustrative example, the reinforcement is only triggered in [4] individual years, but the net present value of the additional bid revenue is greater than 50% of the capital cost of the reinforcement, and therefore the reinforcement would be triggered.

4.1.6.87 This approach is easier to implement than the option of treating all years together, but it is not as accurate since bids in any particular year are disregarded unless they are greater than the annuitised reinforcement cost. This may mean that reinforcements are not triggered when they would have been under a strict net present value approach.

4.1.6.88 The main issue with this approach is that Users may require long-term transmission access rights over a number of years, but may be successful in some years and unsuccessful in others. A dynamic auction design may provide a solution to this issue, and this is discussed further below.

4.1.6.89 The other issue with this approach is that it reduces the transparency of the auction. It is more difficult for Users to understand the incremental capacity that is triggered in individual years because these investments are triggered over multiple years.

4.1.6.90 The Working Group also discussed the complexity of the supply function for incremental transmission capacity. This included consideration of the following options:

- Marginal £/MW function with constraints (e.g. £3000/MW up to 1000MW);
- Marginal function with multiple £/MW bands (e.g. £3000/MW up to 500MW; £4000/MW between 500MW and 1000MW, etc.)

4.1.6.91 The Working Group noted the interaction between the supply function for incremental transmission capacity and any reserve price (if applicable). The Working Group discussed the use of a reserve price derived from the Investment Cost Related Pricing Transport and Tariff model currently used to derive TNUoS tariffs. Since this methodology seeks to calculate the costs of incremental investment, this could be used to derive both the applicable reserve price in addition to the supply function for incremental investment to provide consistency and transparency for auction participants.

4.1.6.92 Finally, the Working Group discussed the treatment of planned schemes to increase transmission capability in the transition period from the current arrangements. The Working Group questioned whether:

- these schemes should progress, with the incremental capacity delivered included in the baseline capacity for the appropriate year; or
- these schemes should be used to derive the incremental capacity supply function and only progressed if triggered by the auction process.

4.1.6.93 The Working Group agreed that whilst inclusion in the baseline would ensure the timely delivery of incremental capacity, there was a risk that the need for this investment is not justified by the subsequent auction results, leading to the potential for stranded investment. The Working Group also noted the Transmission Owner revenue implications of the two options and the importance of alignment with Transmission Owner Price Control arrangements.

Pricing

4.1.6.94 The pricing options considered for a long-term entry capacity auctions are:

- Pay as bid

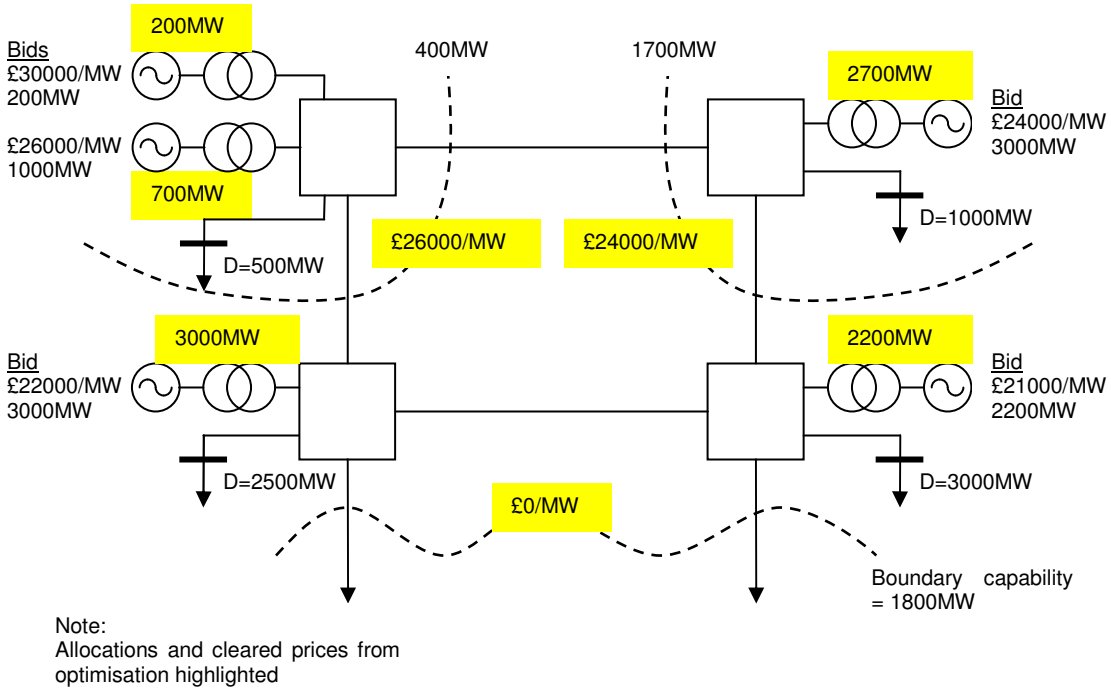
4.1.6.95 Users that are successful in the auction are committed to pay the price they bid.

4.1.6.96 The issue with this approach is that it could lead to Users paying different prices for the same service.

- Cleared (or marginal) price

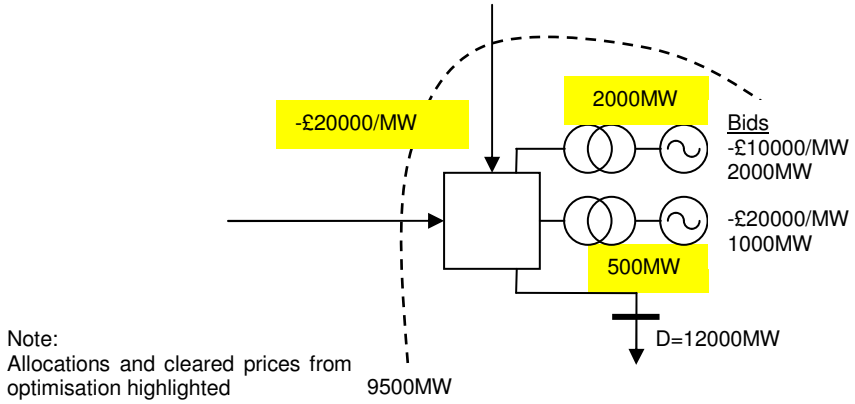
4.1.6.97 Users that are successful in the auction pay the cleared or marginal price. This is essentially the price of the last successful bid to be accepted. This means, in a positive zone with three bids for 100MW each of £1000, £5000 and £10000 that (if there is 300MW of available transmission access capacity) all three bidders will receive their chosen capacity but all would pay £1000 only. However, if there was only 200MW of capacity available then only the £5000 and £10000 bids would be successful (with both paying £5000) and the unsuccessful £1000 bid would receive no long term transmission access in the auction. The situation is the same in importing zones in which the demand is higher than the boundary capability where, if you reverse the prices (and there were 300MW available) all three would get capacity and be paid -£10000 each. However, if there was only 200MW of capacity available then only the -£1000 and -£5000 bids would be successful (and would be paid -£5000 each) and the -£10000 bid would receive no long term transmission access in the auction. In an auction for zonal capacity, the cleared (or marginal) price is simply the price at which the demand for access rights is met by supply. In a nodal loadflow or boundary constraint auction for capacity, this price depends upon the boundaries that constrain the optimisation solution. In order to illustrate this further, some examples are shown diagrammatically below.

Cleared (or marginal) pricing: Exporting example



Note:
Allocations and cleared prices from optimisation highlighted

4.1.6.98 As described in section 2.16, the main issue with a cleared price is that auction participants only receive a cleared price above zero when there is competition for capacity. This is a significant departure from the current TNUoS charging arrangements which charge on a long-run marginal cost basis whether there is spare capacity or not.



4.1.6.99 Another issue with a cleared (or marginal) price is that although it ensures the same price for the same service, there are concerns that market power can lead to an inefficient allocation of capacity. This is due to the incentive to bid below true marginal price in order to decrease the price paid, which is especially important in the presence of market power as large players have a greater incentive to shade their bids. As these players are bidding for a greater quantity of transmission access rights, they can make greater savings. This may cause an inefficient allocation as large players win fewer rights than they should and small players win too many. Although this outcome may be inefficient, it is worth noting that small players benefit from the market power exercised by the larger players.

4.1.6.100 The Working Group noted that with a cleared price, incremental transmission capacity should only be triggered if the cleared price (rather than the bid price) is greater than the supply function for incremental transmission capacity.

4.1.6.101 The testing of the boundary constraint auction undertaken by the Working Group was based on incremental transmission capacity being triggered when the bid price (rather than the cleared price) being greater than the supply function for incremental transmission capacity, and therefore further work would be required to develop the boundary constraint auction if a cleared price is to be used.

4.1.6.102 Whilst a cleared price ensures that Users that bid in the same auction would pay the same price for the same service, the Working Group noted that Users in the next auction may pay a different cleared price. Some Working Group members were concerned that this may represent discriminatory treatment of different generators based on their ability to participate in a particular auction.

4.1.6.103 The appropriate arrangements for the recovery of the difference between the auction revenue and the Transmission Licensees Maximum Allowed Revenue will be the subject of a TNUoS Charging Methodology Modification Pre-consultation.

Reserve Price

4.1.6.104 The requirement for a reserve price interacts with the other auction design considerations discussed. An auction without a reserve price can arguably send locational signals to Users for incremental capacity, since this capacity will only be released by the transmission companies if the additional bid revenue exceeds the cost of the incremental capacity (or a proportion of the cost as discussed above). However, an auction with no reserve price will not send locational signals to Users based on the cost of using existing assets, which in the long-term will have to be replaced.

4.1.6.105 It is also worth noting that without a reserve price, generators could essentially secure long-term baseline capacity at a price which is below the Long-Run Marginal Cost (LRMC). This has the following consequences:

- Users that come along in the future that are willing to pay a higher price may have to wait for incremental capacity to be constructed. Ensuring that all Users pay the LRMC by setting a reserve price for baseline capacity does not solve this problem, but it does at least minimise it.
- It may be difficult for Transmission Licensees to justify the retention for wayleaves for transmission lines in circumstances in which the Users of those lines are not willing to pay the LRMC.
- There are likely to be significant changes to revenue recovery, which will impact on the residual charge.

4.1.6.106 This is also an issue in parts of the transmission system which are currently assigned a negative TNUoS tariff.

4.1.6.107 In an importing part of the transmission network (one in which demand > generation), the transmission system may be reliant on generation to meet demand without causing any unacceptable overloading of the boundary circuits. For a nodal loadflow or boundary constraint model, generation which is sited in these parts of the network could submit negative bids. These bids would be accepted if they result in a lower cost than would be required to reinforce the associated boundary.

4.1.6.108 Whilst this results in an efficient outcome in the years in which transmission reinforcement could be completed, for those years in which reinforcement could not be completed to time, the generator could potentially submit an excessive negative bid which would have to be accepted to ensure transmission system security.

4.1.6.109 In order to prevent this situation arising, it may be worthwhile to consider collaring negative bids at zero or the long-run marginal cost (LRMC) for the area. The LRMC could be calculated by the Investment Cost Related Pricing (ICRP) transport and tariff model, although the input assumptions would have to be clarified.

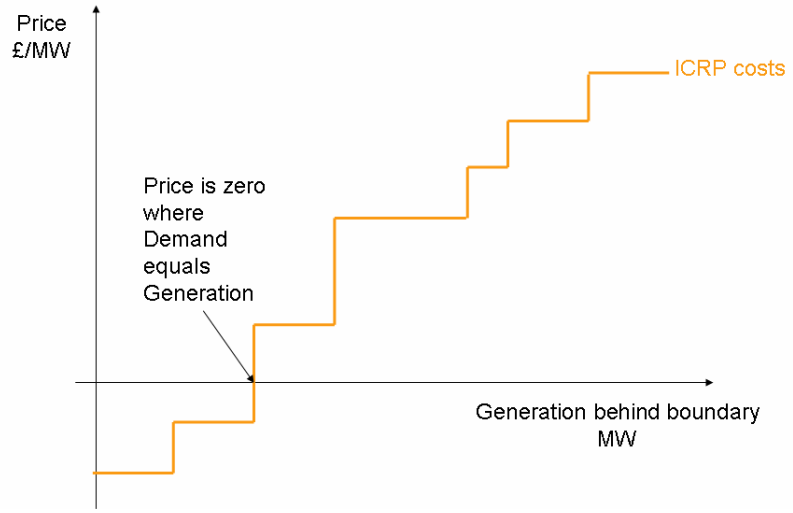
4.1.6.110 In terms of modelling this in a nodal loadflow or boundary constraint model, this could be achieved by introducing a 'dummy' generator priced at the LRMC collar (e.g. -£8500) that would effectively compete with the generators in that area. If generators submitted better bids (e.g. -£8490) then the optimisation would accept them whereas if generators submitted worse bids (e.g. -£8510) then the optimisation would accept the dummy generator in order to honour the boundary constraint. The generation that was actually needed in real time to prevent an unacceptable overloading of the boundary circuits would then be required to procure short-term access.

4.1.6.111 In light of the issues highlighted above, the Working Group considered the implementation of a reserve price to maintain the long-term locational cost signals that currently exist.

4.1.6.112 In order to achieve this, the ICRP transport and tariff model would be used to calculate the reserve price. This could be a zonal reserve price, or could be mapped to boundaries (e.g. for use with the boundary constraint model). The Working Group discussed the following issues associated with calculating a reserve price with the ICRP transport and tariff model:

- Uncertainty in level/location of generation;
  Given the level of generation in a zone or behind a boundary is unknown at the time the reserve price is calculated, the Working Group considered the calculation of a reserve price function as shown in the illustrative example below.

Boundary transmission supply function

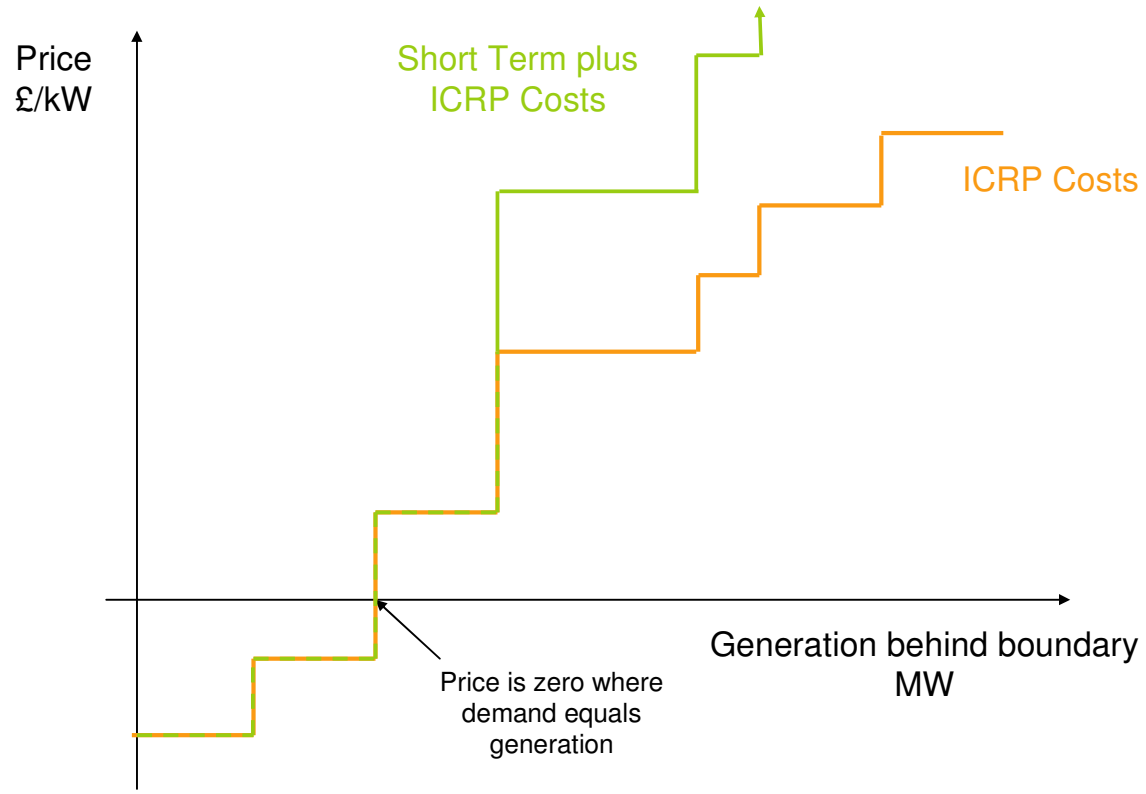


Where the generation behind a boundary is lower than the demand, the reserve price is negative, indicating that generation behind that boundary would reduce transmission costs in the long-term (fewer transmission assets would be needed to supply demand). Where the generation behind a boundary is higher than the demand, the reserve price is positive, indicating that additional generation behind that boundary would cause additional export and therefore additional transmission costs in the long-term.

- Future transmission network uncertainty;
  The associated costs of the reinforcements that are completed on the transmission system to provide incremental capacity will have a bearing on the associated reserve price.

4.1.6.113 The Working Group agreed that these issues would need to be addressed prior to the implementation of a reserve price based on the ICRP transport and tariff model. It was agreed that completing this work would involve a substantial amount of resource to complete. Views on which was the best governance framework under which to progress such work were heavily in favour of the CUSC governance framework being the most suitable. An alternative option of the Charging Methodology was put forward by National Grid as National Grid felt that though either governance framework could be used, keeping using Charging governance would avoid the need for the ICRP methodology to be duplicated in the CUSC. The clear majority of Working Group members continued to favour CUSC governance however.

4.1.6.114 The Working Group also discussed the application of a reserve price to the over-allocated boundary between Scotland and England. Given that the over-allocation of long-term access rights behind this boundary is leading to increased short-term (operational) costs, it was proposed that these costs could be added to the reserve price function. This would allow any expectation of future over-allocation to be honoured, but also ensure that Users that benefit from the over-allocation of long-term transmission rights pay a cost-reflective price – an example of this is shown below. Some Working Group members did not feel that this approach would be appropriate and that such costs could continue to be socialised across all Users. Other Working Group Members felt that the model may not be workable and without further analysis of the approach felt unable to support or oppose it.



4.1.6.115 It is noted that although the above analysis was looked at against the context of the currently over-allocated Cheviot (B6) boundary it was assumed that the methodology put forward above would equally apply to any other over-allocated boundary. However it is not the intention of National Grid to over-allocate any boundaries that are not currently over-allocated through a transmission access auction.

Static/dynamic

4.1.6.116 One of the main options in auction design is between a static or dynamic auction.

- In a static auction, there is only one round of bidding. This makes the process simple to administrate, but also means that bidders do not have the opportunity to refine their bidding strategy.
- In a dynamic auction, there is more than one round of bidding, and bidders have an opportunity to revise their bids based on the information revealed in the previous rounds of bidding.

A frequent motivation for the use of dynamic auctions is reducing common-value uncertainty, allowing bidders to bid more aggressively with less fear of 'winner's curse'.

The role of a dynamic auction in price discovery is also important. If there is little price information available, then it is difficult for bidders to know how to bid. By seeing tentative price information in the early rounds of bidding, bidders are more able to make decisions about bidding strategy, which increases allocation efficiency.

4.1.6.117 The Working Group considered that due to the immaturity of the secondary markets that are proposed for transmission access (the short-term arrangements described in CAP161, CAP162 and CAP163), avoiding winner's curse is an especially important consideration and therefore the Working Group unanimously supported the use of a dynamic auction (over a static auction) for CAP166.

4.1.6.118 The operation of a dynamic auction could be constrained by only allowing ascending (or descending) changes between auction rounds to the price, volume or duration of transmission access rights that Users are bidding for.

4.1.6.119 A dynamic auction would allow Users that are allocated transmission access rights that are lower than their minimum stable generation an opportunity to increase their bids to increase the rights allocated to them.

4.1.6.120 For the 'separate treatment of each year' approach described above, a dynamic auction would allow Users to increase their bids for any years in which they are unsuccessful.

4.1.6.121 The Working Group noted the importance of information provision between auction rounds to aid price discovery. The Working Group agreed that bid prices and volumes (MW) should be published together with access allocations (MW) and cleared prices for each individual year and details of the timing and volume (MW) of any transmission reinforcements that are triggered.

4.1.6.122 Some Working Group members expressed concerns about this level of transparency since it may lead to gaming by parties to ensure competitors pay a high price for capacity. The Working Group agreed that the majority of these concerns were addressed with the use of a cleared price auction, and that maximum transparency is the appropriate starting point. This can be reviewed when there is some experience of auction participants' behaviour. Some Working Group Members also noted that this issue would be further mitigated through more extensive testing and trialling processes. Other Working Group Members noted that there is also the ability of Ofgem to view the actions of Users in auctions and if it felt it to be appropriate investigate any behaviour that could be viewed as anti-competitive.

4.1.6.123 In the case of the transmission access rights allocated being lower than minimum stable generation or access rights not being allocated in particular years, if Users are unsuccessful in winning the necessary access rights by increasing their bids in further rounds then these Users may want the option to drop their bid prices or reduce their bid volumes for long-term access rights to avoid being committed to paying for a sub-optimal holding of transmission access rights. This implies that inappropriate constraints on changes to price, volume (MW) or duration between auction rounds would not be helpful.

4.1.6.124 Without any constraint on changes to price, volume (MW) or duration between auction rounds, the auction could potentially run for very many rounds as Users optimise their positions. In order to ensure that the auction closes, the following options were considered:

- a 'clock' auction;
- define stability criteria, such that the auction closes when these criteria are met;
- Introduce appropriate constraints on changes to price, volume (MW) or duration and define stability criteria.

4.1.6.125 The Working Group did not support a 'clock' auction because it would mean that the allocation of capacity would be reduced to a 'fastest computer wins' process, with Users not declaring their positions until the very last moment. The Working Group noted that an auction with a maximum number of rounds essentially collapses to a 'clock' auction unless there are other means by which the auction can close (e.g. stability criteria being met).

4.1.6.126 The Working Group considered that monitoring changes to allocation of capacity to Users between auction rounds could be used to establish appropriate stability criteria for a dynamic auction. As an example, the auction could be closed when there are no changes to transmission access right allocations between rounds of >10MW or no changes to the cleared prices between rounds of >£0.01/MW.

4.1.6.127 The Working Group developed the stability criteria based on cleared prices further. The cleared price associated with each boundary in each year would be monitored. Initially the Working Group considered that the auction would close if the cleared prices in all years and zones (or all but a small number) were identical in two successive rounds. Worked examples of these stability criteria showed that there were circumstances in which access allocations could change without the cleared price changing and therefore the Working Group agreed that the auction would close if the cleared prices in all years and zones (or all but a small number) were identical in three successive rounds. To aid auction participants, National Grid would notify Users if the stability criteria were met in two successive rounds to ensure that the auction would not close ahead of participants expectations.

4.1.6.128 The Working Group also agreed a mechanism whereby Generators would be able to set a "de-minimis" auction acceptance volume parameter that would limit the auction model from accepting a Bid from a Power Station if it was pro-rated or capped at a level below the de-minimis value specified. This would ensure that Generators would not be left with long-term transmission access allocations that due to the physical operating range of the Power Station would in practice be of little use to the Generator. It would also have the benefit that such transmission access would also be released to those more able to utilise it.

4.1.6.129 The Working Group discussed some testing of an illustrative auction model that was performed by National Grid. In these tests, players behind constraints would reduce their volume to 0MW when the cleared price got above a certain value. This volume reduction would cause the cleared price to collapse to zero (or the reserve price) in the next round and these players would increase their volume again in the next round. Under these circumstances, it does not appear to be appropriate to allow Users to increase their volume again from 0MW. If they did so, then the cleared price would increase again and since other Users were prepared to pay more than the User that dropped out in previous rounds, this would be the case in future rounds meaning that the auction is prolonged for no benefit. The Working Group noted that it may be appropriate to allow Users to increase their volume from 0MW in future rounds if more than one User behind the same binding constraint were to drop out in the same round.

Summary of design options

4.1.6.130 The table below summarises the design options, for the CAP166 auction, considered by the Working Group.

Design considerations	**Options**			
Network analysis	Zonal	Nodal loadflow	Boundary constraint	
Interaction between boundary capability and connected generation	Ex ante analysis	Ex post	Multiple boundaries	Participation factors
Baseline and incremental capacity	Separate		Together	
Definition of baseline capacity	Current long-term access rights (TEC)	Current GBSQSS	Revised GBSQSS	
Incremental capacity - Constraints	Unconstrained after [4] years		Constraints modelled	
Incremental capacity - Multiple years	Together	Blocks of years	Separate	
Incremental capacity - Planned schemes	Include in baseline		Include in derivation of incremental capacity supply function	
Pricing	Pay-as-bid		Cleared (or marginal) price	
Static/Dynamic	Static		Dynamic	
Reserve price	Based on LRMC		No reserve price	

4.1.7 Buy-Back Arrangements

4.1.7.1 When considering the appropriate arrangements to deal with the non-provision of access rights, it is important to consider the differences between the two access products being suggested by CAP166; LCN and wider transmission access rights.

4.1.7.2 For LCN, it is suggested that the remedy for non-provision of the required physical works should continue to apply as currently detailed for an existing local and wider connection application. This means that the Connection Agreement would specify the circumstances and the form of compensation payments which would be paid by National Grid if the TOs failed to deliver such assets. If the reason for a delay in the provision of such assets was due to any failure to comply by the generator concerned with any terms of the Connection Agreement, as is currently the case, no such compensation payment would be due in that instance.

4.1.7.3 For the wider transmission access product, if the access rights secured via the auction process are not able to be honoured, then the appropriate compensation should depend upon the reason for such failure.

4.1.7.4 If the reason for such failure is that the LCN was not completed (hence access to the wider system is not possible), then in addition to any failure to deliver payments applicable under the LCN process, it is suggested that National Grid should offer to buy-back the wider transmission access rights from the purchaser at the price originally paid in the auction. The User would of course be free to enter into any contractual arrangements with a third party to transfer such rights, but note that due to the limitations around the acquisition of wider transmission access rights, such a third party would need to hold appropriate LCN for the transfer to be possible. This effectively offers the User the opportunity of potentially recovering the value of its auction bids for wider access in addition to any payments due under the LCN process.

4.1.7.5 If the reason for failure to provide such wider transmission access rights is due to a constraint on the wider system itself, it is proposed that the existing Balancing Mechanism approach should continue. However, in the circumstances where there is limited competition in the provision of such constraint volumes (due for example to the location of a particular generator on the system), it may be appropriate for an administered price to be applied in these cases to avoid any abuse of market power. Some Working Group members disagreed with the principle of an administered price being applied and believed that any abuse of market power could be dealt with by the Authority.

4.1.7.6 Within the Working Group there was also a consideration of other high-level options to dealing with circumstances in which successful bids for incremental capacity are not honoured by the GBSO due to delays in the planning and/or construction phase. For the avoidance of doubt, where such a delay was due to the generator's failure to comply with the Connection Agreement then no buy-back would be made to that generator for so long as they failed to comply.

4.1.7.7 The further options considered are described below:

- Construction Agreements are used to manage the delivery of wider transmission works and User works. This is the situation which currently applies under the existing local and wider connection application process, but it is difficult to envisage how this could continue in the future as the two access products are effectively de-linked.

- Within the auction process, Users' bids would include both a bid price (£/MW) and an acceptable buy-back price (£/MWh). Whilst this option appears attractive to Users since it allows a particular User's acceptable buy-back price to be considered in the allocation process, it is difficult to develop a practical and transparent means of doing so without over-complicating the auction allocation process.
  The importance of the buy-back price submitted by the User in access allocation would depend on the GBSO's assessment of the risk that the incremental capacity would have to be bought back. A disadvantage of this approach is that it is not an easy task to undertake as it would necessitate the GBSO assigning ex-ante probabilities to such risks which may not be valid once the results of the allocation are known.

4.1.8 Balancing Services

4.1.8.1 The Working Group agreed that generators tendering for Balancing Services contracts would be responsible for purchasing the necessary transmission access rights, whether long-term or short-term, to meet those contractual requirements. Although Short-Term Operating Reserve contracts can be for as long as 2 years, Balancing Services in general are procured within year. This would give generators the option of using long- or short-term access products, and then tendering for such services. The exception to this would be MaxGen, which by definition is a product used to exceed transmission access rights holdings.

4.1.8.2 The Working Group discussed whether requirements for mandatory ancillary services would need to be removed from the Grid Code as a result of the implementation of a long-term entry capacity auction. The Working Group agreed that this would not be necessary since mandatory ancillary services only need to be provided when Users are generating.

4.1.8.3 Some Working Group members expressed concern that a generator may not have transmission access capacity at the point at which National Grid wishes to dispatch that generator. However, this may only be an issue if access rights holdings changed half hour on half hour, which would not be the case for capacity allocated under CAP166 (or, indeed, for any of the short-term products currently being developed). In any event, the generator would have the ability to specify its operational parameters to be reflective of the transmission access rights it held.

4.1.9 Testing of Auction Design

4.1.9.1 The group discussed in detail the importance of the design and testing of an auction. The literature emphasises that auctions (be they for a product a commodity or service) are only suitable for allocating a scare resource if they are well-designed and that one size fits all is a very bad principle in auction design. The Working Group were concerned that there has been no expert advice on the auction designs, given the dangers of unintended consequences.

4.1.9.2 The importance of testing was highlighted by the original proposal as described in section 3.8.3.2 above. A full design was developed and appeared suitable. However a five minute experiment by some Working Group members demonstrated that the design was fundamentally flawed and not suitable for allocating transmission access capacity.

Boundary constraint model testing

4.1.9.3 A simple version of the boundary constraint model was developed towards the end of the Working Group process to aid understanding of the auction model. This model was based on the SYS zones and had 17 boundaries. The model was developed in a very short time scale and has not been thoroughly tested. However, initial testing produced results as expected.

4.1.9.4 Testing with the model identified the issue that the current TNUoS approach and the auction could provide very different pricing signals. This issue was particularly notable in zones which are currently assigned a negative TNUoS tariff. In these zones, an increase in generation would, in the long run, reduce the overall cost of transmission. Generators in these zones currently receive a TNUoS payment. However this is not necessarily the case with the boundary constraint auction. A generator in a zone would only receive a payment if the total flow across boundaries into the zone could not meet the demand in that zone. The generator is required to meet demand and can therefore charge a scarcity price. All other generators in zones which currently have a negative TNUoS tariff would need to submit positive bid prices in order to gain long-term access rights.

4.1.9.5 Testing of this 17 boundary model for a single year also highlighted transparency issues caused by the nested nature of the boundaries which made it quite difficult for participants to understand what bid was required to obtain capacity.

4.1.9.6 In order to investigate the transparency of these arrangements for Users, the Working Group tested a simple model which included multiple boundaries.

4.1.9.7 Given that the boundary constraint model is based on an optimisation which seeks to maximise bid revenue minus reinforcement cost, the Working Group interpreted this to mean that provided the clearing price on the exporting side of a boundary was greater than the incremental capacity supply function then reinforcement of the boundary would be triggered.

4.1.9.8 The Working Group found that, whilst this was the case with no other constrained boundaries, other constrained boundaries interacted such that reinforcements are only triggered if the cleared price differential across a boundary is greater than the supply function.

4.1.9.9 The complexity of participating in an auction with more boundaries for a number of years is likely to be much greater. The degree of complexity will only be understood by testing a full auction model, but this has not been possible in the time provided to the group. However, the majority of the group were of the view that any auction model is likely to favour large participants who have significant analytical capability.

4.1.10 Non-Physical Players

4.1.10.1 Under the current (CUSC) arrangements, only physical parties; ie generators; can apply for Transmission Entry Capacity (TEC). Transmission access arrangements are codified in the Connection and Use of System Code (CUSC). Currently Interconnector Users and Suppliers are non-physical signatories of the CUSC, but these Users do not hold TEC. For holders of TEC, the CUSC is ingrained with technical obligations which Users with transmission entry access rights must fulfil (because such rights are implicitly linked to physical generation equipment). To allow non-physical parties to obtain (and then trade) transmission access a new category of non-physical User would need to be included, and the CUSC would need to be rewritten to separate access rights from Users' obligations.

4.1.10.2 One member of the Working Group questioned whether it would be permissible under the Acts of Parliament associated with the CUSC to change it to include non-physical players. They noted that if during the progression of the NETA and BETTA related legislation (which (i) introduced the CUSC and (ii) amended it) DTI/BERR, Ministers, the Government, or Parliament had opined on non-physical players then this might preclude what was being proposed. It was decided to seek a legal view on this from BERR. The group voiced concern that waiting for the answer could hold up the work of the group. However, it was noted that the work of the group could proceed and a response on this matter be provided (i) to the group or (ii) the CUSC Panel in due course.

4.1.10.3 For the avoidance of doubt, the Working Group agreed that if CAP166 were to include the ability for non-physical parties to obtain (and then trade) transmission access that this would be an Alternative (as this was not part of the (original) CAP166, as proposed by National Grid. The Working Group is not proposing, at this stage, that such an Alternative be developed.

4.1.10.4 Under a recent CUSC amendment, CAP150, a power station should be able to demonstrate the capability of delivering MW output equivalent to their requested (MW) TEC transmission access figure. CAP150 was brought in to avoid network investment in excess of the capability of generation assets. Non-physical players by definition would not be able to demonstrate this capability without an agreement with a physical party.

4.1.10.5 There is concern in the group that allowing non-physical parties to buy transmission access rights could lead to poor transmission investment signals. Under the current arrangements as a power company builds their power station the risk of them not connecting reduces as the assets are put in place. Often the investment in transmission assets for a new power station goes hand in hand with the power station assets being built. If transmission infrastructure is built to accommodate a purely financial commitment the revenue for the assets would be recovered (from the non-physical party who made the booking that caused the transmission investment) but the infrastructure may remain unused.

4.1.10.6 The group believed it would be difficult for the TO's to build assets to reinforce a zone without knowing specifically where a generator would be based as well as the associated technical aspects of that generator. Some Working Group members suggested that the transmission system boundaries could be reinforced in this case, although this may not be the most appropriate investment, depending on who the eventual (physical) party was that used the rights.

4.1.10.7 Some members of the Working Group voiced concern that adding a third party into the trading of transmission access rights may increase the transactional costs. Such non-physical parties would also be aiming to make money through the trading of transmission access capacity, which would be likely to increase the overall cost to the electricity consumer.

4.1.10.8 The main aim of including non-physical players in the market would be to improve liquidity, and to address the concern that to exclude them would be to limit market activity. Non-physical participation is permitted in other markets, such as gas, though new capacity has to be booked at a certain point not in the form of deep reinforcement. However, the focus for the development of transmission access arrangements is to facilitate the more efficient use of the electricity transmission system. The group considered that it should aim to do this in the least complex manner and that creating a new commodity market should not be an aim in itself.

4.1.10.9 Therefore, given the additional complexity that would result from the inclusion of non-physical participants, the group believed that significant benefits would need to be demonstrated in order to justify such a move. Further, some members of the group considered that introducing non-physical players would not actually improve the liquidity of the market. There is also some concern in the group that allowing non-physical players to participate would increase the potential for gaming.

4.1.10.10 One member of the group argued that the exclusion of non-physical parties in the proposed long-term electricity access arrangements is discriminatory and against the spirit of a liberalised competitive market. However, it was pointed out by other members of the Working Group that the exclusion of non-physical parties has been a feature of the CUSC since it was designated by the Secretary of State in 2001 (and again in 2005) following consultations by Ofgem and (DTI)BERR.

4.1.10.11 Some members of the group considered that allowing all (physical and non physical) parties to participate in transmission access arrangements, improves competition and liquidity for capacity so that where there is a scarce resource, a useful investment signal is developed. Different capabilities may facilitate the entry to the market of new players particularly if they are small in size and cannot handle the risk associated with transmission access. Also, the generation market becomes more competitive as a variety of contractual forms are allowed to exist. For example, tolling arrangements and optimisation for merchant plants where capacity is managed by the “off-taker” who may very well be a “non-physical” player.

4.1.10.12 One member argued that some of the financial transmission rights markets in the US also permit non-physical players to participate. The reason for that is exactly that financial players, if subject to the same collateral and anti-hording requirements as the rest of the market participants, can bring additional liquidity to the market and offer risk management services to smaller participants that may not have the same capability.

4.1.10.13 A Working Group member considered the discussion on gaming is also overplayed. Capacity speculation within transmission networks is not viable when there are appropriate anti-hoarding measures in place, and in any case there can be no provision on which class of market player may trade purely on a speculative basis. The Working Group member added, on the other hand no legislation can prevent non-physical players acting on the capacity market through a physical player and a "sleeve" arrangement. Taking as an example the UK Gas Market, abusive squeezes in the gas capacity market have not worked as capacity simply becomes free for those that can physically utilise it.

4.1.10.14 The majority of the group concluded that including non-physical players in the transmission access arrangements would provide liquidity advantages. However, in order to do so it would be essential that appropriate anti hoarding measures were put in place to avoid market abuse. Short term access arrangements could provide anti hording measures by ensuring that unused capacity was made available for free in the short term markets. Some Users would want to buy long-term transmission access rights as a hedge against the short term price of access.

4.1.10.15 The group believe that it may be necessary to have a Licence for non-physical Users. To include non-physical players would also involve changes to the CUSC. The group; mindful of the need for (i) anti hoarding measures and (ii) the fair trading of capacity; considered that arrangements similar to those applied to Users of inter-connector would need to be put in place if non-physical players were to be granted long term transmission access rights.

4.1.10.16 The majority of the Working Group believes that whilst non-physical player could provide some benefits it was not practical at this stage to include them in the proposed CAP166 amendment. It is considered that whilst the inclusion of non-physical players should not be taken forward as part of this amendment it would be a positive extension to the access arrangements at a future date.

4.1.11 TO/SO Interaction

4.1.11.1 One of the points to consider of moving to an auction framework will be the interaction between the actions of the TOs and the SO. If incremental capacity is signalled on the system then revenue for provision of such incremental capacity is assumed to be provided to the TOs under the provisions of their respective Transmission licences. This may be through the Regulated Asset Base (RAB) if the incremental capacity has already been factored into the baseline obligations or via the revenue driver provisions if the baseline is assumed to be flat.

4.1.11.2 However, constraints on the system could occur for two different reasons:

- the decision by the SO to provide incremental capacity by contractual means or by essentially 'run the system harder'; or
- the decision by one of the TOs not to invest on the system.

4.1.11.3 An appropriate set of complementary incentive arrangements will need to be developed such that there are the correct incentives on the various parties involved such that both the TOs and the SO can make informed choices as to how to provide such incremental capacity.

4.1.12 Governance including Auction Methodology Statements

4.1.12.1 The Working Group discussed the appropriate governance arrangements for the auction.

4.1.12.2 The Working Group proposed the establishment of a suite of methodology documents under the CUSC. These methodology documents would include, for example, baseline definition and supply function for incremental transmission capacity. It is envisaged that changes to the methodology could be proposed in accordance with the established CUSC amendments process.

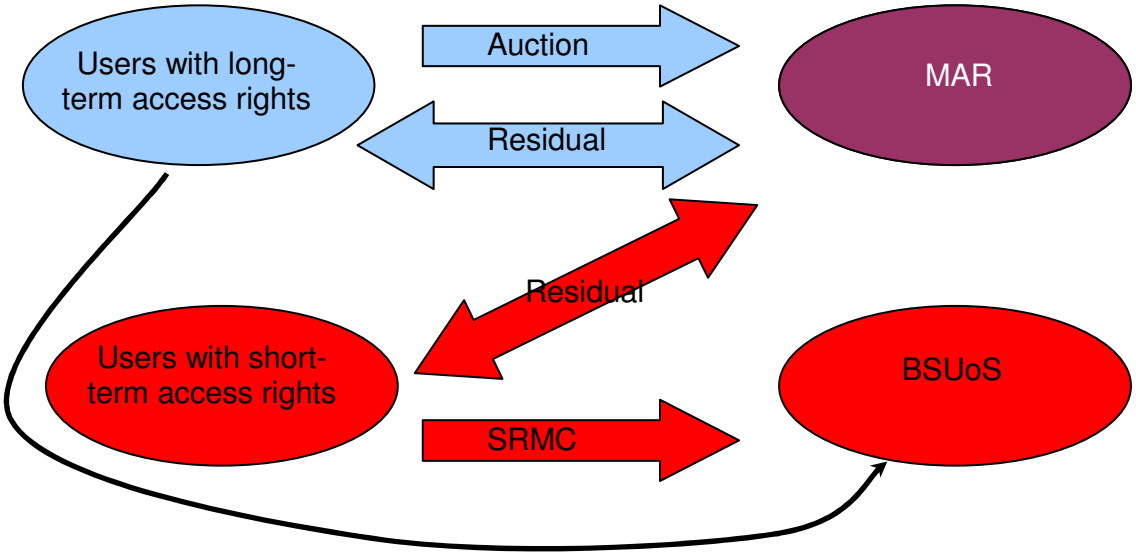
4.1.12.3 National Grid presented to the Working Group a draft of a "SO Long Term Release Methodology Statement", the purpose of which is to provide a description of the mechanism by which National Grid would offer TEC for sale via the Long-Term auction process. It also describes the methodology that National Grid would use to determine whether to release incremental capacity to Users, and the levels of financial commitment required from such Users to underpin such a release. It was largely based on the existing process which is followed as part of the long-term auctions for Entry Capacity in Gas.

4.1.12.4 The following items are included within the draft SO Long-Term Release Methodology Statement. The complete document may be found attached to this Working Group Report at Annex 8.

- Purpose of the Methodology Statement
- Summary of the methodology underlying the Auction Process
- Auction process – Introduction and the product being offered for sale
- Annual Invitation Process
- Annual Auction Application Process
- Stability of the Annual Auction Application Process
- Annual Auction Allocation Process
- Annual Auction Information Process
- Incremental Release Methodology – Decision Making Applied
- Procedure for allocating incremental annual TEC
- [The methodology by which the Reserve Price is calculated behind each boundary]
- Simple example of allocating incremental annual TEC (single year and multi year examples)

4.1.13 Revenue Recovery

4.1.13.1 The group considered that it was appropriate for Users buying both long-term and short-term access products to pay for their use of the transmission network. This would be paid for through the generation residual by all Generators.



Should a Reserve Price for the price of Long-Term Access rights exist and contain an element reflecting the short-run costs of over-allocating long-term access, the revenue from this element will be offset against BSUoS

4.1.13.2 Since the residual would be used to recover the remainder of the maximum allowed revenue after an auction, the amount of money which needs to be recovered through the residual is dependent on the amount of revenue recovered from the auction. The revenue recovered from the auction could over or under recover MAR. This means that the residual could be either positive or negative. It was further noted by the Working Group that in auction models without a reserve price there was potential for no or little revenue to be collected through the auction in certain years and that in such cases the share of National Grid's Maximum Allowable Revenue (MAR) paid by Generators (27%) would be entirely recovered through the generational residual tariff.

4.1.13.3 The Working Group considered if it was appropriate for Users with short-term access to pay (or be paid) a generation residual which could be heavily influenced by the long-term capacity auction. The Working Group noted that the allocation in the long-term auction would affect the price of short-term products. If the auction over recovered that would mean there was much competition for access. This would lead to the short term products being expensive. If the auction under recovered it would mean there was less competition for long-term access and therefore in general the short-term access products would be cheaper. However to remove the linkage between Short-Term Access and the residual TNUoS tariff would mean that Short-Term Access Users would not be contributing to the long-run costs of the transmission system which some Working Group Members also felt was inappropriate.

4.1.13.4 The group concluded that if Users with short-term access were expected to pay the generation residual when the auction under recovers, it is equitable for short-term Users to be paid the generation residual if the auction over recovers. Further consideration of how the residual will be charged under will be considered through the charging governance.

4.1.13.5 There was also a short discussion by the Working Group of the most appropriate revenue recovery mechanism in auctions with reserve prices, specifically where the Reserve Price reflects the short-run marginal costs caused by an over-allocation of long-term access rights. A number of Working Group members believed that it would be appropriate to ring-fence such revenues from the auction that reflect these short-run costs and to offset them against the BSUoS charges. There was insufficient time available to the Working Group to properly assess the most appropriate means of performing this offset however with views being split between whether the revenue would be most appropriately offset on a £/MW basis or a £/MWh basis.

4.1.13.6 The eventual conclusion was that the total revenue should be offset against the total BSUoS bill, effectively meaning that a fixed sum would be subtracted from each half hour of BSUoS revenues across the whole year. This approach was adopted for pragmatic reasons due to lack of assessment time and not because a majority of Working Group members felt it to be the most appropriate.

4.1.13.7 One final observation was made with regard to the revenues from auctions in response to concerns of Working Group members who felt that due to the demand for transmission access the revenues from auctions could see a significant "over-recovery" of revenue when compared to the existing revenue from locational generation TNUoS charges (~£50million) and perhaps could exceed the ~£330million of revenue (27% of MAR) collected from generation in total TNUoS charges. It was noted however that regardless of how much revenue resulted from the auction, Generators as a group would never pay revenue in excess of 27% of MAR. In the extreme case where more than 27% of MAR was recovered by the auction the residual tariff would become negative to compensate.

4.1.14 Impact of Price Based Auction on TNUoS Charging

4.1.14.1 It is important to note at this stage that the principles underlying allocating capacity via an auction of the type described are very different from those of the present TNUoS methodology. An auction (of the type described by the original amendment, WGAA1 and WGAA2) therefore provides very different price signals to participants compared to the current TNUoS charging methodology. This issue was only identified by the majority of the Working Group late in the process and so there has been little discussion within the group on this important topic. The major differences between the TNUoS and auction approaches will now be described.

4.1.14.2 The current TNUoS charging methodology recovers the cost of the existing network and provides locational signals for new capacity. TNUoS essentially charges for both existing and new capacity on a long-run marginal cost basis. At a given node the impact of an incremental MW of capacity on the MWkm of the network is calculated. For a generator in the south the MWkm of the network is likely to reduce as flows from Scotland are reduced. This reduction in MWkm is reflected in a negative charge for the southern generator. Conversely, an incremental MW of capacity in Scotland will increase the MWkm of the network and this is reflected in a positive TNUoS charge in Scotland.

4.1.14.3 Unlike TNUoS, a capacity auction without reserve prices is not designed with the intention of recovering network costs. The auction is aimed to fulfil two primary functions. Firstly, in a system where capacity is constrained, it provides a method of allocating this scarce capacity. Secondly, it provides a mechanism for participants to signal their desire for new capacity by bidding at a level which triggers investment.

4.1.14.4 The significant difference between the two methodologies can best be understood by considering a network where new capacity is only allocated following the completion of the necessary transmission reinforcements (which results in no entry capacity constraints). Under the current TNUoS methodology generators in the north will be charged for capacity whereas generators in the south will be paid. The remaining costs of the system are recovered through the residual payment which is charged on a £/KW basis.

4.1.14.5 Conversely, an auction without reserve prices will only charge participants for capacity when there is competition for that capacity. Under the unconstrained situation described above there is adequate capacity for all generators. In the absence of a reserve price, participants could bid zero in the auction and will receive their requested amount of capacity. In this situation the cost of the network attributed to generation (27% of the total transmission allowed revenue) would be recovered through the residual charge.

4.1.14.6 The primary difference in the two approaches is in the treatment of the current network. The TNUoS methodology and an auction with reserve prices linked to Long-Run Marginal Costs charges for the existing network on a Long-Run Marginal Cost basis whereas the auction without reserve prices considers the cost of the current network to be a sunk cost. It only derives an income from the current network when capacity is scarce.

4.1.14.7 This may have a significant impact on revenue recovery, particularly in the early years of an auction in which only the existing connected generators are in a position to bid for access rights and all zones (or boundaries) are unconstrained because the transmission system has been designed to accommodate all of these generators.

4.1.14.8 It is also worth noting a second difference between the two approaches. Under the auction regime, depending on the timing of auction participation, two adjacent generators can be charged very different amounts for what is essentially the same capacity product. Consider a situation where generator A is already on the system and is able to participate in the initial auction. If generator A is successful in the auction for 5 years it will pay the cleared price in that auction for the 5 years' worth of capacity. Generator B is located adjacent to A but was not completed in time to compete in the initial auction. Generator B competes in the auction 1 year later and successfully obtains capacity for 4 years at the cleared price of that auction. This cleared price in the second auction could be very different from that in the first auction. This contrasts with the current TNUoS methodology, which due to the fact that it is a prevailing charge, all generators in the same location would be charged the same cost for capacity.

4.1.15 Interconnectors

4.1.15.1 The Working Group noted that interconnector owners would have to bid for long-term wider entry access rights, but may have a different appetite for risk than interconnector Users.

4.1.16 Interaction with other Modifications

4.1.16.1 The Working Group noted that the following CUSC amendment proposals could be implemented with CAP166 in order to provide a flexible short-term access regime:

- CAP161: SO release of short-term access rights;
- CAP162: Entry capacity overrun;
- CAP163: Entry capacity sharing.

4.2 Working Group discussions during extension – Capacity and Duration Auctions

The following section summarises the discussions which took place in the Working Group during the eight weeks extension where the focus was on development of a capacity and duration based auction model.

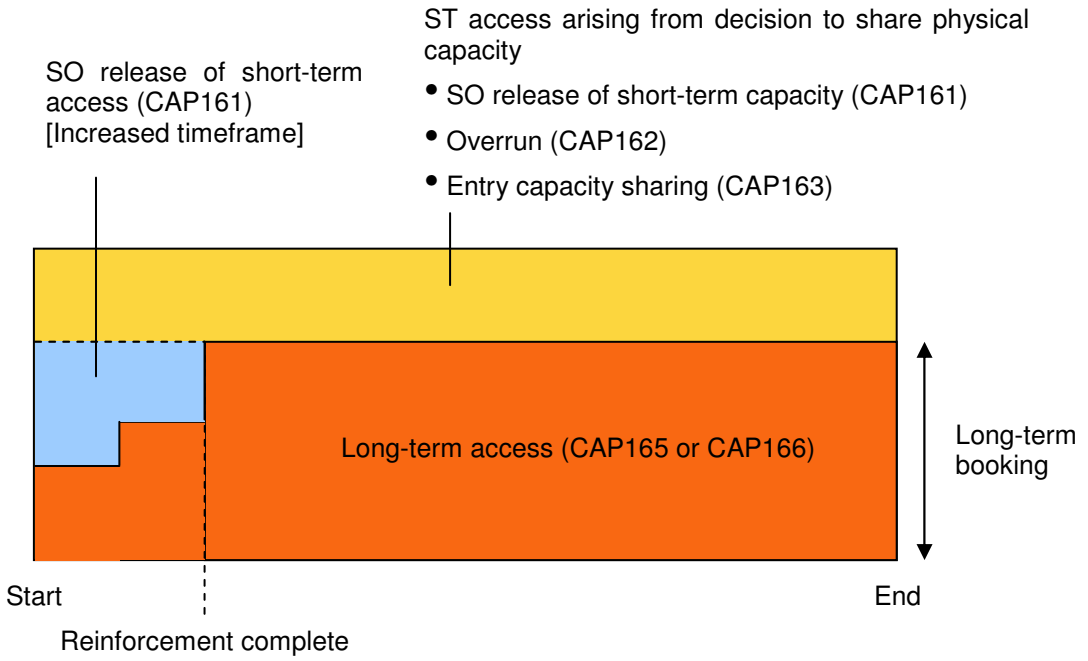
This type of auction differs fundamentally from a price based auction in that the System Operator no longer publishes the availability of capacity in each year of the auction to the market. In this instance, Users bid their capacity requirements and their requirements are allocated in full but at a price which is calculated as a combination of a long-run price (taking into account the physical capability of the network) and at a short-run price for access rights above that physical capability.

4.2.1 Discovering the appropriate level of transmission investment

4.2.1.1 The Working Group discussed how the signals received from an auction for long-term transmission access could be used to determine the appropriate level of transmission investment. The following is based on the time period after which the TOs would be able to respond to any signals to provide investment on the GB transmission system, rather than in the intervening period when a potential 'over-allocation' of rights could exist.

4.2.1.2 The Working Group noted that long-term access rights provide Users with a perfect hedge against the short-term price of transmission access at a stable price. The main means of providing this hedge is to invest in transmission capacity and minimise the short-term price of transmission access.

4.2.1.3 In order to understand this issue further, the Working Group considered the full range of "raw" transmission access products potentially available. These are shown in the diagram below.



4.2.1.4 The Working Group then compared the following scenarios:

Scenario One: User makes derivatives from raw products

4.2.1.5 Under this scenario, Users would take a view as to the level of long-term access rights they require based on their intended operating regime and knowledge of the short-term and long-term access prices. Users would then only bid for the level of long-term rights they required in the auction, using other access products available to provide the required level of short-term access rights.

4.2.1.6 Long-term access rights would be defined by a capacity limit only and would be fully shareable and tradable up to that capacity level.

4.2.1.7 The System Operator would be obliged to provide the level of long-term access rights booked at a stable long-term asset based price (e.g.TNUoS) and the User would be required to face the short-term access price (by utilising short-term access products or sharing transmission capacity) for output above this level. Given that the long-term access right is based on a capacity limit only and is fully shareable and tradeable up to that level, all Users would be liable to pay equivalent charges regardless of the use they made of those capacity rights.

4.2.1.8 It should be noted that if there is a time-lag between the required start date for the long-term access right and the delivery of the necessary transmission reinforcements then, in the period from the start of the access right to the delivery of the necessary transmission capacity, the User will be liable to pay a forecast of the short-term access cost (similar to the SO release of short-term access arrangements covered in CAP161, but potentially over a longer time period).

4.2.1.9 The Working Group envisaged that the System Operator would be incentivised to minimise operational and investment costs such that long-term access rights are provided at the minimum cost.

4.2.1.10 The Working Group discussed the example of a 100MW wind generator in Northern Scotland. The long-term access price (TNUoS) is £21.59/kW (2007/08 prices) and the short-term access price was assumed to be £65/MWh when there is a constraint (currently estimated at 15% of the year) and £0/MWh when there is no constraint. If the load duration of the generator is as follows:

Output level	Proportion of year
0%	0%
20%	50%
40%	20%
60%	15%
80%	10%
100%	5%

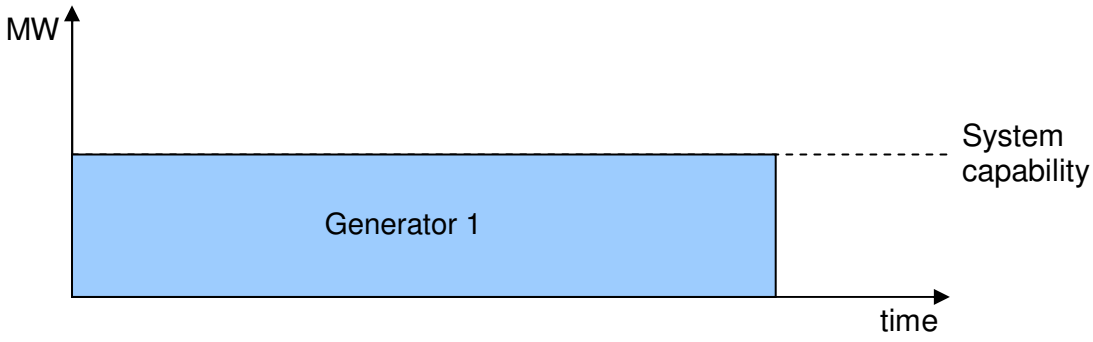
4.2.1.11 The generator could decide to book his full requirement as long-term rights in which case the full 100 MW would attract the TNUoS based charge. Alternatively, he could decide to book less as long-term and then secure his remaining rights on a short-term basis. The following provides a comparison of the potential costs of the various options available to the generator.

- Book 100MW of long-term access rights
  Annual access price = 100MW×1000×£21.59/kW = £2.159m
- Book 80MW of long-term access rights (and secure remaining 20MW as short-term)
  Long-term access price = 80MW×1000×£21.59/kW = £1.727m
  Short-term access price = 5%×15%×8760hours×20MW×£65/MWh = £85.41k (in a range £0 to £569.4k when correlation with other generators is considered)
  Total annual access price = £1.727m + £85k = £1.812m (in a range £1.727m to £2.296m)
- Book 60MW of long-term access rights (and secure remaining 40MW as short-term)
  Long-term access price = 60MW×1000×£21.59/kW = £1.295m
  Short-term access price =[5%×15%×8760hours×40MW×£65/MWh] + [10%×15%×8760hours×20MW×£65/MWh] = £341.6k (in a range £0 to £2.278m)
  Total annual access price = £1.295m + £341.6k = £1.637m (in a range £1.295m to £3.573m)

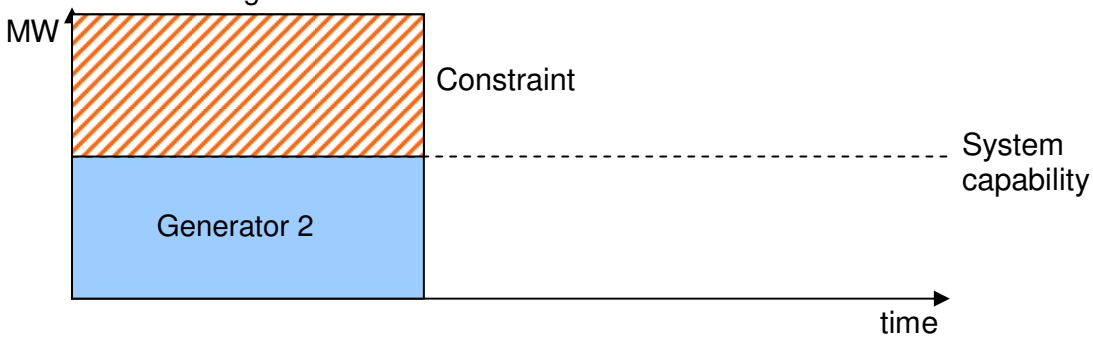
Scenario Two: SO makes derivatives from raw products based on additional information provided by the bidder

4.2.1.12 Under this scenario, Users would bid with a capacity and associated load duration based on their intended operating regime and their access right would be defined to be consistent with this. This essentially means that the System Operator is making "composite" access products based on the additional load duration information provided by the Users.

4.2.1.13 The Working Group discussed whether load factor or load duration should be submitted by Users. The Working Group agreed that load factor did not provide sufficient information to the System Operator and therefore load duration information would be required. This point was demonstrated with a simple example of two generators, each with a load factor of 50%. Generator 1 operates at 50% output for 100% of the year and therefore does not cause any constraint costs.



4.2.1.14 Generator 2 operates at 100% output for 50% of the year and therefore causes a significant constraint cost.



4.2.1.15 The Working Group agreed that it may not be appropriate to allow tailored access products of this type to be traded or shared due to the associated complexity.

4.2.1.16 The System Operator would be obliged to provide the level of long-term access rights described by the load duration booked at a stable long-term asset based price (e.g.TNUoS) and the User would be required to face the short-term access price (by utilising short-term access products or sharing transmission capacity) for output above this load duration.

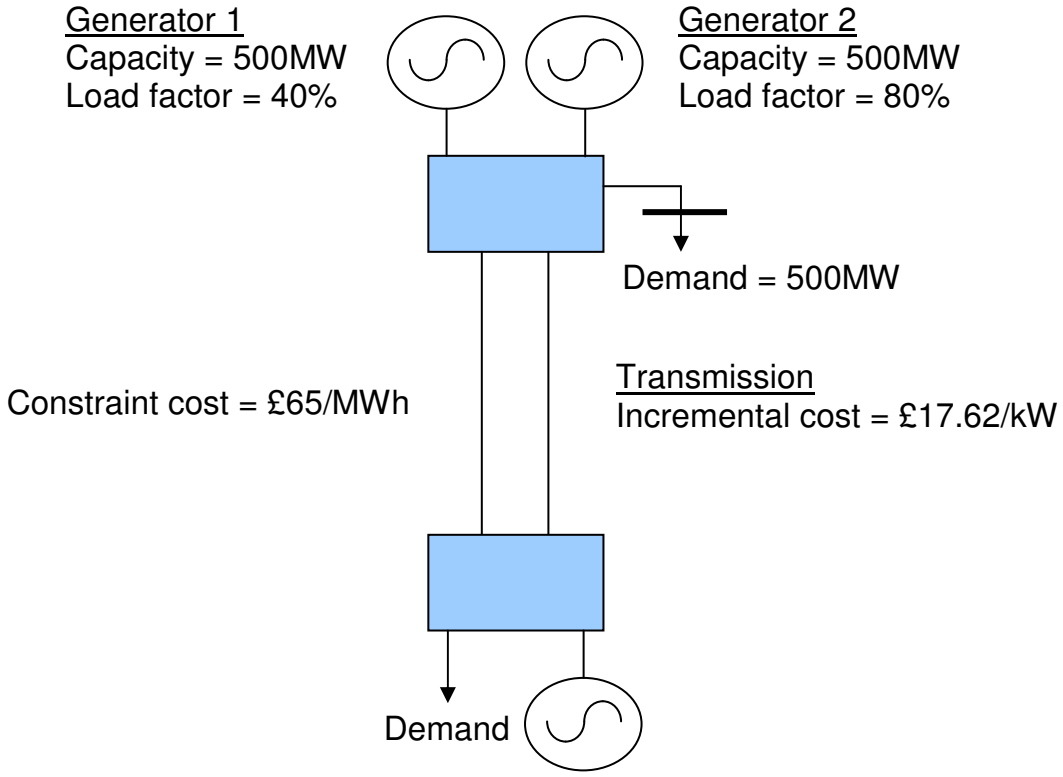
4.2.1.17 The Working Group discussed the practical difficulties associated with monitoring and charging as overrun any output above a long-term access right (when that right is defined as a load duration). The following options were discussed:

- Temporal approach
  Monitor generation output during the year and when the load duration purchased as a long-term right has been used, charge any additional output at the prevailing overrun price. This would tend to skew the Users exposure to overrun charges such that they were liable for the overrun charges that prevail at the end of a particular year.
- Average approach
  Monitor generation output during the year and when the load duration purchased as a long-term right has been used, charge any additional output at the annual average overrun price. This would address the issue identified above with a skew to the end of a particular year but a liability to pay an average charge may lead to inappropriate short-term incentives on the generator.
- User defined approach

For each half-hour, the User would specify in advance whether they would be using their long-term access right load duration profile or overrunning. Some Working Group members preferred this approach, with others concerned that the specification would have to be made sufficiently ahead of real time to prevent the generator reacting to the prevailing overrun price as this could invalidate the assumptions that were used to generate the Users access price.

4.2.1.18 The Working Group discussed the appropriate pricing of long-term access rights tailored by load duration restrictions. The Working Group agreed that, in principle, if the access restrictions accepted by generators lead to less investment being required on the transmission network, then a lower price for the long-term access rights is appropriate.

4.2.1.19 In order to investigate this issue further, the Working Group considered a simple idealised model which calculates transmission investment costs and constraint costs as a function of transmission capability. This model is described below.



4.2.1.20 The 500MW demand connected at the same substation as generator 1 and generator 2 has the following typical annual characteristic.

Demand level	Proportion of year
50%	53%
75%	33%
85%	11%
100%	3%

4.2.1.21 Generator 1 is assumed to be a wind generator with the following load duration.

Output level	Proportion of year
0%	0%

20%	50%
40%	20%
60%	15%
80%	10%
100%	5%

4.2.1.22 Generator 2 is assumed to be a conventional power station with five 100MW units. In order to estimate a load duration characteristic, a binominal distribution has been assumed. The Working Group noted that the use of a binomial distribution assumes that the running of each of the units is completely independent and that this is unlikely to be the case for a power station. The load duration determined based on the binomial distribution is shown below.

Output level	Proportion of year
0%	0%
20%	1%
40%	5%
60%	20%
80%	41%
100%	33%

4.2.1.23 In order to calculate a central view of the constraint cost for a particular transmission capability, the load duration characteristics for generator 1 and generator 2 are combined at each demand level in order to calculate a central view of the constraint volume in MWh. This constraint volume is multiplied by the assumed constraint cost of £65/MWh in this example in order to establish an annual constraint cost.

4.2.1.24 In order to calculate a transmission investment cost for a particular transmission capability, TNUoS prices (in £/kW) were assumed.

4.2.1.25 For the example shown in the diagram above, the minimum overall annual cost (central view constraint cost + investment cost) is given by a transmission capability of 650MW.

4.2.1.26 In order to understand the risk associated with the central view of constraint costs, the worst case (generator 1 and generator 2 output is positively correlated) and best case (generator 1 and generator 2 output is negatively correlated) were also calculated. For a transmission capability of 650MW, the central view of the annual constraint cost is £499k in a range £0 to £4.968m.

4.2.1.27 The Working Group noted the large cost range and therefore the difficulty in identifying the minimum cost transmission investment level, even when Users commit to a load duration characteristic. The Working Group noted that whilst this range may be acceptable when considering wind (where output is determined by weather conditions) and nuclear (with an expectation of baseload operation), it is much more challenging for mid-merit thermal generation.

4.2.1.28 The Working Group also noted the issues associated with setting prices on the basis of an ex ante forecast of generation running, particularly for generators that can control their output. The Working Group questioned whether this approach leads to an incentive for conventional generators to declare themselves available on windy days and therefore exacerbate constraint costs above those assumed when investment and pricing decisions are made. The Working Group discussed whether the use of composite products of this type therefore necessitated arrangements which replicate the sharing incentives associated with holding the raw products. The Working Group was unable to resolve this issue in the timescales available.

4.2.1.29 The Working Group considered the appropriate mechanism for pricing for this approach. The simple idealised model described above could be improved and extended to model the GB transmission network. This would allow generation prices to be calculated based on their impact on the minimum cost level of transmission investment. A majority of the Working Group believed that a significant amount of work would be required to develop this charging model before any conclusions could be reached as to whether it provided an appropriate approach to the pricing of long-term transmission access rights.

4.2.1.30 For the avoidance of doubt, the auction design envisaged under scenario 2 has been captured in the report as Working Group Alternative Proposal 1 (WGAP1) and not as part of CAP166 original, WGAA1, WGAA2 or WGAA3. Due to the issues raised above, a majority of the Working Group agreed that this alternative should not be progressed under CAP166.

4.2.2 Auction bidding process

4.2.2.1 It is proposed that the capacity and duration auction should be a dynamic auction, such that there would be several rounds of bidding which would enable bidders to have an opportunity to revise their bids based on the information revealed in the previous rounds of bidding.

4.2.2.2 Within the Working Group there was debate about whether the auction should be designed such that there would be a restriction on a User's ability to revise their bids for their capacity requirement in subsequent rounds of the auction.

4.2.2.3 The two options considered were:

- 'descending only' auction; or
- 'ascending and descending' auction.

4.2.2.4 The various advantages and disadvantages of each are considered below, but during the debate there was no consensus of opinion as to which was the preferred approach. A vote was held to determine the appropriate way forward and a majority of the Working Group agreed that an ascending and descending auction was the appropriate way forward for WGAA3.

Descending Only Auction

4.2.2.5 A 'descending only' auction would restrict Users from submitting a bid for their required volume of capacity in a subsequent round of the auction which was greater than that provided in the previous round.

4.2.2.6 This type of auction was suggested based on the assumption that the price indicated by National Grid (for both the short-run and long-run products) after each round of the auction would be lower (or remain the same) in subsequent rounds if the volume of capacity requested within that zone was reduced (or remain unchanged).

4.2.2.7 This would therefore provide any User with the ability to effectively 'fix' its bids for capacity in any round of the auction (given the prices provided by National Grid in response to those bids) based on the knowledge that in subsequent rounds of the auction the prices could only reduce (or remain the same).

4.2.2.8 A natural consequence of this type of auction means that Users would need to submit bids for their maximum capacity requirement in any year of the auction in the first round of the auction as they could only reduce their bid for capacity requirement in any subsequent round.

4.2.2.9 However, there is a potential disadvantage with this type of auction design such that the auction could result in a sub-optimal allocation of capacity. Assume that all Users will bid in the first round of the auction for their maximum capacity requirement in a particular year of the auction (given the descending nature of the auction). If this happens, it is likely that demand will be above system capability at various points on the system and this will manifest itself by National Grid publishing high short-run and possibly long-run prices following that round of the auction.

4.2.2.10 It is possible that several Users would then decide to reduce their volume requirement during the next auction round in response to the price signals such that demand is then greatly reduced. This could then lead to lower short-run and potentially long-run prices which Users would then not be in a position to signal any response to. If this were the case, the auction is unlikely to result in the "efficient" allocation of rights to Users and could end up leading to an under-allocation of long-run rights on the system.

Ascending and Descending Auction

4.2.2.11 An alternative to the 'descending only' model approach is to allow Users to be able to either increase or decrease their volume requirement during subsequent rounds of the auction.

4.2.2.12 This would overcome the disadvantage outlined above for a 'descending only' auction such that Users would be able to fully respond to the pricing signals after each round of the auction. This means that the auction should result in a more "efficient" allocation of rights to Users.

4.2.2.13 However, it should be noted that this would mean that prices would no longer only reduce or remain unchanged between auction rounds. Users may therefore need to be more active in each round of the auction.

4.2.2.14 It was suggested that in order to ensure that Users can take a view on the maximum price they could be exposed to for access rights through the auction, if an 'ascending and descending' type of auction was proposed, then there should be a similar restriction to that proposed for the 'descending only' auction of requiring Users to submit their maximum capacity requirement in any year of the auction in the first round of the auction.

4.2.2.15 The main disadvantage of allowing Users to change their bid volumes either up or down in subsequent auction rounds is that the auction would be likely to stay open longer and could effectively 'time-out' on the last scheduled day.

4.2.2.16 In order to reduce the likelihood of this, stability criteria will be developed along similar lines to those which were suggested for the price-based auction, i.e. such as based on changes to the allocation of transmission access rights between two or three successive rounds falling within a pre-defined tolerance (in MW) or based on the price of those allocated access rights in two or three successive rounds being within a pre-defined tolerance.

4.2.3 Inclusion of buy-back as a parameter of the auction

4.2.3.1 As part of the debate around auction design, it was noted that in any auction which features ex-ante pricing of the short-run product, where there is effectively an 'over-allocation' against system capability, there was the possibility that Users could respond by effectively factoring that short-run price into any bid price they may submit in the Balancing Mechanism.

4.2.3.2 One way of mitigating such behaviour occurring would be to design the auction such that Users would be required to also submit a buy-back price as part of any bid for capacity. This price would then effectively cap any bid price that Users could then submit and hence lessen the possibility of this type of behaviour occurring.

4.2.3.3 The inclusion of such a buy-back price could then be used by National Grid in the calculation of the appropriate price which would be offered for the short-run product.

4.2.3.4 There was significant debate within the Working Group as to whether the inclusion of a buy-back price as part of the auction was the appropriate way to proceed. One of the main concerns around the inclusion of any cap on prices that Users could submit was that it could lead to a distortion of the prices within the Balancing Mechanism.

4.2.3.5 Additionally, some Working Group members suggested that it would be very difficult for certain Users to be able to provide a buy-back price several years forward and therefore concluded that this should not be a requirement of the auction. Although to mitigate this impact the Working Group noted that a buy-back price perhaps linked to a market price or fuel price might be worthy of further investigation, but that in the timescales available for assessment this option was not pursued any further.

4.2.3.6 However, at a principle level, if a User is prepared to provide such a buy-back price at the time of bidding this is useful information to the System Operator which should be of value and therefore rewarded via the pricing signals provided.

4.2.3.7 One way of addressing this could be to design the auction such that the submission of a buy-back price is optional, but that the price offered to the User would be affected by whether a buy-back price is offered or not.

4.2.3.8 If a User is willing to provide a buy-back price at the time of bidding for access rights, then that User would be offered an ex-ante price for its portion of short-run rights. Conversely, if a User is unwilling or unable to provide a buy-back price, then the User concerned might only be offered a higher fixed ex-ante price for the short-run product than a Party who did offer a buy-back.

4.2.3.9 In order to determine buy-back price, it was noted by the Working Group that a tender for balancing services contracts across all existing and potential Users in a zone could be approached prior to the commencement of an auction. If Users were willing to offer to reduce a proportion of their output for a fixed price or potentially agree to the installation of an intertrip or other restriction on output, then the costs of these balancing services could form the basis of the short-run priced access released into the forthcoming auction rounds. This, the group felt would offer the most competitive arena in which the concept of a buy-back price could be explored as it would not limit competition amongst those parties in the auction concerned but all parties within a zone. It was also noted that for certain zones there may be either no or highly limited competition in which case such a tender for balancing services could not be expected to function correctly. In such cases it would be at the discretion of the GBSO to offer terms for connection to Users that does not include a buy-back price, but rather a transmission related agreement (TRA). It was further noted by the Working Group that any such offers incorporating a TRA could be referred to the Authority by a User if that User felt the assumptions made by the GBSO regarding a lack of proper competition were invalid.

4.2.3.10 For the avoidance of doubt, the integral use of buy-back bids in the auction process has been captured in the report as Working Group Alternative Proposal 1 (WGAP1) and not as part of CAP166 original, WGAA1, WGAA2 or WGAA3. Due to the issues raised above, a majority of the Working Group agreed that this alternative should not be progressed under CAP166.

4.2.4 Pro-ration

4.2.4.1 One of the main differences between any Price based auction type (such as that proposed as WGAA1 or WGAA2) and a Capacity and Duration model (such as WGAA3) concerns the availability of rights to be auctioned.

4.2.4.2 Under the proposed Price based auction proposals, National Grid would indicate to Users the availability of system capability over a number of years (reflecting any planned investment) and that capacity would be auctioned to the highest priced bids first until it was fully allocated.

4.2.4.3 In the event that demand for capacity exceeded capability and the Users' bids could not be differentiated on price (i.e. several Users all bid the same price), then it was proposed that the Users' bids would be subject to simple pro-ration in order to ensure that the allocation of capacity was not above the system capability. Any requests for capacity above system capability would not be allocated.

4.2.4.4 Under the proposed Capacity and Duration model, Users are able to bid for any amount of capacity that they require in any year of the auction and National Grid will make that capacity available to the User. This means that in the period before the TOs are able to provide extra capacity on the system by incremental investment, there is likely to be an 'over-allocation' of rights when compared to system capability.

4.2.4.5 When such an 'over-allocation' occurs, under WGAA3, it was suggested that Users would be allocated a certain proportion of their rights based on the long-run price and the remainder of their capacity based at the short-run price.

4.2.4.6 Within the Working Group there was significant debate about how the actual physical capability could be allocated 'fairly' between competing Users especially given the interacting nature of the transmission system, as the prices paid for the different rights could be quite diverse.

4.2.4.7 In order to more fully consider any issues which pro-ration may cause, as an approximation to considering each individual node's influence on the capability of the system, the system was considered in terms of boundary capability. If there are interacting boundaries (such as nested boundaries) which all need pro-rating, the order in which the pro-ration is applied will affect the resulting allocation of capacity to the individual Users concerned.

4.2.4.8 The simplest methodology which was discussed was to consider all the boundaries on the system for which there was an over-allocation and then apply the lowest pro-ration ratio to all Users' bids that would be affected by that particular boundary and then repeat for each boundary.

4.2.4.9 Whilst this is relatively simple to apply, in the case where there are nested boundaries on the system, this can lead to an under-allocation of rights against the nested boundaries behind the one used in the pro-ration.

4.2.4.10 In order to overcome this shortcoming, it was proposed that a more 'equitable' manner for pro-rating on a system with nested boundaries would be to rank the boundaries such that the one with the highest 'over-allocation' would be considered first, then the next and so on until no further pro-ration was necessary.

4.2.4.11 Pro-ration is then applied at the highest ranked boundary first such that those Users affected by that boundary's pro-ration would have their allocation of rights carried out first such that their bids are pro-rated back to the boundary capability. Those allocations would then be fixed when the reassessment of pro-ration at any subsequent boundaries is made. An example of how this type of pro-ration would work is provided in Section 5 of the report when the details of WGAA3 are considered.

4.2.4.12 When examples of how this could work were discussed within the Working Group, it was felt that any form of pro-ration which did not consider the particular characteristics of the various Users could mean that rights may not be allocated in the most 'efficient' manner.

4.2.4.13 Further consideration was given to this issue and it was suggested that a particular User's load factor or load duration could be used in order to arrive at a more 'efficient' allocation. This is an area of work which may benefit from further assessment.

4.2.5 Effect of Pro-Ration on Current Transmission Access Baseline

4.2.5.1 When considering any methodology for pro-rating of Users' requests for capacity, it is clear that any such pro-ration is highly dependent on the particular system capability which has been assumed (as it ultimately affects the allocation of rights between the long-run priced capacity and short-run priced capacity).

4.2.5.2 During the discussions which took place when the Working Group considered the price based auction, the boundary which provoked the most discussion was the Cheviot boundary.

4.2.5.3 As was shown in paragraph 4.1.6.49, there is currently an 'over-allocation' at that boundary over its actual physical capability. The discussions which were previously held led to a suggestion that for the price based auction, the boundary capability should be set at the 2011/12 capability value of 3300MW.

4.2.5.4 Whilst there was some debate surrounding boundary capabilities to apply, especially at the Cheviot boundary, there was no conclusion of the appropriate level to use. It is therefore suggested that the derivation of the boundary capabilities to be used in the capacity and duration type model should be set out within the auction methodology statement. The impact of the Cheviot boundary capability (in particular the treatment of the derogation) agreed as part of the methodology on the long-term access rights held by Users is demonstrated in further detail below.

4.2.5.5 A spreadsheet was derived to explore in more detail the resulting pro-rated allocations of capacity using the methodology proposed in paragraph 4.2.4.11 above for all the boundaries from B6 northwards. This spreadsheet was also used to examine the effect of boundary capabilities on the results of such pro-ration.

4.2.5.6 Data from the 2008 SYS was used. For 2008/9 the following requirements for capacity have been assumed:

Type of Generation	Zones	Requirement (MW)
Pumped storage	Z1	300
Hydro&wind	Z1	562
CCGT	Z2	1524
Hydro&wind	Z2	44
Hydro	Z3	226
Pumped storage	Z3	440
Wind	Z3	0
Hydro	Z4	168
Wind	Z4	104
CHP	Z5	123
Coal	Z5	2304
Nuclear	Z6	2410
Wind	Z6	687
Other (incl cockenzie)	Z6	1352

4.2.5.7 Using this data and associated 2008/9 boundary capabilities, plus zonal demands results in the following pro-ration factors at the various boundaries:

Boundary	B1	B2	B3	B4	B5	B6
Capability plus demand	931	2614	266	3193	5430	8309
Total requested	862	2430	666	3368	5795	10244
Pro-ration	100%	100%	40%	95%	94%	81%

4.2.5.8 As can be seen, the most 'over-allocated' boundary is B3 (40%), hence this would be the first boundary to be pro-rated.

4.2.5.9 Applying this 40% pro-ration to all the zones affected by B3 (only Z3) results in the following allocations:

Type of Generation	Zones	Requirement (MW)	Allocation (MW)	% of Requirement
Hydro	Z3	226	90	40%
Pumped storage	Z3	440	176	40%
Wind	Z3	0	0	n/a

4.2.5.10 Fixing the allocations for the Z3 Users results in the new remaining boundary pro-ration factors:

Boundary	B1	B2	B4	B5	B6
Remaining capability (plus demand) to allocate	931	2614	2926	5164	8043
Total requested	862	2430	2702	5129	9578
Pro-ration	100%	100%	100%	100%	84%

4.2.5.11 As can be seen, the most 'over-allocated' boundary now is B6 (84%), hence this would be the next boundary to be pro-rated. Once B6 has been pro-rated, no further pro-ration is necessary and therefore the pro-ration process is complete. This results in the following allocations:

Type of Generation	Zones	Requirement (MW)	Allocation (MW)	% of Requirement
Pumped storage	Z1	300	252	84%
Hydro&wind	Z1	562	472	84%
CCGT	Z2	1524	1280	84%
Hydro&wind	Z2	44	37	84%
Hydro	Z3	226	90	40%
Pumped storage	Z3	440	176	40%
Wind	Z3	0	0	n/a
Hydro	Z4	168	141	84%
Wind	Z4	104	87	84%
CHP	Z5	123	103	84%
Coal	Z5	2304	1935	84%
Nuclear	Z6	2410	2024	84%
Wind	Z6	687	577	84%
Other (incl cockenzie)	Z6	1352	1135	84%

4.2.5.12 This means that the remainder of the Users' requirements for capacity would be provided by priced based on the short-run price and would be charged for either on a MWh or a MW basis by the particular Users.

4.2.5.13 If a higher capability for boundary B6 (such as the 2011/12 value of 3300 MW) was used, then again B3 would be the most 'over-allocated' boundary and would therefore be pro-rated first, but the pro-ration at B6 would not be so high (95% rather than 84%). This would result in the following allocations at the long-run price:

Type of Generation	Zones	Requirement (MW)	Allocation (MW)	% of Requirement
Pumped storage	Z1	300	286	95%
Hydro&wind	Z1	562.26	536	95%
CCGT	Z2	1524	1454	95%
Hydro&wind	Z2	44	42	95%
Hydro	Z3	225.82	90	40%
Pumped storage	Z3	440	176	40%
Wind	Z3	0	0	n/a
Hydro	Z4	167.5	160	95%
Wind	Z4	104	99	95%
CHP	Z5	123	117	95%
Coal	Z5	2304	2198	95%
Nuclear	Z6	2410	2299	95%
Wind	Z6	687.4	656	95%
Other (incl cockenzie)	Z6	1352	1290	95%

4.2.5.14 Again the remainder of the Users' requirements for capacity would be priced at the short-run price (paid for either on a MWh or a MW basis by the particular Users).

4.2.5.15 However, it should be noted that any increase to the assumed boundary capability would result in a greater proportion of the Users' requirements being priced on a long-run price basis and therefore a lower amount at the short-run price than before. This means that the constraint costs which resulted from any such 'over-allocation' would be socialised rather than targeted at particular Users.

4.2.5.16 The analysis has been repeated using the corresponding data for 2014/15 (boundary data, demand and generation). Again this results in B3 being the most 'over-allocated' boundary (this time 45%) which would then be followed by B6 (65%). In this case the allocations at the long-run price would be:

Type of Generation	Zones	Requirement (MW)	Allocation (MW)	% of Requirement
Pumped storage	Z1	300	192	64%
Hydro&wind	Z1	2103	1349	64%
CCGT	Z2	1524	977	64%
Hydro&wind	Z2	157	100	64%
Hydro	Z3	226	102	45%
Pumped storage	Z3	440	198	45%
Wind	Z3	278	125	45%
Hydro	Z4	168	107	64%
Wind	Z4	408	262	64%
CHP	Z5	123	79	64%
Coal	Z5	2304	1478	64%
Nuclear	Z6	2410	1546	64%
Wind	Z6	3647	2339	64%
Other (incl cockenzie)	Z6	1352	867	64%

4.2.5.17 This shows that for this set of data, a lower proportion of Users' rights would be priced at the long-run price and therefore a significantly higher proportion of Users' rights would be priced at the short-run price.

4.2.6 Validation Tests

4.2.6.1 The Working Group considered that where final capacity allocation priced at the LRMC price was pro-rated based on the capacity a User bid in the auction, there could be an incentive to bid above the capacity a User actually required in order to receive a greater share of the pro-rated capacity. This could be a problem if the short-run price was on a usage (£/MWh) basis rather than a capacity (£/MW) basis since it would mean that the User could avoid being exposed to the short-run price.

4.2.6.2 Over booking is only a problem when Users are prorated, as once the capacity has been built the User will pay the full LRMC charge for the bid capacity. The purpose of a validation test is to persuade Users to only bid up to their actual capacity requirement in the auction. The Working Group noted that Users' bids would be limited to their LCN. This substantially reduced the opportunity for Users to overbook. The Working Group also noted that any system that involved the removal of User's rights but still obliged them to pay for them may be unlawful as it may amount to a deprivation of property rights. The sanctions developed around the validation test (described below) are therefore carefully constructed so as to either remove any right and the associated liability or allow the User to keep the right and the liability.

4.2.6.3 New Users would be able to prove their generating capacity by providing the standard information which is collected through comissioning. New Users capacity would need to be greater than or equal to their capacity bid in the auction. The existing CAP150 process would be utilised to reduce New Users pro-rated capacity should it emerge that a Power Station under construction was not able to fully utilise any auction procured pro-rated capacity.

4.2.6.4 The generation capacity of existing Users would be validated firstly by reviewing the output of their generation units during the year. If this led to suspicion that an over booking had been made an independent engineer would be requested to review the capability of the generating units to generate the bid capacity. If the independent engineer considered that an over booking had been made capacity would be reduced although the generator could refer the reduction to the Authority. Finally a validation run could be requested and the generator would be expected to demonstrate their ability to generate up to the bid capacity.

4.2.6.5 The group noted that it would be difficult for some units to demonstrate their maximum output on request due to their technology type. For example, wind generators would only be able to generate at their maximum capacity under certain wind speeds. This would need to be taken into account during the validation process.

4.2.6.6 If a User failed the validation test they would still be liable to pay for their bid capacity in years where they were not prorated. In years where their capacity had been prorated based on a inflated figure the pro-ration would be repeated using their actual validated capacity. Any capacity priced at LRMC released through this process would be reallocated to Users who had taken part in the original auction.

4.2.6.7 The Working Group noted that the concept of a Validation Test in effect shifted transmission access from being a right to generate up to a certain capacity to an obligation to be able to in the pro-rated period. Although in times of access scarcity the benefits of not allowing capacity that cannot be used to be hoarded were also recognised by some Working Group members,

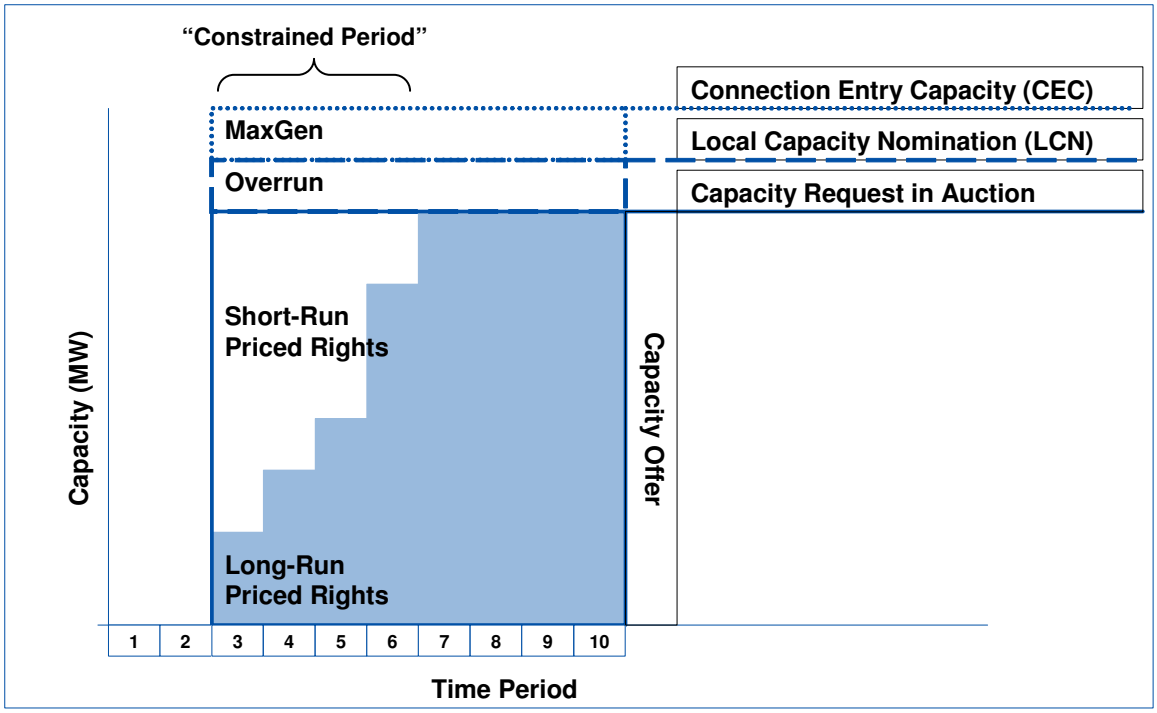
4.2.6.8 Working Group members also noted that the concept of a validation run still had its pitfalls in that it would not be able to differentiate between a User who had chosen not to buy fuel and run an otherwise fully operational generating unit (who under the proposed rules would not have capacity withdrawn) or a User who had chosen not to repair a broken down generating unit (whose capacity would be withdrawn under the above validation test rules).

4.2.6.9 The practical impact of the CAP150 test on new Users was also briefly discussed by the Working Group. It was concluded that should a new User experience delays in the construction and or commissioning of its new power station then CAP150 would remove any right to use pro-rated capacity in the years following the original Completion Date up until its new Completion Date for the Power Station. However in years subsequent to the new Completion Date it would retain its access rights (and liabilities to pay for them) unless it moved beyond its "back-stop date" in its construction agreement in which case its agreement may be terminated, it would lose all access rights and also become liable for cost reflective final sums.

4.2.7 Short-Run Pricing Issues

4.2.7.1 The key to the capacity duration Working Group alternatives is the period (the "constrained period") where Users signal a requirement for transmission system access but where the infrastructure to deliver that cannot be delivered due to the practicalities of constructing transmission system assets. It is in this key period that existing infrastructure may be able to be used where for instance other generators that have rights to use it are not using it, or through managing the output of generators operationally to ensure that the transmission system remains within operational SQSS planning standards.

4.2.7.2 The key then to signalling to Users the costs of accessing the system prior to the date that a Transmission Owner is physically able to deliver the assets is the forecast of the short-run operational costs.



4.2.7.3 The Working Group discussed the options for the pricing of the short-run access rights seen in the "Constrained Period". Broadly speaking they fell into the following categories:

4.2.7.4 **Option 1a – Commoditised (£/MWh):** In this option the GBSO would derive a price reflective of the forecast operational costs associated with releasing access rights in excess of those capable of being provided by the physical assets. This price would be recalculated at the end of each auction round and is set at the short-run price that prevails in the last auction round before the auction closes. Users with access rights priced at this short-run price would then be locked into this short-run price for as long as they hold short-run price access rights (i.e. up until transmission system reinforcements have been constructed). Users would then have to pay this price for every MWh of output above their long-run priced access rights in settlement periods where they are contributing towards an export constraint.

4.2.7.5 **Option 1b – Commoditised (£/MWh):** The price in option 1b would be calculated exactly as per the rules outlined in option 1a except that there would be further "re-openers" that may see the short-run price re-calculated following the close of the auction in which the rights were allocated. Such "re-openers" would include:

- The termination of a Bilateral Agreement by a User who holds Short-Term priced access rights. (NB only the short-run price payable by Users who secured short-term priced access in the same auction as the terminating party would be affected);
- Changes in Power Prices (this could either be through defining a threshold or through indexing the short-run price to a pre-defined power-exchange index;
- Changes in System Operator costs – e.g. through an index to BSUoS charges
- Routine annual / 6-monthly re-forecasts of short-run prices to account for changes in observed costs which would account for all of the above "re-openers".

4.2.7.6 **Option 2 – Commoditised (£/MWh):** The price calculation in option 2 is similar to those outlined for option 1a and 1b above. However in this case a range of scenarios of expected generation output would be used to construct a forecast price for varying depths of constraint. That is to say Users would be locked into a price curve for the short-run costs and depending on the depth of the constraint; Users would pay a varying price. This curve would be generated after every round of the auction and would be fixed for all Users who secure short-run priced access in that auction at the curve generated for the final auction round. There may be scope to incorporate "re-openers" in line with those proposed for option 1b above; however given the more dynamic nature of the price curve in this option, it may be less necessary to incorporate such re-openers in this option.

4.2.7.7 **Option 3 – Capacity Based (£/MW):** The price calculation in option 3 is significantly different to that outlined above for options 1a, 1b and 2 above being on a capacity basis rather than a commoditised basis. The price calculated in this option would remain as two prices for short and long-run priced capacity. National Grid would then assess the volumes of capacity that could be released and the associated investment (LRMC) and operational (SRMC) costs of doing so with the objective being to maximise capacity release for the lowest overall cost. This cost would then be converted to a dual price (an LRMC element and an SRMC element) for capacity at a node and these would be the prices offered to Users through each round of the auction. This process would be repeated in each round until such time as the auction closes.

4.2.7.8 Each of the above options has its own benefits and disadvantages. Four key high level issues emerge:

1. The ability of the System Operator to accurately forecast the constraint costs into the future;

2. The real time incentives that the options give to holders of short-run rights when an export constraint is active;

3. The effectiveness of fixing an ex-ante price when real-time prices are variable; and,

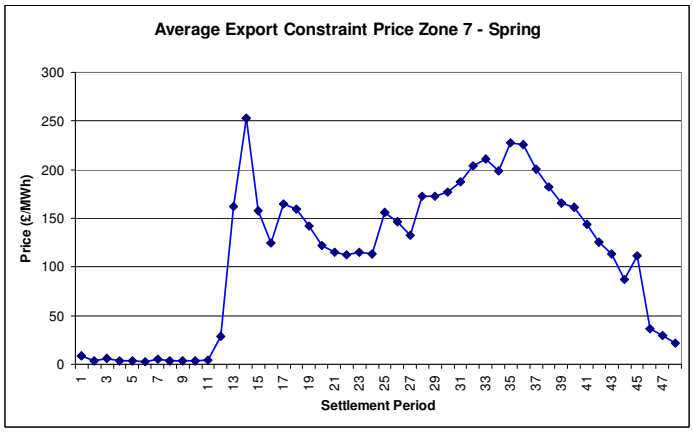
4. The potential effects that pricing may have on the wider market for energy in the Balancing Mechanism

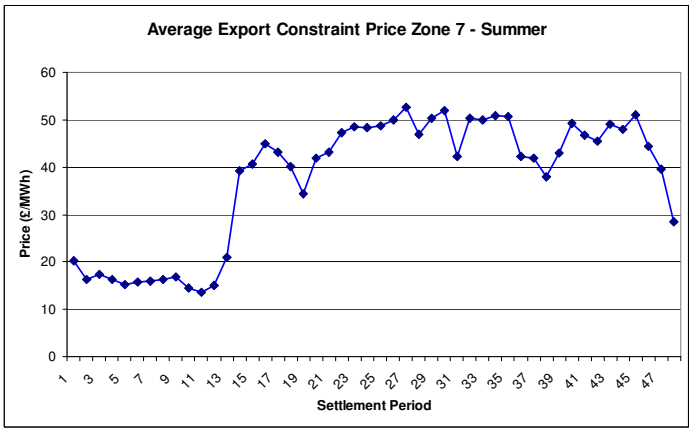
Forecasting

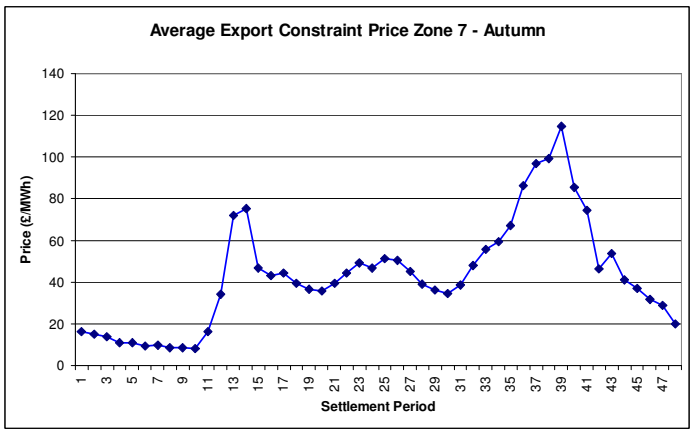
4.2.7.9 Of the above options option 1a and 1b are reliant on historic data analysis with options 2 and 3 reliant on a much more complex forward looking model.

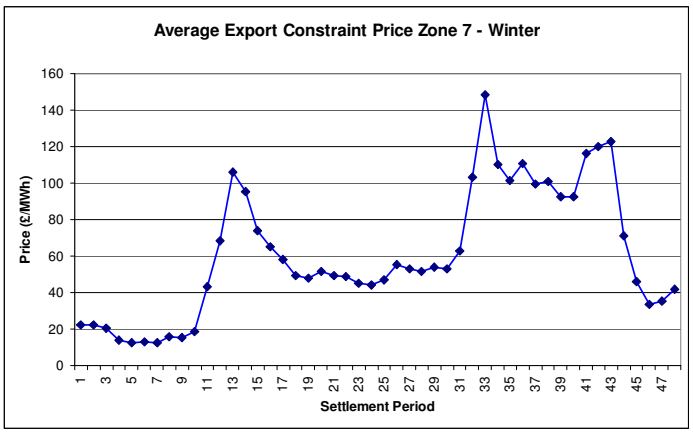
4.2.7.10 Historic analysis clearly presents much less of an issue than forward looking analysis and National Grid was able to present to the Working Group analysis of the historic costs of constraints across Great Britain, split according to the zones developed by Working Group 1 for the purposes of assessing the short-term access modifications CAP161-164. This produced both a flat average price of export constraints by zone and also a daily profiled price of export constraints per zone, in each case when the constraint was active. Sample results of this analysis are presented below

Sample Daily Profiled Prices: Zone 7: Cheviot Boundary









Total Figures (1 April 2005 – 31 March 2008)

SEASON	Total Volume (MWh)	Total Cost
Spring	149,150	£21,395,820
Summer	390,805	£16,520,774
Autumn	288,278	£14,509,280
Winter	301,094	£21,763,138
Total	**1,129,326**	**£74,189,012**

3 Year Average Price	**£65.69/MWh**

Sample Flat Charge: Great Britain:

Zone	Total Volume (MWh)	Total Cost (£)	Volume Weighted Average Price (£/MWh)
1	1,606,779	£95,982,158	£59.74
2	1,606,920	£95,985,795	£59.73
3	1,807,549	£103,386,633	£57.20
4	1,288,003	£81,671,636	£63.41
5	1,495,720	£89,962,616	£60.15
6	1,501,847	£90,146,617	£60.02
7	1,129,326	£74,189,012	£65.69
8	1,354,091	£82,844,594	£61.18
9	197,465	£7,586,168	£38.42
10	197,687	£7,553,142	£38.21
11	206,719	£7,540,058	£36.47
12	185,285	£6,880,401	£37.13
13	305,259	£12,238,419	£40.09
14	272,637	£9,886,925	£36.26
15	185,938	£7,630,668	£41.04
16	162,742	£4,820,093	£29.62
17	234,633	£8,309,068	£35.41
18	159,684	£4,522,586	£28.32
19	11,864	£536,539	£45.22
20	114,493	£2,626,964	£22.94
21	1,547	£159,021	£102.79
22	158,894*	£8,303,705*	£52.26*
23	3,577	£102,812	£28.74
24	23,783	£3,245,336	£136.46

4.2.7.11 Such prices would form the basis of the charges under options 1a and 1b.

4.2.7.12 The proposed pricing methodologies for options 2 and 3 would be necessarily more complex and would require the development of a significantly more complex model. Such a model would require modelling of the entire GB Transmission System and the generation and demand scenarios around it. Ultimately the methodology and the model that would be required would need to be developed under charging governance, however the Working Group noted the high degree of complexity of such a model.

4.2.7.13 The Working Group also noted the general sensitivity of constraint costs to a number of external variables and the fact that although a central forecast figure can be achieved the standard deviation around this model is large and as such the volatility of such a forecast is similarly high (see the section **4.2**). This is true even for forecasts in year-ahead timescales and the accuracy and uncertainty of years further into the future could be expected to be significantly worse.

Real-Time Incentives on Users

4.2.7.14 All of the volume-duration models have the concept of a fixed ex-ante price, however whether this should be levied on a £/MWh or £/MW basis remains an issue to be resolved through a separate charging consultation. The Working Group did however note that the £/MWh price did have the incentive of discouraging generation when the constraint was active, whereas the £/MW price, being effectively a sunk cost across the year did not have this property. It was noted by the Working Group that the £/MW charge could be structured such that it is levied only when the constraint is active and perhaps only when Users are generating using their short-run priced access in an attempt to retain some form of pricing signal on the User. Ultimately however it was noted that the development of all pricing options will be a matter for an accompanying charging consultation.

Effectiveness of an ex-ante price

4.2.7.15 It was noted that setting an ex-ante price for short-run access based on the forecast cost of constraints in a given year may not be effective given that this price could immediately be factored into real-time prices by Users. Thus if a User expected to be charged £80/MWh if a constraint in its zone were to be active and generates using short-term access rights, then the User may price any Bids in the Balancing mechanism at -£80/MWh to ensure that if it is constrained then it will recover its costs.

4.2.7.16 Clearly there is still the risk to the User that it may not be constrained back as other more economic options are available, however it is clear to see that the potential for BM prices to be significantly impacted remains.

4.2.7.17 One potential avenue that could be explored to prevent this would be to require a compulsory fixed buy-back price to be tendered in advance of the final price of constraints becoming known and to factor this into the pricing assessment. However as discussed in section 4.2.3 this approach is not without its own issues.

Impact on the BM Energy Market

4.2.7.18 The above potential impact on BM prices could also have the potential to impact onto the BM energy market as Users price their Bids based upon an expectation that they may incur short-run charges when a constraint is active. The likelihood however is that much of the time a constraint will not be active but the BM price will remain driven by system costs rather than energy costs. Thus there is significant potential for the energy market to become significantly impacted by a perception of system costs rather than the fundamentals of the energy market itself.

Working Group Consensus

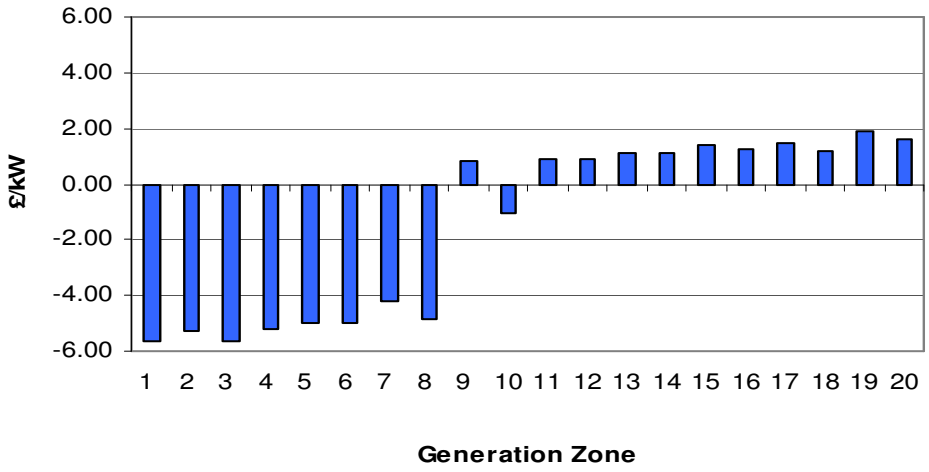
4.2.7.19 The Working Group reached the consensus position that the preferred pricing approach would be to adopt a £/MWh price that would be charged when a constraint was active. This approach, the Working Group felt, would provide the most appropriate signal to minimise generation that utilises short-run priced access and would also be most easily priced into the energy market decisions to be taken by Users when considering whether to generate using short-run priced rights. The Working Group agreed that the options should be developed in further detail under the charging governance arrangements.

4.2.8 Long-run Pricing Issues

4.2.8.1 The Working Group considered that the price for the auctioned capacity which was based on infrastructure would be priced based on the long run marginal cost (LRMC) calculated by the transport model. Under the current charging arrangements this is the locational element of TNUoS. The details of how this charge will be calculated will be consulted on under the charging governance. However the Working Group discussions did cover the following points.

4.2.8.2 The group noted that some boundaries on the current system were over allocated. Currently generation above system capability is included in the transport model and charged TNUoS. Under the new model capacity above system capability would be priced based on the short run costs. To avoid double counting this capacity would need to be removed from the transport model.

4.2.8.3 Analysis was performed to show the effect on TNUoS tariffs if generation capacity is pro rated behind an over allocated boundary. The analysis used the Scotland England boundary. The results showed a significant change in TNUoS tariffs. This difference between including over allocated capacity and not including over allocated capacity is described in the following chart. Tariffs reduced above the boundary where generation had been prorated.



4.2.8.4 The group also acknowledged that there would be some uncertainly in calculating a cost reflective price for the capacity into the future where National Grid were unsure of what changes would be made to the network. The condition five analysis was reviewed and it was considered that generation and demand information had a relatively more significant effect on the charges compared with network developments. Under the auction arrangements improved data should be collected regarding generation connections and closures.

4.2.8.5 The Working Group agreed that these issues would benefit from further development under the charging governance arrangements.

4.2.9 Impact of Capacity / Duration Auction on TNUoS Charging

4.2.9.1 As noted above in the discussions around the price based auction, it is important to note at this stage that there are some differences between the prices that emerge from an auction of this type compared with those from the present TNUoS methodology.

4.2.9.2 Under a Capacity / Duration auction ultimately the costs of the transmission network will be reflected in the Long-Run Marginal Cost element of the access charge. In the short term however the price charged to Users for access rights will also be influenced by the degree of demand for transmission access rights over the capability of the local transmission network to provide them.

4.2.9.3 These Short-Run Marginal Costs effectively offset BSUoS charges in constrained zones as they seek to charge ex-ante National Grid's forecast of operational costs on a given constrained zone (i.e. a zone that has an over-allocation of access rights in the short term). It is therefore envisaged that such short run marginal revenues would be offset against the other cost elements of BSUoS charges.

4.2.9.4 Finally the likelihood remains that two neighbouring generators who procure their transmission access rights in different auctions will end up paying different charges, although it is likely that in the long-run these will differ only marginally. The short-run costs might be very different as the earlier generator benefits from any "spare" capacity in the zone, which of course has been fully utilised by the time the second generator applies. As the long-run costs are fixed for the duration of the access booking there may be differences in treatment of the two generators as assumptions about future year's transmission investment are refined based upon demand for capacity.

4.2.10 Existing Transmission Related Agreements

4.2.10.1 The subject of the existing transmission related agreements within existing Bilateral Agreements between National Grid and Users was briefly discussed by the Working Group. Given the potential for the interaction between these TRAs and the auction through the calculation of short-run prices it was noted that this was an area that required further detailed consideration should WGAA3 ultimately be implemented.

4.3 Working Group Alternative Proposal 1 (WGAP1)

This Working Group Alternative Proposal was developed as part of the discussions around WGAA3 in the time extension granted to the Working Group. Ultimately the proposal was not adopted as a formal Working Group amendment as the Working Group felt that there were still significant areas where it needed to be developed further (specifically how a load duration and buyback price would be used in practice) and as such was not in a sufficiently fit state to be formally progressed. The development of the proposal as it stood at the final Working Group meeting held on 27 January 2009 is included here for completeness. It does not form part of CAP166.

4.3.1 High level Design Concept

4.3.1.1 The Capacity and Duration Model proposed in WGAP1, is an annual auction based process designed to discover the nodal and/or zonal transmission charges. Users would bid an entry access capacity requirement based on a capacity in MW and duration in years at a node. In addition Users would also bid an annual load duration and an optional buyback price.

4.3.1.2 National Grid as GBSO would determine a single nodal ex-ante price of access at a node accounting for the long-run costs of investment in transmission infrastructure and the forecast short-run costs of constraints based on the entry access capacity requirement, the submitted load duration and the buyback price at that node. Such a price would be calculated for each year of the requested capacity booking and fixed at that level should the User be successful in the auction.

4.3.1.3 Following each auction round each User would receive a volume of access rights equal to that which it had bid for and the price at which it could procure these rights. It would also be tied contractually to it's buyback price (which in practice would cap the User's Bid submissions into the Balancing Mechanism) and its submitted load duration for the entire duration of its booking.

4.3.1.4 Users would have the opportunity to accept the charges at the node with the prices "fixed" or known for the duration of the bid, subject to adjustments that may occur as a results of other Users varying bids at their nodes in subsequent auction rounds. These adjustments should only result in costs that reduce for Users that have accepted the charges at a node.

4.3.1.5 In this model an entry node means a point of connection for a power station onto the transmission system. These points of connection are currently represented by the Transmission Entry Capacity (TEC) in a Bilateral Connection Agreement (BCA).

4.3.1.6 The high level design concept, for WGAP1, would include the ability for parties to overrun their firm capacity allocation up to the level of the physical connection capacity (however defined).

4.3.1.7 In the first auction to be run according to these principles all existing physical access rights would be withdrawn and then re-allocated through that first auction. In future rounds any access rights that had already been allocated via previous auctions would not be "re-auctioned" in effect meaning that future auctions would be for incremental capacity only.

4.3.1.8 This auction process is materially different to WGAA3 as it offers a composite of short-run and long-run products that balances both the ability of the transmission owners to construct transmission assets and also the economic balance between operational and asset related costs given a User's signalled intention to generate (through it's load duration submission).

4.3.2 The Auction Process

4.3.2.1 As part of WGAP1 the multi round auction process would be a based on Users bidding a capacity (MW) and duration (years) for each node where capacity is required. In addition Users could also submit their predicted load duration(s) for the period over which they require access rights and a buyback price.

4.3.2.2 Users who feel unable to directly specify their load duration for the given period would be defaulted to a 100% load duration – i.e. it would be assumed that they would be generating at full output for every settlement period in each year they have bid for.

4.3.2.3 Users could also choose to submit a buyback price alongside their volume, duration and load duration. Should a User choose not to submit a buyback price then it will lose out on any benefits associated with submitting that price.

4.3.2.4 Due to the additional parameters that are capable of being tendered into the auction and their likely interactions Users are free to flex them both up or down between each round in the auction.

4.3.2.5 As in WGAA3 there is no requirement on bidders to submit bids for consecutive years. The model enables Users to bid for capacity (MW) for an initial period and a subsequent period.

4.3.2.6 The GBSO will prepare an offer for each User for each bid at a node. The offer will set out the connection capacity and the liability for short run or long run charges. The offer will also include a bilateral connection agreement (BCA) and a construction agreement if transmission investment is required (either local or wider).

4.3.2.7 As part of WGAP1, after each auction round Users have the opportunity to vary any of their tendered parameters. Ultimately the auction would close (see below for closure rules) and the prevailing bids in that final round would be offered terms for connection / use of system in accordance with that Users tendered parameters at that time, together with the prevailing prices for such access.

4.3.2.8 The WGAP1 auction could close when there are no "significant changes" to the volume or duration of bids received across three consecutive auction rounds. "Significant changes" could mean, for example:

- Aggregate Users bids do not differ in each round from a fixed percentage (perhaps 5%) of volume; or
- Aggregate Users bids do not reduce by a fixed de minimis volume change (perhaps 10MW reduction); or
- bids do not differ in duration by more than say 2 years; or,

- The auction "times out" after a predefined number of rounds.

4.3.2.9 "Significant changes" could be established by reference to the material impact on the transmission system in relation to transmission investment and could vary around the network based on a transparent methodology for establishing them. The closure mechanism will be set ex ante so that Users can understand how the auction will close.

4.3.3 The Optimisation Process – deriving charges

4.3.3.1 As part of WGAP1 the GBSO would evaluate all bids received and operate an optimisation model based on a cost reflective approach for the whole transmission system.

4.3.3.2 The modelling process would in all auctions utilise the volume, duration and load durations tendered by Users to optimally calculate the most appropriate level of transmission investment for the requested capacity. This level will be determined by optimising the balance of access provided through infrastructure and the amount that can be provided through use of the existing network potentially with the risk of incurring constraints operationally.

4.3.3.3 The optimisation model will assess that correct balance and seek the lowest overall combination of infrastructure cost and operational cost. This will in turn result in the User receiving the lowest possible annual charge once all transmission investment has been constructed. In earlier years where less new transmission infrastructure is possible, it would be expected that the price offered for access would be higher due to the less optimal balance between operational and possible infrastructure costs.

4.3.3.4 The modelling process would use as the "background conditions" those Users that have "firm" booked transmission access rights allocated through previous auction processes (if any).

4.3.4 Pricing

4.3.4.1 A single fixed price of access would be determined in this alternative reflecting the costs of the infrastructure that is responsible for conveying the output of a Power Station together with the levels of incurred operational costs for doing so when there is insufficient transmission infrastructure available to do so. After a lead time sufficient to construct any new infrastructure the price would be expected to move to the optimal combination of transmission infrastructure and expected operational expenditure.

4.3.4.2 The exact manner in which the price would be calculated will be subject to a future use of system charging methodology pre-consultation (GB-ECM-016). However it is likely to require the development of a complex modelling solution that will nodally model each Power Station on the system, and probabilistically model the output of generators within their load duration curves and demand. It would also model the longer term reinforcements required to optimise the operational costs of managing constraints when viewed against the costs of additional transmission system reinforcement.

4.3.4.3 The price calculated would be charged on a £/MW basis in a similar manner to which existing TNUoS charges are levied.

4.3.5 Over- / Under-Recovery

4.3.5.1 Given the forecast nature of the variables used to generate the prices given to Users for access rights in this model it is likely that there will some levels of over and under-recovery inherent within the model.

4.3.5.2 The price calculated for access under this alternative can be thought of as replacing the locational element of generation TNUoS charges and also certain elements of BSUoS charges. Therefore it would be anticipated that any under or over-recovery of actual costs through these charges would be offset through adjustments to the residual TNUoS tariff or through adjustments to BSUoS charges. National Grid may also ultimately be incentivised to manage such under- or over recoveries.

4.3.6 Treatment of Overrun

4.3.6.1 Should the concept of overrun ultimately be introduced into the transmission access arrangements through any Authority approval of CAP162 then this model remains compatible with it. It is however not a simple matter to relate the two products due to the load duration curve characteristic of this model.

4.3.6.2 The load duration or load distribution curve restriction on a generators output requires a judgement to be made regarding whether a generator is in fact generating above its procured access rights. The load duration curve would define the number of hours a particular Power Station may generate above a certain percentage output. It is proposed that once a generator had "used up" all its available hours above a certain output, then any further generation at this percentage output or above would result in an overrun charge.

4.3.6.3 A variation to this would be if a generator had notified National Grid in advance that it wished to run on overrun for a particular period rather than utilise it permitted hours under the load duration curve. Should this be the case the generator would need to notify National Grid that it intends this charging arrangement to apply no later than gate closure for the settlement period in which it wishes to overrun. A User may notify a single settlement period or a block of settlement periods in which this arrangement is to occur provided that where a block is nominated gate closure for the first settlement period has not yet passed. Once a settlement period has been nominated as an "overrun" settlement period that notification is final and may not be reversed.

4.3.7 "Shareability"

4.3.7.1 Due to the unique nature of the combined product (it is likely to be unique due to assumptions regarding the tendered buyback price and load duration) so it becomes much more problematic to envisage widespread trading of the access product. To facilitate trading either National Grid would have to generate a complex exchange rate between two Power Stations to account for the tendered parameters of the "selling" Power Station and those of the "buying" Power Station which may not be particularly high if their characteristics are different (if indeed calculating such an exchange rate were to be feasible). Or the "buying" Power Station would need to agree to operate within the buy-back and load duration parameters tendered by the "selling" Power Station. These may not be particularly attractive to "buying" parties again restricting the likelihood of trading.

4.3.8 Design Variation Connections

4.3.8.1 The arrangements under a capacity and duration auction process are capable of recognising the implications of Users with design variation connections for revenue recovery. This can be achieved by ensuring that the tariffs that are offered to such Users reflect the lower investment costs at the node for such Users. Furthermore, if appropriate the applicable tariffs could also reflect arrangements where the User is subject to transmission capacity reductions in circumstances where circuits nominated in the connection agreement are unavailable.

4.3.9 Securities

4.3.9.1 It is proposed, as part of WGAP1 that under the volume and duration model pre commissioning liabilities would be managed through the construction agreement as now. Therefore if Users do not complete their works (i.e. build a power station) then they cannot connect to the transmission system and are liable for any "stranded" costs. This reflects the fact that stranded costs only occur if the User cannot complete its works and a connection agreement is terminated.

4.3.9.2 The nature of final sums arrangements with regard to security for transmission investment works is as being similar to the existing final sums methodology. These final sums should be cost reflective and identified as part of the auction process. Once a User has committed to pay the associated tariff then the final sums should be fixed in the construction agreement until such time as the User connects. This would enable the GBSO/TO to ensure that appropriate security is in pace. If the actual costs that are secured change then it is for the GBSO/TO to determine whether there is over security and advise the User of the lower liabilities. The User can chose to enter into a new agreement that reflects these final sums. However, the GBSO/TO cannot increase the liabilities if costs escalate and this additional risk would be borne by all Users and be subject to appropriate incentive arrangements with the GBSO/TO.

4.3.9.3 The use of a construction agreement and cost reflective final sums would enable negative tariff nodes or zones to be treated on the same basis as all other nodes (avoiding any discrimination). This would also ensure that appropriate security arrangements would be in place for any transmission works (local or wider) in negative tariff zones.

4.3.9.4 A construction agreement would also enable the issues associated with project delays and force majeure to be managed under the current arrangements.

4.3.9.5 It should be noted that where Users can use the system without a requirement for any transmission reinforcement that there would be no need for a construction agreement or any liabilities with regard to security for new investment and vice versa.

4.3.9.6 Using the current arrangements under a construction agreement would also enable the existing arrangements with regard to transmission reinforcement for existing connections (e.g. asset replacement) to be maintained (for example where time expired assets are being replaced).

4.3.10 Impact on Users connected to the transmission system

4.3.10.1 This section considers the potential impact of the WGAP1 capacity and duration auction model on existing and potential Users connected to the transmission system. The auction process gives the Users the opportunity to fix (hedge) the long run and short run costs of using the transmission system. This provides effective risk management which should result in an efficient and economic solution (subject to resolution of the over and under recovery issues).

4.3.10.2 From the perspective of different types of User the WGAP1 capacity and duration model has the following implications

- Existing User: The proposed arrangements would replace the existing obligations under the CUSC with regard to charging liabilities and rights to use the transmission system. Existing Users (be it that they are a current (commissioned) generator or a generator with a signed Bilateral Connection Agreement but not yet commissioned) would be required to bid in the first round alongside Users that wish to use the system in the future.

- Incremental Capacity: For existing Users that are seeking incremental capacity at a node where there is no requirement for additional wider transmission investment the charges would be based on the long run costs associated with the node.

- "Return to Service": Under the capacity and duration model existing Users can book a limited duration of transmission access then take an outage period and subsequently return to service. However, the bid to return to service would be treated on the same basis as a new entrant since the existing capacity may have been allocated to another User. Therefore there may be an investment required in transmission reinforcement which may delay a firm allocation. During this investment period, the existing User could be exposed to the short run costs if it wishes to use the system.

- New Capacity: New Users would be able to bid for new firm transmission capacity in the auction process. Any offer would take into account the investment period required. If the local and wider works can be aligned then the User can use the system with firm long term transmission connection rights from the date that the works are completed.

- "Connect and Manage": In certain circumstances, the GBSO/TO may be able to complete local works ahead of wider reinforcement works. In this case, the User can opt to complete on the basis of local works, subject to the short run costs. These short run costs would be applicable until such time as the wider reinforcement works are completed. This approach is analogous to the "Connect and Manage" arrangements currently under consideration in CAP164.

4.3.11 Impact on GBSO/TO

4.3.11.1 From the perspective of the GBSO and TOs, the User acceptances form the basis for revenue recovery with firm capacity charges recovering the long run marginal cost of investment in the transmission system and the constraint charges recovering the ex ante estimated short run constraint costs.

4.3.11.2 An over and under recovery mechanism is required to ensure revenue adequacy; which is the recovery of actual costs where they vary from the fixed LRMC and SRMC charges. There are a number of different options for the design of such a mechanism:

- LRMC under/over recovery could be addressed through adjustments to non locational residual;
- SRMC under/over recovery could be addressed through non locational BSUoS or
- SRMC shortfall recovery through zonal locational BSUoS or
- User specific relief from £/MWh SRMC cost in the event that the constraint costs are less than forecast

4.3.11.3 The WGAP1 capacity and duration model will have clear implications for the SO and TOs in relation to their licensed activities and their transmission price control. For example, any arrangements that fix revenues from Users whether in the form of short run or long run charges will have an impact on the amount of revenue recovery. In addition, there may be a requirement to introduce new incentive arrangements on the GBSO and or TOs in relation to short run costs and long run transmission investment. The price control and Licence may, therefore, require revision to enable the new arrangements to be implemented.

5.0 WORKING GROUP ALTERNATIVE AMENDMENTS

5.1 As a result of their discussions, Working Group members agreed three Working Group Alternative Amendments.

5.2 For clarity, the design options chosen in the original proposal, WGAA1, WGAA2 and WGAA3 are compared in the table below.

Design considerations	**Original**	**WGAA1**	**WGAA2**	**WGAA3**
Network analysis	Zonal	Boundary constraint		Nodal or boundary constraint*
Interaction between boundary capability and connected generation	Ex ante analysis	Multiple boundaries		Nodal representation or boundary constraint*
Baseline and incremental capacity	Together			
Definition of baseline capacity	Current long-term access rights (TEC)			Physical capability or current long-term access rights (TEC)*
Incremental capacity - Constraints	Unconstrained after [4] years	Constraints modelled @ wider & local level		
Incremental capacity - Multiple years	Together	Separate		
Incremental capacity - Planned schemes	Include in baseline			
Pricing	Pay-as-bid	Cleared (or marginal) price		Administered
Static/Dynamic	Dynamic			
Reserve price	Based on LRMC	No reserve price	Reserve prices reflecting LMRC or in "Over-allocated zones" LRMC + SRMC	Administered

* To be determined in Auction Methodology Statement

5.3 Working Group Alternative Amendment 1 (WGAA1)

5.3.1 Summary of WGAA1

5.3.1.1 WGAA1 was proposed by National Grid, and is based on a boundary constraint, dynamic, cleared price, multi-year auction as described in section 4 above. The auction will allocate capacity for a 40 year period i.e. the 2010 auction (run in autumn 2010) would allocate capacity from April 2011 to March 2051. All 40 annual allocations would run simultaneously in the auction. The methodology used for each of the years that are covered by the auction is summarised below:

- Establish physical boundaries and associated limits based on SQSS security criteria
- Establish demand at system peak in each zone
- Establish the supply function for incremental transmission capacity for each boundary for each year
- Establish for each boundary which zones participate in the flows in a particular direction across them.
- Enhance the boundary capabilities associated with derogated boundaries, e.g. England-Scotland boundary (SYS boundary B6) increased to accommodate derogation associated with BETTA transition arrangements
- Publish market information covering boundaries zones and incremental capacity (supply function).
- Invite bids for capacity in each zone for each of the years on a volume and price basis – Generators would be limited to a maximum number of Bids per Power Station equal to 5 × (Number of BMUs at the Power Station).
- Generators would also be able to set a "de-minimis" auction acceptance volume parameter that would limit the auction model from accepting a Bid from a Power Station if it was pro-rated or capped at a level below the de-minimis value specified.
- There will be no reserve price set across any of the auction boundaries.
- Run the boundary constraint auction to maximise notional value indicated by bids whilst ensuring that the flows across each boundary is not exceeded.
- Set the cleared prices based on accepted bids behind constrained boundaries
- Publish results to the market and allow for revision of bid price and volume with a reduction in volume being only reversible if another party subsequently reduces volume behind the same boundary
- A number of rounds would then ensue with the ability for auction participants to revise bid prices and volumes in each round. This process would continue until no further material movement takes place between three successive rounds of the auction. A contingency for a forced close by only allowing upward price and volume movements will be in place after [15] flexible auction rounds have taken place.
- The rounds would occur on each working day in September and October. Bids would be accepted from Users between 08:00 – 17:00 on each working day with the results of that round being published by 20:00 on the same day. The exception would be the first two rounds of the auction held in each year which would occur on the first and third working days of September. The extra day being to allow Users to fully appraise the results of the first round and further refine their bidding strategy.
- Capacity will be allocated based on auction result with fixed financial commitment based on boundary cleared price for each year.

5.3.2 Further Detail – WGAA1

5.3.2.1 For WGAA1, separate auctions will be held (simultaneously) for each (whole) financial year with incremental transmission capacity initially triggered in individual years when the additional bid revenue that could be accepted in that year is greater than 50% of the annuitised supply function for incremental transmission capacity. The results from each year would then be summarised between rounds. Incremental capacity would be released if:

- It is triggered in at least [8] individual years (since this represents 50% of supply function; or
- It is triggered in less than [8] years but the net present value of the additional bid revenue as a result of the reinforcement across all years is greater than 50% of the supply function.

5.3.2.2 The incremental capacity that passes this test would be re-entered into the auctions for individual years and the separate auctions would then be repeated and the results published prior to the next auction round.

5.3.2.3 This approach to incremental transmission capacity release would achieve an appropriate balance between the accuracy of the test for incremental capacity release, and complexity and transparency for Users. This approach would also avoid any issues associated with inefficient results being caused by precedence being given to Users that choose to bid for capacity over a longer period.

5.3.2.4 In order to avoid an inefficient over-allocation of long-term transmission access rights, constraints on the supply function for incremental transmission capacity will be modelled. These constraints will be calculated by the Transmission Licensees based on information that is provided by Users prior to the auction taking place. It is anticipated that this information will be collated as part of the local connection process.

5.3.2.5 Baseline and incremental capacity will be handled together in order to avoid uncertainty issues for the User (i.e. the User cannot establish a sensible bidding strategy for baseline capacity unless there is some certainty regarding the auction for incremental capacity).

5.3.2.6 The boundaries to be used are yet to be determined, however, a set of illustrative boundaries based on initial analysis can be found in annex 3.

5.3.2.7 The boundary transmission capacity that is allocated will be based on the deterministic rules contained in the prevailing (GB) Security and Quality of Supply Standard. For the main system boundaries where there is at least 1500 MW of demand additional capacity will be allocated as detailed in the current SQSS.

5.3.2.8 Pricing will be based on the relevant boundary cleared prices to ensure all Users participating in the same auction pay the same price for the same service in the same zone.

5.3.2.9 The WGAA1 auction will be dynamic with no limits on bidders ability to change their submitted price (i.e. there will be no reserve price), volume (MW) or duration details between rounds. Bidders will be limited to a maximum number of Bids per Power Station in each round. This upper limit will be set at 5 × (Number of BMUs at the Power Station).

5.3.2.10 This will allow Users who are not successful in winning a volume of transmission access rights above their Stable Export Limit or an acceptable duration (number of years) of access rights to effectively remove themselves from the auction by reducing their bid price. When reducing volume a following increase is only allowed if others reduce volume at behind the same boundary in the same auction round. There will also be an automatic "de-minimis" parameter within the auction which if used will allow an auction participant to signal that if a discrete bid is pro-rated or capped at a level less than the applicable de-minimis parameter then the auction must automatically disregard it.

5.3.2.11 In order to ensure that the auction closes, stability criteria will be developed based on changes to the allocation of transmission access rights between three successive rounds falling within a pre-defined tolerance (in MW) or the price of those allocated access rights in three successive rounds being within a pre-defined tolerance (in £/MW/year). It is likely that these stability criteria will allow for increases and reduction in price and volume although there will be some limitation of volume reduction if only one User reduces volume.

5.3.3 Process for Allocating Wider Transmission Access Rights – WGAA1

5.3.3.1 This section considers the potential impact of the auction process under WGAA1 on existing and potential Users of the transmission system. The auction process gives Users the opportunity to bid for long-term transmission access rights which provide the holder with a (perfect) hedge against the short-term value of transmission access (i.e. Users that operate within the access rights they purchase in the auction are not exposed to the short-term cost of transmission access).

5.3.3.2 The volume of long-term access rights released by the GBSO would be rationed to the physical capability of the transmission network, as defined by the GBSQSS. This means that Users can either operate using the short-term transmission access regime introduced by CAP161 ("SO Release" of short-term access rights), CAP162 (entry "Overrun") and CAP163 (entry access right "Sharing") or obtain a hedge against this by bidding for long-term access rights in the auction. If Users bid for long-term access rights only when the (cost-reflective) short-term price is higher, and the Transmission Licensees construct transmission assets in order to release long-term rights then this should result in an economic and efficient transmission network.

5.3.3.3 The possible outcomes for Users in terms the auction process associated with WGAA1, are illustrated below.

Existing (pre and post-commissioning) User

5.3.3.4 The proposed WGAA1 arrangements would replace the existing rights and obligations under the CUSC with regard to transmission access rights and charging liabilities. Existing Users would be required to bid for the long-term transmission access rights alongside Users that wish to use the system in the future.

5.3.3.5 The auction would be held once a year in the autumn for long-term transmission access rights starting from the following 1 April.

5.3.3.6 Prior to the commencement of the auction, National Grid would publish the access allocation model for each future year which would include the following information:

- Winter peak demand (MW) at each node;
- System boundaries and associated capabilities (in MW);
- Supply function for incremental transmission capacity associated with each boundary (including constraints on system boundary capability (MW) increases in each year)

5.3.3.7 Users would be able to use the access allocation model to investigate the access allocation that would result from any Users defined bidding scenarios.

5.3.3.8 Users would bid in each of the future years that they want long-term transmission access rights with the associated capacity (in MW) and price (in £/MW/year). Users would be able to bid for different capacities and with different prices in each year but would be limited to a maximum number of Bids per Power Station in each round equal to 5 × (number of BMUs at the Power Station).

5.3.3.9 Users would also be able to define an automatic "de-minimis" parameter within the auction which if used will allow an auction participant to signal that if a discrete bid is pro-rated or capped at a level less than their de-minimis parameter then the auction must automatically disregard it.

5.3.3.10 In the first round of the auction, bidding may be difficult since successful bidding involves accurately forecasting the clearing price, however, at the end of the first round, of the auction National Grid will publish the following information:

- Details of all bids submitted (price and volume);
- Long-term access right allocations in each year (MW at each node), including the associated cleared prices;
- Details of situations in which incremental boundary capability has been triggered.

5.3.3.11 Bidders then have an opportunity to make use of this information and revise their bids in a series of future rounds of the auction.

5.3.3.12 Further auction rounds would take place until the changes in transmission access allocation between three successive rounds fall below the pre-defined tolerance (in MW) or if the price of allocated access rights does not move outside of a pre-defined tolerance (in £/MW/year) in three successive rounds. The auction would then close.

5.3.3.13 Users that are successful in the auction would then receive the long-term transmission access rights (which provide a hedge against the short-term cost of transmission access) for the capacity (in MW) for which they were successful in the years in which they were successful.

5.3.3.14 Users would also be committed to paying the associated clearing price (£/MW/year) for these long-term access rights in the years in which they were successful.

5.3.3.15 If Users trigger incremental capacity and this is not provided by the TOs, the GBSO will be required to buy-back the capacity that cannot be provided.

5.3.3.16 Users that are unsuccessful in the auction could make use of the short-term access regime, or wait until the next auction for long-term access rights.

5.3.3.17 Under WGAA1 all generation Users (those utilising short-term access rights and long-term access rights) will be required to pay use of system charges which will be set to recover any difference (surplus or deficit) between the auction revenue and the proportion of the transmission licensees maximum allowed revenue to be recovered from generation Users (27%).

New (pre-commissioning) User

5.3.3.18 New Users would bid for long-term access rights in the auction alongside existing Users. The auction process would be as set out above for existing Users.

5.3.3.19 New Users will need a connection to the transmission system in order to make use of long-term access rights. New Users will be able to apply for local capacity with the offer remaining open until the auction of wider long-term access rights.

Impact on the System Operator and Transmission Owners

5.3.3.20 As part of WGAA1 National Grid (as the GBSO) will receive all User requests for local connections to the transmission system and will pass this information to the relevant TO. This information will be used to perform the network analysis required to calculate boundary capabilities and constraints on boundary capability increases. This work will be the responsibility of the TO with the GBSO taking a co-ordination role.

5.3.3.21 The TOs would need to provide details of the transmission system boundary capabilities (including any constraints on system boundary capability increases in each year) and supply functions for incremental transmission capacity.

5.3.3.22 The GBSO would need to take the information provided by the TOs and build the transmission access allocation model and publish for all Users. The GBSO would then need to administer the transmission access auction, including the publication of the required information after each round and monitoring allocation between rounds against the auction close-out criteria.

5.3.3.23 Following the WGAA1 auction, the GBSO will know the revenue to be recovered from generators based on the successful bids for long-term access rights in the auction. It is likely that there will be a difference between the total annual revenue recovered from the auction and the proportion of the maximum allowed revenue (27%) that is to be recovered from generation. This difference (surplus or deficit) will be passed back to all generation Users as part of the residual transmission use of system charge.

5.3.3.24 The TOs will know the boundary reinforcements that are required and the associated timescales and will be required to complete them to time. In the event that such reinforcements are not completed to time, the GBSO would need to buy-back the capacity. Arrangements for the funding of such buy-back payments will be agreed (outside of the CUSC); for instance it may not be appropriate to expose the TO to any such costs that result solely from consenting delays.

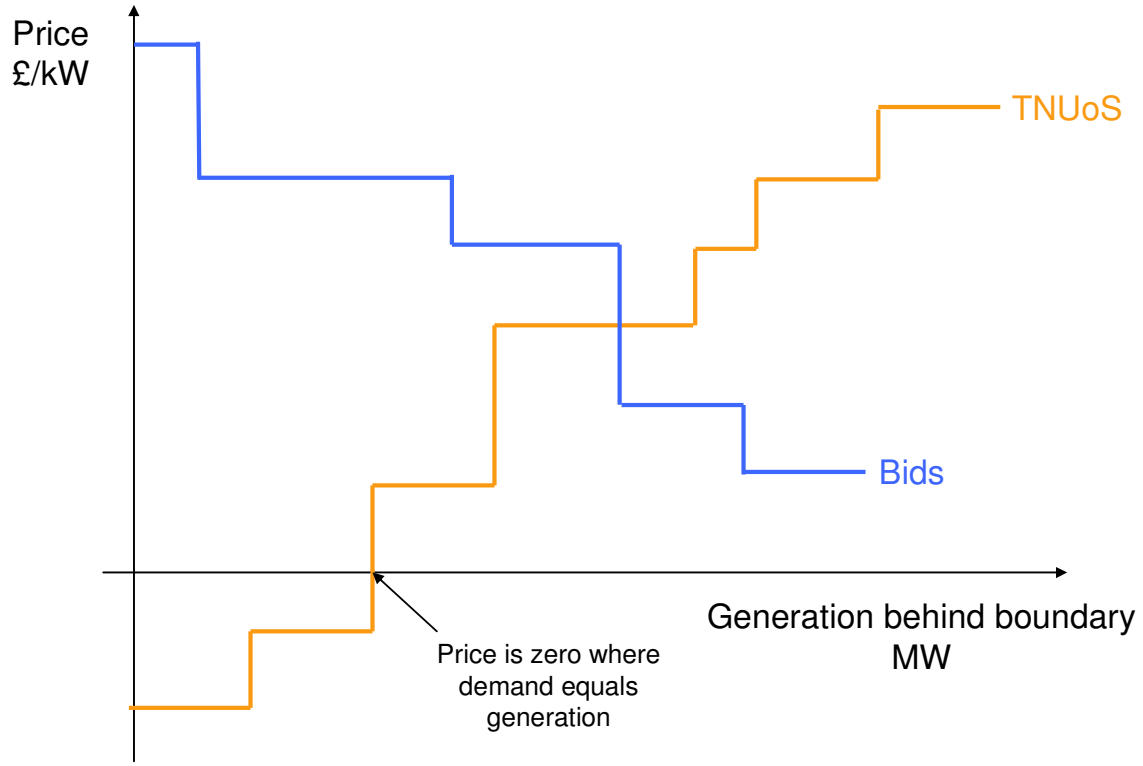
5.4 Working Group Alternative Amendment 2 (WGAA2)

5.4.1 Working Group Alternative 2 was developed from Working Group Consultation Request 2 proposed by National Grid and is predominantly based upon WGAA1. Its key difference is its treatment of Reserve Prices.

5.4.2 As noted in the Working Group discussions in Section 4 in WGAA2 the Reserve price will be utilised for two reasons:

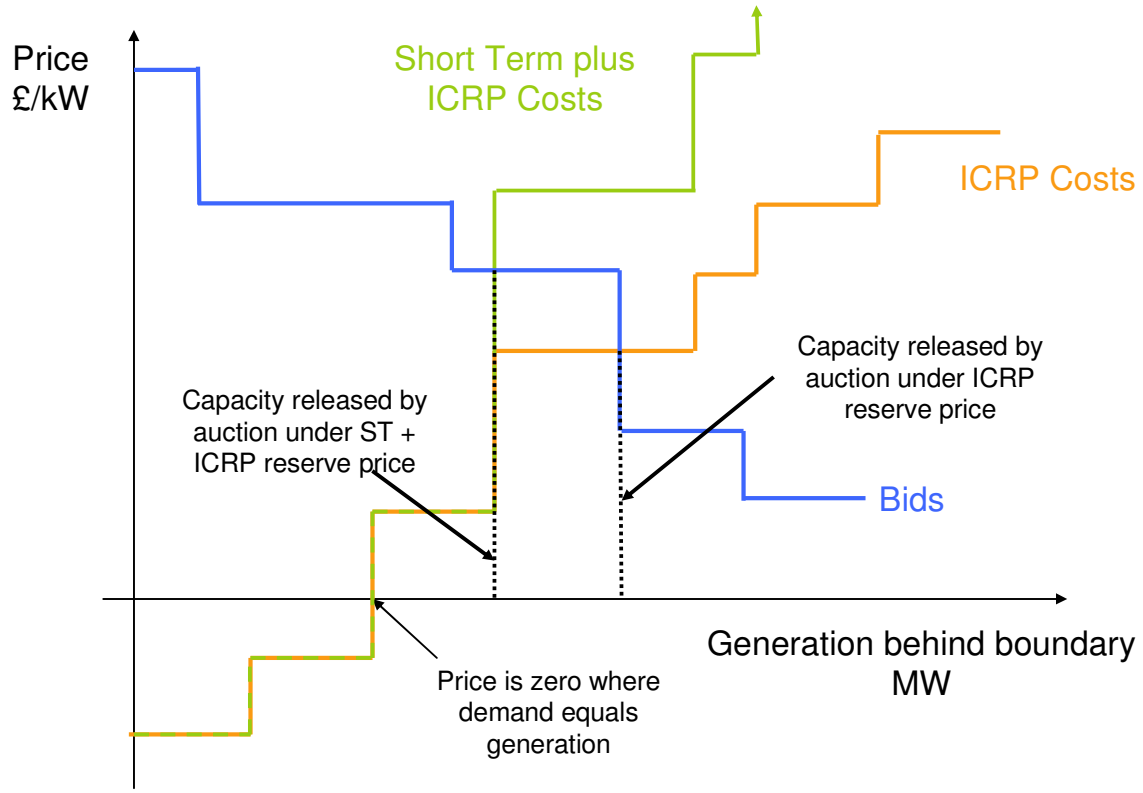
- The first is that it will be used to ensure that the Long-Run Marginal Costs of the GB Transmission System can be recovered from Users of Long-Term Access Products through the use of a Reserve Price that will at a minimum reflect the Long-Run Marginal Costs of the Transmission System.
- The second is to reflect the Short-Run Marginal Costs within the Reserve Price caused through any over-allocation of long-term transmission system access rights, for instance across the Cheviot (B6) boundary.

5.4.3 The application of the above methodology would result in Reserve Prices being set according to annual reserve price curves. These would see the Reserve Price Ramp up as more baseline capacity is allocated to reflect the incremental ramping of long-run marginal cost. The actual reserve price in each auction would then be set according to where the Bid Capacity supply curve crosses the Reserve Price Curve. This is shown in the diagram below.



5.4.4 In addition to this where the baseline capacity being allocated is in excess of that implied from a strict application of the GB SQSS planning standards (for instance over derogated boundaries such as the Cheviot boundary) the annual Reserve Price curves for years close to real time (i.e. before the lead times for incremental transmission system investment) will ramp according to both the long-run and short-run marginal costs. In longer lead times from real time, and as further incremental capacity can be physically constructed across an auction boundary, so the contribution from Short-Run Marginal Costs to an auction boundary reserve price curve will diminish before eventually only the Long-Run marginal Costs make up the reserve price curve.

5.4.5 The auction model used to assess auction bids will be constructed in the same manner as in WGAA1, i.e. it will be a boundary constraint, cleared price model, with the exception that it will additionally utilise these reserve price curves, whereas WGAA1 does not utilise reserve prices.



5.5 Working Group Alternative Amendment 3 (WGAA3)

5.5.1 *High level Design Concept*

5.5.1.1 The Capacity and Duration Model proposed in WGAA3, is an annual auction based process designed to discover the nodal transmission charges. Users would bid an entry access capacity requirement based on a capacity in MW and duration in years at a node. National Grid as GBSO would determine the nodal long term cost reflective charges at the node (LRMC) and the charge for the cost of constraints (SRMC) based on the entry access capacity requirement at that node. As a general rule, all capacity provided through physical assets will be priced at the long-run price, all other access rights provided without the physical assets in place to support them would be priced at the short-run price.

5.5.1.2 Following each auction round each User would receive an access capacity equal to that which it had bid for. A proportion of this (up to 100%) would be at the long-run price and any remainder priced at the short-run price. Users would have the opportunity to vary bids at their nodes in subsequent auction rounds.

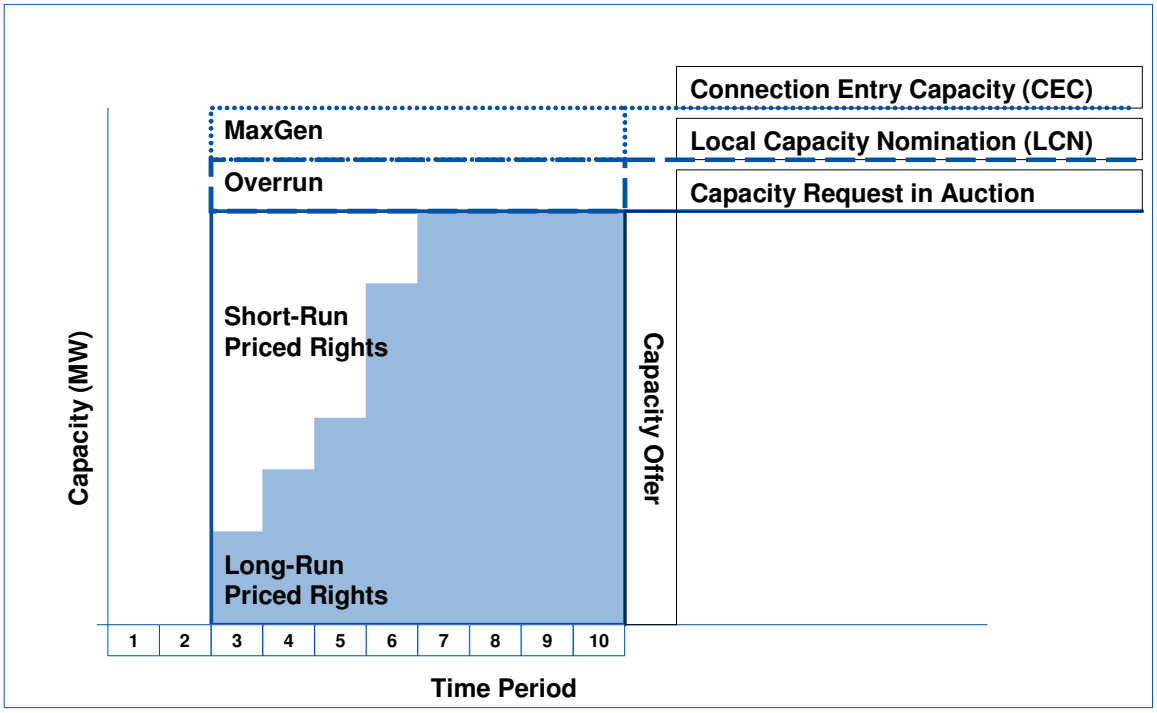
5.5.1.3 In this model an entry node means a point of connection for a power station onto the transmission system. These points of connection are currently represented by the Transmission Entry Capacity (TEC) in a Bilateral Connection Agreement (BCA).

5.5.1.4 The high level design concept, for WGAA3, would include the ability for parties to overrun their firm capacity allocation up to the level of the physical connection capacity (however defined).

5.5.1.5 In the first auction to be run according to these principles all existing physical access rights would be withdrawn and then re-allocated through that first auction. In future auctions any access rights that had already been allocated via previous auctions would not be “re-auctioned” in effect meaning that future auctions would be for unsold or incremental capacity only.

5.5.1.6 In auction rounds where the demand for access rights exceeds the actual physical capability of the transmission system then the rights that are available will be pro-rated according to the Users Bids. For example should there be 500MW of physical capacity available and 4 Power Stations each Bid for 250MW then each of those Power Stations will receive 125MW of capacity based on the long-run price and 125MW of capacity based at the short-run price.

5.5.1.7 To summarise diagrammatically a User would have the expectation of firm rights allocated as follows:



5.5.2 Pro-Ration of Existing Rights

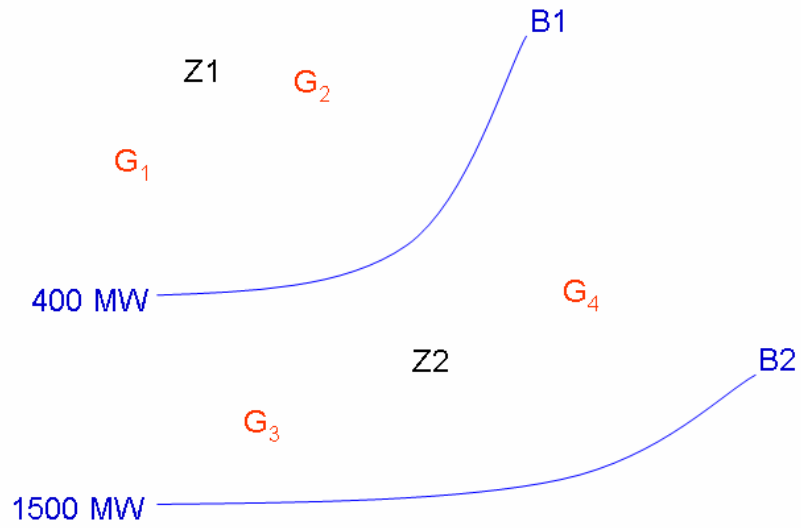
5.5.2.1 As noted above, in the first auction to be run according to these principles all existing physical access rights would be withdrawn and then re-allocated through that first auction. In the first year if demand for existing rights is greater than those that are physically available in any given year being auctioned then a pro-ration process will come into effect.

5.5.2.2 The general philosophy is that the most onerous constraint is determined first and each generator behind that constraint has an equally pro-rated volume of long-run priced access allocated to it. That pro-rating is then fixed for the next most onerous constraint that remains to be allocated and so on, until all constraint boundaries have been allocated.

5.5.2.3 The following examples demonstrate how this would occur in practice.

Two Zone Example

5.5.2.4 In this simple example there are two zones each with two generators behind them.



Generator	Requested Capacity	Long-Run Allocation
G1	400	-
G2	400	-
G3	1200	-
G4	1200	-

5.5.2.5 Boundary B1 has a transfer capability of 400MW and 800MW of requested capacity => 50% scaling factor.

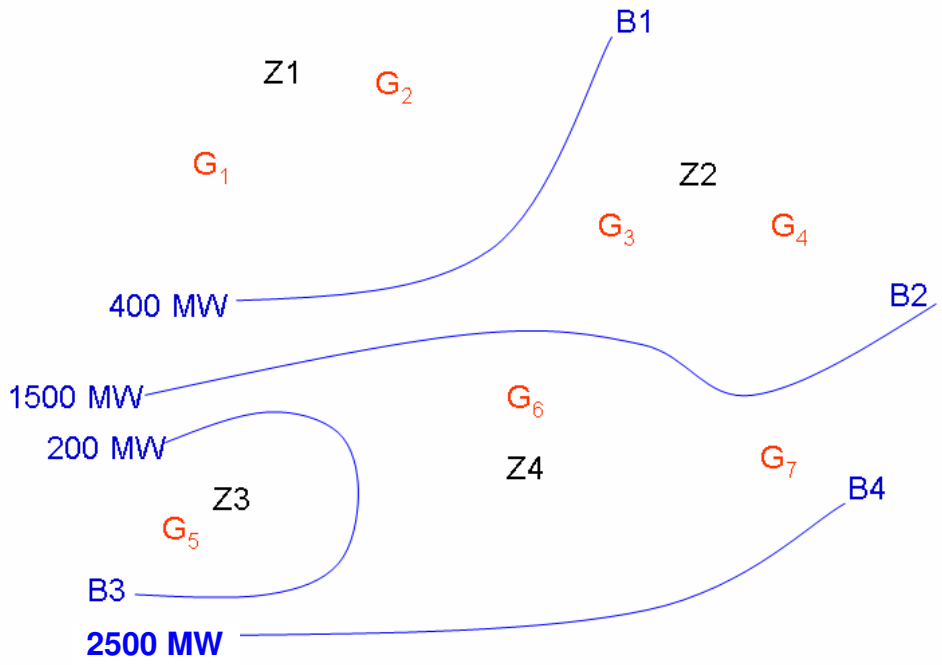
5.5.2.6 Boundary B2 has a transfer capability of 1500MW and (400+400+1200+1200) = 3200MW of requested capacity behind it => 46.875% scaling factor. Thus B2 is the most onerous boundary constraint and so every generator behind it gets pro-rated at this rate

Generator	Requested Capacity	Long-Run Allocation
G1	400	188
G2	400	188
G3	1200	563
G4	1200	563

5.5.2.7 From this stage on any further optimisation of less onerously constrained boundaries below B2 would be assessed with the outputs of G1 – G4 fixed at the values above which would not then be subject to any further pro-ration.

Four Zone Example

5.5.2.8 In this more complex example there are four zones with seven generators within them.


B1
Z1
G2
G1
Z2
G3
G4
400 MW
B2
1500 MW
G6
200 MW
Z4
G7
B4
Z3
G5
B3
2500 MW

Generator	Requested Capacity	Long-Run Allocation
G1	400	-
G2	800	-
G3	400	-
G4	500	-
G5	400	-
G6	200	-
G7	200	-

5.5.2.9 Boundary B1 has a transfer capability of 400MW and (400+800) = 1200MW of requested capacity behind it => 33.33% scaling factor.

5.5.2.10 Boundary B2 has a transfer capability of 1500MW and (400+800+400+500) = 2100MW of requested capacity behind it => 71.43% scaling factor.

5.5.2.11 Boundary B3 has a transfer capability of 200MW and 400MW of requested capacity behind it => 50% scaling factor.

5.5.2.12 Boundary B4 has a transfer capability of 2500MW and (400+800+400+500+400+200+200) = 2900MW of requested capacity behind it => 86.2% scaling factor.

5.5.2.13 From this first assessment it is apparent that Boundary B1 is most constrained and therefore G1 and G2 are both pro-rated by 33.33%.

Generator	Requested Capacity	Long-Run Allocation
G1	400	133.3MW
G2	800	266.67MW
G3	400	-
G4	500	-
G5	400	-
G6	200	-
G7	200	-

5.5.2.14 With G1 and G2 pro-rated to these capacity allocations the remaining three boundaries are reassessed.

5.5.2.15 Boundary B2 has a transfer capability of 1500MW and (133.33+266.67+400+500) = 1300MW of requested and pro-rated capacity behind it => unconstrained.

5.5.2.16 Boundary B3 has a transfer capability of 200MW and 400MW of requested capacity behind it => 50% scaling factor.

5.5.2.17 Boundary B4 has a transfer capability of 2500MW and (133.33+266.66+400+500+400+200+200) = 2100MW of requested and pro-rated capacity behind it => unconstrained.

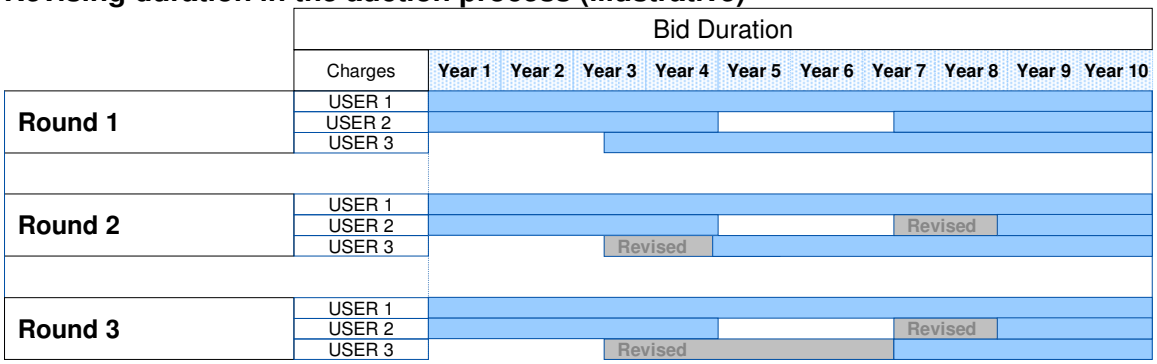
5.5.2.18 The only remaining constrained boundary is Boundary B3 and so generator G5 is pro-rated by 50%. All other generators receive their full requested allocation however.

Generator	Requested Capacity	Long-Run Allocation
G1	400	133.3MW
G2	800	266.67MW
G3	400	400MW
G4	500	500MW
G5	400	200MW
G6	200	200MW
G7	200	200MW

5.5.3 The Auction Process

5.5.3.1 As part of WGAA3 the multi round auction process would be a based on Users bidding a capacity (MW) and duration (years) for each node where capacity is required. The opening bid in the first round of the auction should represent the maximum capacity and longest duration required at the node. The structure of bids in terms of duration over different rounds is illustrated below.

Revising duration in the auction process (illustrative)



5.5.3.2 It should be noted from the above that there is no requirement on bidders to submit bids for consecutive years. The model enables Users to bid for capacity (MW) for an initial period and a subsequent period. After each auction round Users have the opportunity to vary the capacity and duration.

5.5.3.3 The WGAA3 auction could close when there are no "significant changes" to the volume or duration of bids received across three consecutive auction rounds. "Significant changes" could mean, for example:

- Aggregate Users bids do not differ in each round from a fixed percentage (perhaps 5%) of volume; or
- Aggregate Users bids do not reduce by a fixed de minimis volume change (perhaps 10MW reduction); or
- bids do not differ in duration by more than say 2 years.

5.5.3.4 "Significant changes" could be established by reference to the material impact on the transmission system in relation to transmission investment and could vary around the network based on a transparent methodology for establishing them. The closure mechanism will be set out in a methodology prior to the auction start so that Users can understand how the auction will close.

5.5.3.5 Following the closure of the auction, the GBSO will prepare an offer for each User for each bid at a node. The offer will set out the connection capacity and the liability for short run or long run charges. The offer will also include a bilateral connection agreement (BCA).

5.5.4 The Allocation Process – deriving charges

5.5.4.1 As part of WGAA3 the GBSO would evaluate all bids received and pro-rate to transmission system capability. This could be done with a boundary constraint or a full nodal model of the transmission network.

5.5.4.2 The modelling process would be based on the forecast state of the network taking into account planned and expected reinforcements over the duration of the modelling period. This will require certain assumptions to be made about the state of the transmission network and expected flows from nodes that may not have firm capacity or nodes that may be developed over the period of the planning horizon. For certain nodes or zones the model may assume that the system is unconstrained. For other nodes the system may be constrained.

5.5.4.3 The modelling process would use as the "background conditions" those Users that have "firm" booked transmission access rights allocated through previous auctions.

5.5.5 Long Run Pricing

5.5.5.1 The WGAA3 model would produce a series of cost-reflective tariffs derived for each node for each year that are designed to recover the long run marginal costs associated with investment on the GB transmission system. These charges would comprise the following:

- Nodal Local charge (£/MW)
- Nodal positive or negative locational tariffs (£/MW) which may be similar in certain zones
- Residual non locational charge for all Users which could be capacity (£/MW) based or output based (£/MWh)

5.5.5.2 For any User that triggers new investment (both new entrants and Users that "return to service") the long run charges would apply once the investment in wider transmission works have been completed subject to completion of local works.

5.5.6 Long-Run Charges

5.5.6.1 The long-run charges are then calculated annually according to the following formula:

(Total Long-Run Capacity held in a given Year) × (Long-Run Tariff)

5.5.7 Short Run Prices

5.5.7.1 At certain nodes there may be insufficient capacity planned or projected to meet the wider User requirements on the transmission system. It is proposed with WGAA3 that for these nodes the GBSO would derive a cost reflective charge that reflects the short run marginal costs for allowing Users to access the transmission system prior to the completion of the associated wider works. These short run marginal costs result from the completion of local works ahead of wider transmission reinforcements that are required to ensure GBSQSS compliance. The short run charges may apply to all or part of the capacity at a node for a defined period. It is expected that the short run constraint charges would fall away once any required reinforcement is completed. Nodes subject to short run costs would also be subject to the nodal local charge (£/MW).

5.5.7.2 It should be noted that the short run costs at nodes would not reflect wider constraint costs on the transmission system that occur as a result of transmission outages or other transmission related requirements. These costs would continue to be recovered through non locational BSUoS.

5.5.7.3 The Working Group reached the consensus position that the preferred pricing approach would be to adopt a £/MWh price that would be charged when a constraint was active. This approach, the Working Group felt, would provide the most appropriate signal to minimise generation that utilises short-run priced access and would also be most easily priced into the energy market decisions to be taken by Users when considering whether to generate using short-run priced rights.

5.5.7.4 The final form of the short-run price will be further developed by National Grid and will ultimately be determined through a charging consultation.

5.5.8 **Short Run Charges**

5.5.8.1 The next stage for short-run pricing is to determine the overall charge that will be levied on any Users of short-run priced access rights. The price determined above is closely linked with the volume of generation output against which the price is levied in real time.

5.5.8.2 The first point to note is that it is anticipated that the short-run price in a given zone will only be levied in those settlement periods where there is an export constraint that is active due in whole or in part to output from Power Stations in that zone.

5.5.8.3 Secondly the volume against which the short-run price could be levied in these circumstances needs to be determined. In the case of this Working Group alternative amendment this volume is all output from generation in an “active” zone that is above those power stations long-run priced rights. In such cases clearly the price would need to be set ex-ante against the forecast annual total of such output in constrained zones.

5.5.9 **Short-Run Over- / Under-Recovery**

5.5.9.1 In the event that short-run prices are set ex ante, it is likely that these prices and/or volumes will differ from actual costs and/or volumes and that this would result in either an over or under recovery by the GBSO of short run costs from Users. It is proposed that the revenues received through Users of short-run priced access rights would be offset against BSUoS charges and so it follows that any over- or under-recovery of the short-run costs would be socialised across all BSUoS payers.

5.5.9.2 As a further consideration the short run charges operate as an important signal to Users as to whether to acquire firm long-term access or acquire short-term firm rights or Overrun with exposure to short term costs. Understanding the short run costs (and the over and under recovery mechanism) is therefore vitally important for Users (this is true of any auction design model). The WGAA3 capacity and duration approach may offer Users the ability to fix or hedge these costs, perhaps through a contract for differences (CFD), to enable the User to manage effectively and efficiently the risk associated with firm/non firm transmission capacity holdings.

5.5.10 **Validation Run**

5.5.10.1 To disincentivise the "over-booking" of capacity by Users in an attempt to maximise their share of any pro-rated long-term priced access rights, it is proposed that the following process be incorporated within the CUSC to validate the fact that Users' Power Stations are capable of utilising their full access rights (both long-run and short-run priced access rights). This validation will be through the following process which varies according to whether a generator is "new" or "existing":

5.5.10.2 Stage 1: (New generators): The evidence provided to National Grid through the construction & commissioning process will be used to validate the fact that the Power Station's installed capacity is in line with that which it has booked through the auction process. Should satisfactory evidence not be forthcoming then the existing provisions of CAP150 will be used to withdraw such access rights from the generator and to re-allocate them amongst the remaining generators within the same zone that competed against the CAP150 affected generator in that zone.

5.5.10.3 Stage 1: (Existing generators): For the first year following an auction the output of generating units within the Power Station will be monitored to ensure that they are operational and thus in theory capable of generating up to their capacity.

5.5.10.4 Stage 2: (Existing Generators): Should one or more Generating Units be on outage throughout the first year, a User will be asked to provide evidence that it has in place a programme of work to bring the unit(s) back into service. If necessary the opinions of an Independent Engineer will be sought.

5.5.10.5 Stage 3: (Existing Generators): Should there still be doubt as to the capability of the Power Station and National Grid signals to the User that it intends to reallocate pro-rated capacity then the User will have the opportunity at this stage to appeal to the Authority for a determination.

5.5.10.6 Stage 4: (Existing Generators): The final course of action will be for the generator to undertake a proving run at its own expense to demonstrate that a generating unit(s) which is subject to validation is in fact operational.

5.5.10.7 Should an existing generator fail to prove its capability to utilise its full capacity then National Grid will re-allocate its capacity to that which it reasonably believes the Power Station is capable of utilising. This capacity shall then be pro-rated according to the auction rules and any long-run priced capacity released by this exercise will be reallocated to those Users who also booked capacity in the same auction as the generator whose rights are being reallocated. For the avoidance of doubt this reallocation only applies to the period in which the Users long-run priced access rights have been pro-rated. National Grid would continue to construct and hold the User liable for the long-run priced access rights which have not been pro-rated in future years.

5.5.11 **Treatment of Overrun**

5.5.11.1 The concept of overrun is compatible with this model (noting that CAP162 would need to be approved by the Authority for the concept of overrun to become a part of the arrangements for allocating transmission access). As indicated in the diagram above in section 5.5.1 any output above a User's level of combined long-run priced and short-run priced access rights would be liable for an overrun charge.

5.5.12 **Trading and Sharing of Access Rights**

5.5.12.1 It is envisaged that the long-run priced element of access rights under this model would be fully tradeable and/or shareable. The short run priced element would not be tradeable or shareable however.

5.5.13 **Design Variation Connections**

5.5.13.1 The arrangements under a capacity and duration auction process are capable of recognising the implications of Users with design variation connections for revenue recovery. This can be achieved by ensuring that the tariffs that are offered to such Users reflect the lower investment costs at the node for such Users. Furthermore, if appropriate the applicable tariffs could also reflect arrangements where the User is subject to transmission capacity reductions in circumstances where circuits nominated in the connection agreement are unavailable (It is not clear how any simultaneously cleared auction would address this issue).

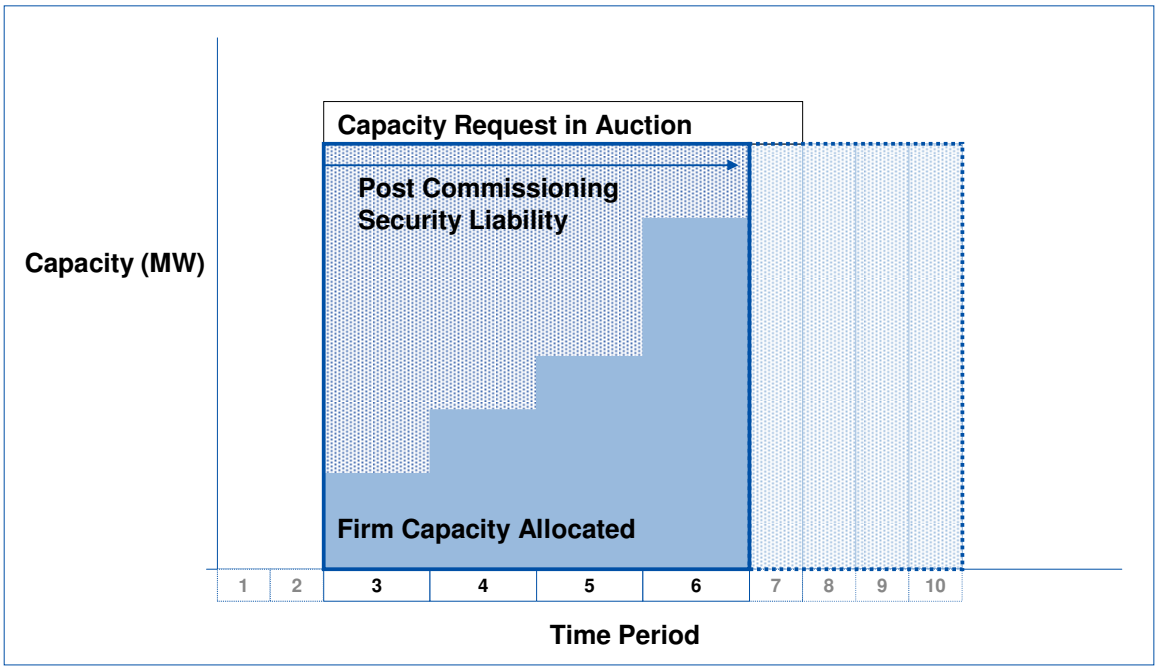
5.5.13.2 Items that require consideration in relation to design variation connections include:

- The commercial and contractual framework in relation to the liability to pay for the short run charges for Users with design variations;
- The nature of any transmission specific restrictions for Users with design variation connections; and
- The implications of intertrips and other operating restriction on design variation connections in a capacity and duration auction

5.5.14 **Securities**

5.5.14.1 It is proposed, as part of WGAA3 that under the capacity and duration model pre commissioning liabilities would be managed through the connection agreement. Therefore if Users do not complete their works (i.e. build a power station) then they cannot connect to the transmission system and are liable for any "stranded" costs. This reflects the fact that stranded costs only occur if the User cannot complete its works and a connection agreement is terminated.

5.5.14.2 An important characteristic of the security arrangements under WGAA3 would be that the securities provided under final sums would be linked to the completion of the assumed wider reinforcements (at the time that the allocation is made) and not upon energisation (as is the case currently as the completion of wider reinforcements is the pre-condition to energisation). Instead the securities for wider reinforcements would progressively reduce as they are delivered potentially post-energisation and would fall away completely once a User has reached the point where all of its access rights are long-run priced access rights. Diagrammatically this is as follows:



5.5.14.3 The nature of final sums arrangements with regard to security for transmission investment works is similar to the existing final sums methodology. These final sums would be cost reflective and identified as part of the auction process. Once a User has committed to pay the associated tariff then the final sums should be fixed until such time as the User connects. This would enable the GBSO/TO to ensure that appropriate security is in place.

5.5.14.4 The use of cost reflective final sums would enable negative tariff nodes or zones to be treated on the same basis as all other nodes (avoiding any discrimination). This would also ensure that appropriate security arrangements would be in place for any transmission works (local or wider) in negative tariff zones.

5.5.14.5 It should be noted that where Users can use the system without a requirement for any transmission reinforcement that there would be no need for any liabilities with regard to security for new investment.

5.5.15 Impact of proposed Security Arrangements on Users

5.5.15.1 It should be noted that for the first auction round all existing rights (pre-commissioning or post-commissioning User) are withdrawn and re-allocated to all Users that wish to secure them. This may lead in some cases to Users (pre or post commissioning) receiving pro-rated rights along with Users that are allocated rights in the auction in advance of certain transmission system reinforcements being completed. In this event all Users will also become liable for the cost-reflective final sums for their share of the liabilities being incurred through the construction of new transmission system assets.

5.5.15.2 Preliminary analysis taken forward through the assessment of CAP166 indicates that given current demand for transmission access rights all Users behind transmission system boundary B9 (see ANNEX 3 – INITIAL ANALYSIS OF AUCTION BOUNDARIES for further detail) would be subject to some pro-ration and so are likely to become liable for cost reflective final sums.

5.5.16 Impact on Users connected to the transmission system

5.5.16.1 This section considers the potential impact of the WGAA3 capacity and duration auction model on existing and potential Users connected to the transmission system. The auction process gives the Users the opportunity to fix (hedge) the long run and short run costs of using the transmission system. This provides effective risk management which should result in an efficient and economic solution (subject to resolution of the over and under recovery issues).

5.5.16.2 From the perspective of different types of User the WGAA3 capacity and duration model has the following implications

- Existing User: The proposed arrangements would replace the existing obligations under the CUSC with regard to charging liabilities and rights to use the transmission system. Existing Users (be it that they are a current (commissioned) generator or a generator with a signed Bilateral Connection Agreement but not yet commissioned) would be required to bid in the first round alongside Users that wish to use the system in the future. Note rights removed as well;

- Incremental Capacity: For existing Users that are seeking incremental capacity at a node where there is no requirement for additional wider transmission investment the charges would be based on the long run costs associated with the node.

- "Return to Service": Under the capacity and duration model existing Users can book a limited duration of transmission access then take an outage period and subsequently return to service. However, the bid to return to service would be treated on the same basis as a new entrant since the existing capacity may have been allocated to another User. Therefore there may be an investment required in transmission reinforcement which may delay a firm allocation. During this investment period, the existing User could be exposed to the short run costs if it wishes to use the system.

- New Capacity: New Users would be able to bid for new firm transmission capacity in the auction process. Any offer would take into account the investment period required. If the local and wider works can be aligned then the User can use the system with firm long term transmission connection rights from the date that the works are completed.

- "Connect and Manage": In certain circumstances, the GBSO/TO may be able to complete local works ahead of wider reinforcement works. In this case, the User can opt to complete on the basis of local works, subject to the short run costs. These short run costs would be applicable until such time as the wider reinforcement works are completed. This approach is analogous to the "Connect and Manage" arrangements currently under consideration in CAP164.

5.5.17 **Impact on GBSO/TO**

5.5.17.1 From the perspective of the GBSO and TOs, the User acceptances form the basis for revenue recovery with firm capacity charges recovering the long run marginal cost of investment in the transmission system and the constraint charges recovering the ex ante estimated short run constraint costs.

5.5.17.2 An over and under recovery mechanism is required to ensure revenue adequacy; which is the recovery of actual costs where they vary from the fixed LRMC and SRMC charges. There are a number of different options for the design of such a mechanism:

- LRMC under/over recovery could be addressed through adjustments to non locational residual;

- SRMC under/over recovery could be addressed through non locational BSUoS or

- SRMC shortfall recovery through zonal locational BSUoS or

- User specific relief from £/MWh SRMC cost in the event that the constraint costs are less than forecast

5.5.17.3 The WGAA3 capacity and duration model will have clear implications for the SO and TOs in relation to their licensed activities and their transmission price control. For example, any arrangements that fix revenues from Users whether in the form of short run or long run charges will have an impact on the amount of revenue recovery. In addition, there may be a requirement to introduce new incentive arrangements on the GBSO and or TOs in relation to short run costs and long run transmission investment. The price control and Licence may, therefore, require revision to enable the new arrangements to be implemented.

6.0 ASSESSMENT AGAINST THE APPLICABLE CUSC OBJECTIVES

6.1 The Working Group performed an initial assessment of CAP 166 original, WGAA1 and WGAA2 against the applicable the CUSC Objective(s);

(a) the efficient discharge by the Licensee of the obligations imposed upon it by the act and the Transmission Licence; and

(b) facilitating effective competition in generation and supply of electricity and facilitating such competition in the sale, distribution and purchase of electricity.

6.2 The results of this assessment are summarised in the table below.

<table>
<tr><th>Type of Auction</th><th colspan="3">Price Based
(SO indicates capacity availability and allocation is then based on price)</th><th>Capacity/Duration
(SO provides price signals in response to capacity requirements)</th></tr>
<tr><td></td><td>Original</td><td>WGAA1</td><td>WGAA2</td><td>WGAA3</td></tr>
<tr><td></td><td>Auctions of zonal capacity</td><td>Boundary Constraint Allocated at Nodes</td><td>Boundary Constraint Allocated at Nodes with Reserve Prices</td><td>Users bid capacity requirement over a number of years</td></tr>
<tr><td colspan="5">Efficient discharge of licence conditions</td></tr>
<tr><td rowspan="3">Promotes</td><td>Discovery of value of transmission access capacity and temporal nature of long-term capacity bookings would give improved investment signals</td><td>As an auction design it may have merit but it is complicated and without testing there is no indication that it is a more efficient allocation of capacity than currently</td><td>As an auction design it may have merit but it is complicated and without testing there is no indication that it is a more efficient allocation of capacity than currently</td><td>Implicit discovery of value of transmission access capacity (via Users' response to pricing signals) and temporal nature of long-term capacity bookings would give improved investment signals</td></tr>
<tr><td>As an auction design it may have merit but it is complicated and without testing there is no indication that it is a more efficient allocation of capacity than currently</td><td></td><td>Reserve pricing allows for locational pricing signals to be retained within the auction framework</td><td></td></tr>
<tr><td colspan="4">Provision of Information re requirement of capacity rights at the same time should enable the SO to plan the system in a more coordinated way than under current arrangements. However, there could be a delay to individual User's plans due to needing to wait for auction process to signal rights.</td></tr>
</table>

Type of Auction	Price Based (SO indicates capacity availability and allocation is then based on price)			Capacity/Duration (SO provides price signals in response to capacity requirements)
	Original	**WGAA1**	**WGAA2**	**WGAA3**
Demotes	Results of the auction are driven by the initial allocation of zonal transmission access capacity which requires an assumption beforehand of the capacity that Users desire	Without testing poor bidding by inexperienced Users could result in less capacity release than the current baseline	Without testing poor bidding by inexperienced Users could result in less capacity release than the current baseline	Ex-ante nature of prices could lead to an over/under recovery of revenue which could create a cross-subsidy
	The over/under recovery of revenue creates a cross-subsidy	The over/under recovery of revenue creates a cross-subsidy	The over/under recovery of revenue creates a cross-subsidy although less of an issue with reserve prices.	Potential for Users to factor the short-run costs into BM which would lead to an increase in constraint costs
	Without testing, poor bidding by inexperienced Users could result in less capacity release than the current baseline			Without testing poor bidding by inexperienced Users could result in less capacity release than the current baseline
	Based on the assumption that Users do not have existing rights which, if Users are unsuccessful in the auction, would lead them to withdraw their plant earlier than planned; thus endangering (a) the security of electricity supplies and (b) the maintenance of the reliability, safety & operation of the electricity grid system; plus it's economically inefficient (to close plant due to failure to obtain access)			Users are provided with the access rights for which they have bid in the Auction, but in reality any access above the physical capability of the system could be subject to being constrained off. This may lead Users to withdraw their plant earlier than planned; thus endangering (a) the security of electricity supplies and (b) the maintenance of the reliability, safety & operation of the electricity grid system; plus it's economically inefficient (to close plant due to failure to obtain access)
Facilitates competition				

Type of Auction	Price Based (SO indicates capacity availability and allocation is then based on price)			Capacity/Duration (SO provides price signals in response to capacity requirements)
	Original	**WGAA1**	**WGAA2**	**WGAA3**
Facilitates	Existing and new generators could compete for transmission access equally, with rights allocated to those that valued them most highly	Allows open participation	Allows open participation	Allows open participation
	Existing capacity could be reallocated with certainty to new entrants as a result of firm bookings		An approximation of both the long and short run marginal costs of the transmission system can be factored into the price of transmission access through the Reserve Price. Ensures that Users have costs appropriately targeted where over allocation of baseline capacity occurs.	Users are able to respond to pricing signals provided by the SO as part of the auction.
	Enhanced transparency		Greater Transparency for Users than offered by Working Group Alternative 1.	Transparency of pricing information revealed through auction rounds.
Frustrates	Security of Supply is at risk if the auction includes incumbent generators as they could lose all their rights			Incumbent generators are likely to get a pro-rated amount of rights, which may have some impact on security of supply
	The complexity of the auction may give an advantage to large players			Complexity of the information provision by Users could be seen as a barrier to entry and could favour the bigger players.
	Complexity of the auction could lead to larger players having an inherent advantage over smaller players as they will be able to devote dedicated resources to the auction process that smaller players may not. Also larger players may be able to smear the transaction costs of participation in an annual auction over a number of sites whereas smaller players may have many fewer sites across which to allocate these.			
	Based on the assumption that Users do not have existing transmission access rights, which undermines investor confidence and increases the regulatory risk premium placed by Users operating in the GB market, leading to higher consumer prices			

Type of Auction	Price Based (SO indicates capacity availability and allocation is then based on price)			Capacity/Duration (SO provides price signals in response to capacity requirements)
	Original	**WGAA1**	**WGAA2**	**WGAA3**
	New capacity would be allocated but with no certainty for holders as to the nature of that capacity (which could be changed or removed) in the future			
	Although an auction based allocation allows Users to compete in the first year, once a User has procured long term transmission access capacity it retains this capacity for the duration of its booking. Other new Users in future years will not be able to compete with the incumbent for this capacity only signal that they wish new capacity to be built (if none remains).			
	In removing the existing transmission access capacity of Users and reallocating it (via the GBSO) it removes the ability for Users to trade on their capacity (as now) if the economic signal exists plus its also economically inefficient (to close plant, due to failure to obtain access, rather than via an energy market signal) which damages competition			
	Fixed Price elements of both for locational charges inevitably results in additional volatility elsewhere (residual charges) in order to maintain cost-reflectivity. This volatility of prices could result in reduced market entry resulting in reduced competition. Fixing prices also will result in winners and losers as those that have fixed prices in earlier years may be at an inherent disadvantage or advantage to new Users by virtue of the assumptions made when they first connected. Again this could act as a barrier to effective competition as two otherwise identical generators find they have different cost bases against which to offer services to the market and National Grid.			

7.0 TRANSITIONAL PROCESSES AND PROPOSED IMPLEMENTATION

7.1 Transitional Processes

7.1.1 The transitional processes required are:

7.1.2 **LCN Transition:** A process will be needed to grant all existing Users an LCN MW level and a LCN Effective Date. This process will be very similar to that enshrined within the other transmission access proposals (CAP161-CAP165) that also utilise the concept of an LCN.

7.1.3 **Financial Securities (Original, WGAA1, WGAA2 only):** Should any of the CAP166 Original Amendment, WGAA1 or WGAA2 be approved then Users will need to notify whether they wish to move onto the system of securities introduced by such variants or whether they wish to remain on the "pre-CAP166" system of securities.

7.1.4 **Auction Transition:** The process steps required to establish and run the first auction to allocate long-term transmission access rights will need to be fully developed.

7.2 Implementation Dates

7.2.1 The Working Group proposes that CAP166 should be implemented on a 1st April at least eighteen months after an Authority decision. The 1st April date is driven by the annual charges for entry capacity, which apply from the 1st April each year. Taking into account the time required to develop and test the IT system that would be required to implement the amendment and also to allow Users the opportunity to apply for a LCN in advance of the new auction processes commencing, the Working Group believes that there should be a 16-18 month lead time from a decision by the Authority and implementation of the associated changes. It should be noted that this lead time is based on indicative analysis only, and further work is required to establish a more accurate lead time.

7.2.2 In order that transmission access rights may be allocated by an auction and then from the 1st April in the year following such an auction, Power Stations may operate in accordance with these rights, the transition process outlined in 4.1.4.41 above would require an Authority decision in advance of the 1st December, 16 months prior to the 1st April "Go-Live" date.

7.2.3 By way of example for a 1st April 2011 "go-live date", a transitional process would need to come into effect from 1st December 2009 that would permit existing generators and any new applicants to submit an LCN application. National Grid would then need to prepare LCN offers that would act as the pre-cursor to entry into the first auction to be held in September 2010. Only those Users who had accepted their LCN offer by 1st June 2010 (or who had referred this offer by 1st June and subsequently accepted it prior to 15th August 2010) could participate in the first auction.

7.2.4 Similarly for an April 2012 "go-live date", a "go-active date" of 1st December 2010 would be required.

7.2.5 Clearly implementing the amendment 16 months in advance of the first auction would just allow the LCN transition process to be completed. However to allow Users further time to develop their LCN applications the Working Group felt it more prudent to allow an eighteen month lead time in which from a decision from the Authority to the time where Users operate using transmission access rights procured via a CAP166 auction.

7.2.6 National Grid suggested that implementation should not be restricted to these two specific dates, but should instead be open-ended, such that implementation was on the first 1st April at least eighteen months after an Authority decision, whenever that was.

7.2.7 The majority of Working Group members believed that implementation should be fixed as being on either of the two specific dates identified above. They believed that the Authority should not require more than 18 months to reach a decision (assuming that a final CAP166 Amendment Report is submitted to the Authority in March 2009), especially given the urgency of the Transmission Access Review timetable that has been impressed on the industry. To permit later implementation dates, it was argued, would be to prolong the regulatory risk faced by both existing plants and new entrants, and would introduce the possibility that, by the time a decision was reached, the reasons for, and parties' views and assessment of, the amendment may have changed.

7.3 Implementation

7.3.1 The Working Group noted that due to the risks presented by the development of the IS infrastructure necessary for an auction of the type proposed by CAP166 and its Alternates, CAP166 could be implemented such that the soonest long-term access could be allocated by auction for the first time would be for Financial Year 2011/12. However there remained a possibility that implementation would have to be delayed a year allowing long-term access to be allocated by auction for the first time for Financial Year 2012/13. By way of examples, this may be as a result of for instance:

- The rules for the auction process may be such that it is not possible for any algorithm to meet the objective of the rules.
- If it is possible, then there is a risk that a suitable algorithm may not be developed in time.

7.3.2 The Working Group therefore recommended that an Implementation Group be established whose purpose would be to oversee the implementation of all aspects of CAP166 implementation including both National Grid's IS system developments and Users' IS System developments and judge for which Financial Year long-term access could be first auctioned for and would pass their views to the CUSC Panel by a certain date who would then make the final decision for which financial year any approved auction arrangements should apply, subject to an Authority decision to veto.

8.0 IMPACT ON IS SYSTEMS

8.1 The conclusions of National Grid's initial IS impact assessment for the Original Amendment and the Working Group Alternative Amendments are summarised below. These conclusions are indicative only and are subject to change following further analysis.

8.2 Costs are identified as falling into one of three broad categories (less than £500k, £500k to £1m, and £1m to £5m). Timescales are indicated by stating whether or not the necessary systems can be delivered in time (for an assumed "first run" date) given various starting dates for the projects to deliver the systems. This approach has been followed for all of the CAPs in the TAR suite in order to provide consistency.

8.3 For CAP166 three systems are likely to dominate the costs and timescales for IS developments. These are:

1. The auction system for communication between National Grid and bidders. It is likely, although not certain, that this would be procured from an external supplier. The anticipated timescales for procurement and development of such a system make delivery before December 2010 highly unlikely.

2. The optimisation algorithm for allocating the TEC based on the bids received. The complexity of this algorithm will depend upon the auction rules agreed by the industry. Some of the issues relating to the algorithm required for the Original, WGAA1, and WGAA2 are highlighted in points a to d below. The requirements for WGAA3 are not yet certain. However, it has be assumed that an algorithm of some kind will be required for both.

a. Experience shows that implementation of such optimisation algorithms (even using commercially available packages) can be difficult. Furthermore, the results produced by the optimisation algorithm may require a long period of scrutiny by the industry before being deemed acceptable.

b. In particular it should be noted that issues such as the feasibility of the problem being solved, the optimality of the solution, and the possible degeneracy of the solution can often present difficulties. Resolving such difficulties can increase development time and may require discussions with the industry in order to find acceptable resolutions.

c. At this stage it is very difficult to estimate the timescale and cost for developing the algorithm. The algorithm required for the Original is thought to be simpler than that required for WGAA1 or WGAA2 and this is reflected in the cost estimates. The delivery of a suitable algorithm (for the Original, WGAA1, or WGAA2) by December 2010 might be possible. However, some compromises might be necessary to meet this date. These compromises might need to be reflected in the rules of the auction and agreed with the industry.

d. Cost and licencing issues will need to be addressed when considering provision of a copy of the optimisation algorithm to bidders.

3. The system for charge calculation and settlement. Some of the options proposed as part of WGAA3 might require some charges to be calculated daily and settled daily a number of days in arrears. Provision of a system capable of daily charge calculation and daily settlement could be time consuming and costly.

8.4 A high level summary of the systems required for the Original, WGAA1, WGAA2 and WGAA3 is given in the table below.

	Auction system	Algorithm	System capable of daily charge calculation and daily settlement
Original (Zonal)	•	•	
WGAA1 (Nodal)	•	•	
WGAA2 (Nodal + reserve price)	•	•	
WGAA3 (Capacity and duration)	•	•	•*

* only required for some options

It should be noted that there are a number of areas in which the required functionality is not yet clear. Where this is the case no attempt has been made to assess the impact on IS systems. Examples include:

1. Calculation of cleared prices (possibly required for the Original, WGAA1, and WGAA2).

2. Identification of the settlement periods in which each constraint is active (possibly required for WGAA3). Provision of a system to do this could be time consuming and costly.

8.5 Delivery and cost estimates for Original, WGAA1, WGAA2 and WGAA3 are given in the table below.

	Assumed date of decision by the Authority	First run	Months available if work begun after the Authority decision	Months available if work begun in Dec-08	Deliverable if work begun after Authority decision?	Deliverable if work begun in Dec-08?	<£500k	£500k - £1m	£1m - £5m
Original (Zonal)	Jun-09	Dec-10	17	23	NO	YES		•	
WGAA1 (Nodal)	Jun-09	Dec-10	17	23	NO	YES			•
WGAA2 (Nodal + reserve price)	Jun-09	Dec-10	17	23	NO	YES			•
WGAA3 (Capacity and duration)	Jun-09	Dec-10	17	23	NO	YES			•

Where the above table indicates that if work starts in December 2008 it is feasible to deliver the necessary systems in time for the stated first run date, it may be assumed that any delay to the start of work would lead to an equivalent slip in the first run date.

8.6 There are many limitations on the scope of this initial IS impact assessment. Examples include:

1. Only the impact on National Grid's IS systems has been assessed. The impact on CUSC parties' IS systems has not been assessed.
2. Only the costs of the projects required to deliver the necessary systems have been estimated. Additional run-the-business costs relating to IS systems are likely to be incurred, these have not been estimated.
3. There has been no analysis of any IS effort or systems required during the transition from the existing arrangement to the new arrangements.
4. Each CAP and each option associated with it has been assessed in isolation. The impact on time and cost of multiple projects running in parallel has been ignored.
5. National Grid has not assessed the work against its existing IS workload to assess resource availability.

8.7 A more accurate IS impact assessment for the Original Amendment and the Working Group Alternative Amendments would require a number of items which are not currently available. These include:

1. Definition of the business requirements for the Original Amendment and the Working Group Alternative Amendments in more detail than has been discussed by the Working Groups.
2. Confirmation of certain technical assumptions which have been made during the initial analysis.
3. Identification of the combination of CAPs 161-166 that is to be implemented and for each CAP that is to be implemented whether the Original Amendment or one of the Working Group Alternative Amendments is to be implemented.

8.8 Without prejudicing the decision of the Authority, National Grid intends to undertake further IS analysis between November 2008 and March 2009. This analysis will attempt to address point 1 above by making assumptions about the most likely detailed business requirements and will attempt to address point 2 by undertaking a number of feasibility studies. To address point 3 the analysis will consider the consequences a variety of possible combinations. The results of this analysis will be made available to CUSC parties and the Authority.

9.0 IMPACT ON THE CUSC

9.1 The impact on the CUSC would include, but may not be limited to, changes to Sections 2 (Connection), 3 (Use of System), 6 (General Provisions) and 9 (Interconnectors). There would also be consequential changes required to Section 11 (Interpretation and Definitions), and to the CUSC Schedules and Exhibits.

10.0 IMPACT ON INDUSTRY DOCUMENTS

Impact on Core Industry Documents

10.1 No impact on Core Industry Documentation has been identified.

Impact on other Industry Documents

10.2 Related modifications to the Use of System Charging Methodology are currently being prepared to ensure that any Charging Issues that may materialise should CAP166 or any of its Alternatives be approved.

10.3 Changes to the System Operator – Transmission Owner Code (STC) would be required in order that generators' long-term transmission access rights secured through auctions (and the expiry of such rights) are taken account of by Transmission Owners when planning to accommodate additional transmission capacity requests. Additional STC changes may be required to "back-off" in Scotland any other changes to National Grid's User facing obligations – specifically in the construction of incremental capacity supply functions.

10.4 If CAP166, WGAA1, WGAA2 or WGAA3 were to be approved changes to the SQSS may be appropriate. The GBSQSS Review Group has embarked on a major review of the GBSQSS, which will include consideration of this issue.

11.0 WORKING GROUP VIEW / RECOMMENDATION

11.1 The Working Group voted on whether they believed the original or the Working Group alternatives are **better than the current baseline**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	0	13	0
WGAA1	0	13	0
WGAA2	2	11	0
WGAA3	2	11	0

11.2 Next the Working Group voted on whether they believed the original or the Working Group alternatives are **better than the original amendment**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	-	-	-
WGAA1	1	8	4
WGAA2	3	6	4
WGAA3	4	8	1

11.3 The majority of the Working Group believed WGAA1 and WGAA2 were not better than the original or the baseline. The Chair of the Working Group with support of some members of the Working Group took forward WGAA1 and WGAA2.

11.4 The Working Group voted on which of the proposals they believe best facilitates the applicable CUSC Objectives. The result of this vote is described in the following table:

Proposal	Best
Original	**0**
WGAA1	**0**
WGAA2	**2**
Abstained	**11**

11.5 After the Working Group extension the Working Group voted again on which of the proposals they believe best facilitates the applicable CUSC Objectives. The result of this vote is described in the following table:

Proposal	Best
Original	**0**
WGAA1	**0**
WGAA2	**0**
WGAA3	**3**
Abstained	**10**

12.0 NATIONAL GRID VIEW

12.1 Of the four options (the CAP166 original proposal, WGAA1, WGAA2 and WGAA3) contained within this Amendment Report National Grid is supportive of WGAA2 and WGAA3 only.

12.2 National Grid is broadly supportive of both a price based and a capacity duration style of auction for allocating transmission access rights as it believes both will give the opportunity for User's who value access to the GB transmission system the highest, to obtain that access. National Grid views this against the existing system which can frustrate new Users who may value that capacity more highly than existing access rights holders but have no choice but to await new transmission infrastructure build rather than directly compete with existing access right holders.

12.3 However the two price based auction models presented by the original CAP166 amendment proposal and WGAA1 do not in National Grid's view better facilitate the applicable CUSC objectives. In the case of the original amendment this is down to the fact that there are significant interactions between zones which means that practically it is very difficult to define them other than if they are kept small. These small zones then have very few generators within them defeating the initial objective of allowing for the free sharing of TEC within them. Therefore the boundary model methodologies are clearly better than the zonal. WGAA1, though a boundary constraint model, does not have any concept of a reserve price within its methodology and it retains the existing levels of over-allocated TEC within the baseline capacity released. This effective removal of a reserve price and the signals to compete on volume would likely see a collapse in the auction price and in turn lead to significant areas of the existing transmission system being left with little or no locational pricing signal, which would not allow for a cost-reflective charging system to be retained.

12.4 This then leaves WGAA2 and WGAA3 as the options National Grid believes would better facilitate the applicable CUSC objectives if they were ultimately to be implemented. Both offer a mechanism by which parties who value rights more than others may procure them, either in the case of WGAA2 by outbidding others in an annual auction, or in WGAA3 by committing to purchase a volume of short-run priced rights where they effectively share additional "over-allocated" rights with others who are also willing to do so in advance of transmission system reinforcements.

12.5 In National Grid's view, both WGAA2 and WGAA3 require further development, in particular to the securities that form part of WGAA2 and to a lesser extent WGAA3. In the case of WGAA2 this will be to develop a set of arrangements to allow wider works to be securitised against Users, and in the case of WGAA3 to assess the effectiveness of the fixed cost reflective final sums methodology proposed. There is clearly also development work to be done for either WGAA2 or WGAA3 on fully working up a full SO Long Term Release Methodology that is compatible with the principles developed by the Working Group, an auction model and IS System that will allow Users to fully participate in the auction process and also the required charging amendments to be progressed under separate Charging governance. National Grid believes however that all of these items of further work, though complex can be taken forward to an appropriate conclusion should either WGAA2 or WGAA3 ultimately be approved by the Authority.

13.0 INDUSTRY VIEWS AND REPRESENTATIONS

13.1 Responses to the Working Group Consultation

13.1.1 The following table provides an overview of the representations received.

13.1.2 Copies of the representations are contained in Working Group Report Volume 2.

Reference	Company
CAP166-WGC-01	Association of Electricity Producers
CAP166-WGC-02	British Energy
CAP166-WGC-03	British Wind Energy Association
CAP166-WGC-04	Centrica
CAP166-WGC-05	Drax Power
CAP166-WGC-06	EdF Energy
CAP166-WGC-07	EON UK
CAP166-WGC-08	ESB International
CAP166-WGC-09	Fairwind (Orkney) Ltd
CAP166-WGC-10	First Hydro Company
CAP166-WGC-11	Fred Olsen Renewables
CAP166-WGC-12	GDF SUEZ
CAP166-WGC-13	Immingham CHP LLP
CAP166-WGC-14	Intergen
CAP166-WGC-15	Magnox North
CAP166-WGC-16	National Grid Electricity Transmission
CAP166-WGC-17	Renewable Energy Association
CAP166-WGC-18	RWE npower
CAP166-WGC-19	ScottishPower Energy Wholesale
CAP166-WGC-20	Scottish Renewables
CAP166-WGC-21	Scottish and Southern Energy
CAP166-WGC-22	Welsh Power
CAP166-WGC-23	Wind Energy
CAP166-WGC-24	Powerfuel Limited

13.1.3 The following table provides an overview of the WG Consultation Requests received. Copies of the representations are contained in Working Group Report Volume 2.

Reference	Company	Details of the proposal
CAP166 WGCR-01	National Grid Electricity Transmission	An Alternative based upon WGAA1 as set out in the report, but with the exception that the auctions are settled according to a Pay as Bid principle and not through a cleared price
CAP166 WGCR-02	National Grid Electricity Transmission	An Alternative whereby the baseline capacity released through the auction is greater than that which currently physically exists on the GB Transmission System, and where a locational reserve price is set in the auction to prevent this over-allocation of capacity allowing the auction prices to collapse towards £0/kW. This request would apply across each of the original and any alternative amendments that are ultimately taken forward
CAP166 WGCR-03	National Grid Electricity Transmission	An Alternative whereby the baseline capacity auctioned is equivalent to the existing physical network capacity only with the proviso that no reserve price would be set. This request would apply across each of the original and any alternative amendments that are ultimately taken forward
CAP166 WGCR-04	Welsh Power	An Alternative whereby the principles put forward by WGAA1 would be largely retained with the caveat that when the incremental capacity release supply function is calculated it should be unconstrained after 5 years.

13.2 Responses to The Company Consultation

13.2.1 The following table provides an overview of the representations received. Copies of the representations are contained in Amendment Report Volume 2.

Reference	Company	Comments
CAP166-CR-01	AEP	Does not support CAP166 original or any of the alternative amendments. Believes that changes would undermine investor confidence and security of supply. Does not believe there has been sufficient time to fully develop the proposals and that as a result there is a general lack of understanding of the proposals around industry players.
CAP166-CR-02	British Energy	Does not support CAP166 original or any of the alternative amendments. Concerned that the proposals create substantial regulatory risk and may have security of supply implications. Does not believe any of the proposals have been developed fully or adequately tested. Believes that auction approach is fundamentally wrong as access is not a commodity and that it would be overly costly and complex with no cost benefit to show that these costs/complexity are justified.
CAP166-CR-03	BWEA	Views on CAP166 Original, WGAA1 and WGAA2 remain as in response to Working Group Consultation. Believes that WGAA3 does not offer a better alternative than notably CAP164 – Connect and Manage. Also concerns that WGAA3 driven by a desire to re-allocate existing rights a move for which BWEA sees little justification. General view that lack of time for industry and Working Group assessment has hampered evaluation of the proposals. Another concern is that approaches that charge for access based upon constraint costs result in a User's access costs being based upon the decisions of others in the energy market over which it has no influence.
CAP166-CR-04	Centrica	Does not support auctions and maintains the view that the timely build of transmission negates the case for the introduction of complex and expensive auctions that ere unlikely to result in efficient outcomes. Specifically Centrica believes that auctions will: (1) not release more transmission capacity that current baseline; (2) have negative impacts on UK generation investment; (3) introduce regulatory risk through removal of existing access rights; (4) create security of supply issues; (5) do not give better investment signals to TOs when compared with the existing arrangements.
CAP166-CR-05	Drax Power	Does not support CAP166 original or any of the alternative proposals. Believes auctioning to introduce regulatory uncertainty at a time where there is a requirement to significantly ramp up generation and transmission investments to ensure security of supply may be maintained. Believes that auctions would only allow user who value capacity more than existing users (the original objective outlined by Ofgem/BERR in their Transmission Access Review Report) to obtain it in the first auction or when the rights obtained by others in that auction expire. Believes the pro-ration in the WGAA3 means that units will be required to shut or run at part-loaded levels, either prejudicing security of supply in the medium term or increasing greenhouse gas emissions.

Reference	Company	Comments
CAP166-CR-06	EdF Energy	Does not support CAP166 original or any of the alternative proposals. Believes that auctions introduce significant investment uncertainty and damage security of supply. The auction would not be fair as subsidised players compete against non-subsidised players. Believes there to be certain technical flaws with the price-based auction approach (WGAA1 and WGAA2). Believes the pro-rata rules for allocating physical capacity in WGAA3 mean that it is impractical. Believes over-recoveries of revenues through auctions will not be offset against TNUoS and thus will form a windfall tax.
CAP166-CR-07	Eon	Raises a number of issues with CAP166 original and its alternative amendments. Notes that a number of compromises have had to be made in the auction design to enable it to function in the simple models that have been able to be produced. Notes that only by layering the existing TNUoS rules over a price based auction could it be seen to retain effective investment signals. Does not believe that it will be possible for generators to forecast closure dates many years into the future as effectively required by all forms of CAP166 so would give artificial closure signals not clear ones. In WGAA3, believes that the complexity associated with calculating the short run prices in the required timescales between auction rounds (likely around a day) would mean simplifications required leading to a less efficient price. Compares unfavourably with CAP164 Alternative where calculation envisaged occurring over a longer period. Notes proposal yet to be rigorously tested and has a number of outstanding issues, therefore if it were to be approved it would represent the approval of a "shell" amendment which would not be desirable as a future precedent.
CAP166-CR-08	ESBI	Offers cautious support for CAP166 albeit they remain concerned with the scale of the design and implementation challenge and the absence of certainty of capacity delivery offered by CAP166 original and its alternatives. Of the pricing auction model is most supportive of a zonal approach as outlined in the original amendment and would welcome further work into the feasibility of such an approach. Also believes there to be some benefits in the Capacity Duration model offered by WGAA3 although believes further development of it is still required. Notes that 2 weeks to comment on 600+ pages of consultation has not allowed for a fully considered response to all of the issues in the consultation.
CAP166-CR-09	Fred Olsen Renewables	Believes that WGAA3 does not offer a better alternative than notably CAP164 – Connect and Manage. Also concerns that WGAA3 driven by a desire to re-allocate existing rights a move for which FORL sees little justification. Does not believe that sufficient information is available on WGAA3 to allow FORL to form a firm view on its effectiveness (or not). Does not generally believe that targeted costs of constraints is necessarily a good deal for consumers as they ultimately pay for new generation and given the Renewables obligation and where competitive pressures are mostly in the development phase, there is potentially limited scope for competition for access to bring down prices.

Reference	Company	Comments
CAP166-CR-10	Immingham CHP LLP	Strongly opposed to CAP166 original and its alternatives. Does not believe that existing rights can be withdrawn other than through legislation and significant compensation. Believes a value based auction would over-recover revenues compared to the regulated revenue allowance. The two principles appear incompatible and akin to the entry arrangements for gas where they state there have been significant issues that do not appear to be addressed in CAP166. Questions why National Grid needs an auction to give investment signals given the contracts and commitments already in place from Users. Believes that CAP166 and its alternatives all would be costly and resource intensive and add significant complexity. This would in turn inhibit new investment and increase the costs of capital. Does not believe that the period allowed for assessment of CAP166 is sufficient and thus the risk of unintended consequences by the approval of CAP166 is too great.
CAP166-CR-11	Intergen	Does not support CAP166 or any of its alternatives. Notes that it believes it has evergreen rights which may not be revoked by a CUSC Amendment Proposal. Also notes the time constraints have not allowed the Working Group to fully assess the proposal. Also due to resource implications of attending 30+ Working Group meetings, Intergen could not participate fully in the Working Group and therefore had to attempt to analyse the output in a matter of days. This has meant it has proven difficult to pick out the underlying principles of each auction design. Believes the complexity of the processes all present a barrier to entry for smaller independent generators. Believes auctions would hamper the achievement of the 2020 renewable targets and exacerbate security of supply worries by driving off new investment.
CAP166-CR-12	International Power / First Hydro	Views on the Original, WGAA1 and WGAA2 expressed in the Working Group consultation stand. Does not support WGAA3 but believes it to be better than CAP166 original, WGAA1 and WGAA2. Raises a number of specific issues with regard to WGAA3: (1) That the existing SQSS approach to allocating capacity would in their view release more capacity than that put forward by WGAA3; (2) that the pro-rata element of WGAA3 will lead to a sub-optimal allocation of access rights as it ignores things such as likely load-factors or merit orders (3) believes that it will increase investment risks for new generators and also act as an impediment to investing in existing capacity; (4) Unlikely that the existing interactions between planning consent and grid connection will be improved by an auction.
CAP166-CR-13	Powerfuel Power Ltd	Does not support moving to an auction based system at this time. Believes process has been characterised by a forced pace and lack of regard for the views of those already consulted within the industry. Believes there to be a consensus view that insufficient analysis has been able to be completed in the time available and that this should not form the basis of the assessment of changes of the magnitude put forward by CAP166. Believes that CAP166 could increase regulatory risk and drive up the cost of capital. Believes the proposals are also anti-competitive as new entrants more likely to project finance their power stations and larger players are in a better position to dominate auctions and develop complex bidding strategies. Also believes that the existing access rights it has cannot be removed without compensation.

Reference	Company	Comments
CAP166-CR-14	Renewable Energy Association	Does not support CAP166 original or any of the alternatives as fundamentally do not believe access to be an appropriate product to auction. Believes this as (1) access is a monopoly provided product which should be provided at regulated cost (as now) rather than in a value based auction; (2) believes the fact that the auction bid will only form part of the charge (as there is likely to be a residual; charge to ensure allowed revenues are recovered) means that a User can never actually signal what it values access at as it cannot know the eventual price it will pay; (3) believe auctions to be an inefficient way in which to determine the need for new capacity; (4) do not believe it is right (or possibly legal) to remove the rights of existing generators. Ultimately they believe auctions could never be truly efficient and to be so they would have to be extremely complex and opaque.
CAP166-CR-15	RWE	Does not support CAP166 original or any of the alternatives. Concerned about the adequacy of the proposals regarding the recovery of cost-reflective locational elements of the current charging arrangements that it views as an indispensable element of the current transmission charging regime.
CAP166-CR-16	ScottishPower	Does not support CAP166 original or any of the alternatives. Believes existing evergreen rights cannot be removed. Believes that the consultation represents “work in progress” and thus does not offer sufficient information for firm conclusions about the impact on a User’s business to be drawn. Views on CAP166 original, WGAA1 and WGAA2 are as in the response to the Working Group consultation. Believes WGAA3 would lead to existing Users who had not caused transmission constraints and who have paid for the deep reinforcements necessary to accommodate them having to pay again through initially short-run and latterly long-run costs. Also believes that the short-run costs may be so high as to effectively strand already constructed generation assets. Believes that targeting back operational costs will deter investment in reaching renewable targets as the areas with greatest renewable resource also have historically not benefited from transmission investment resulting in higher operational costs. WGAA3 would not also remove the issue of potential discrimination against any User who may not be able to participate in the first auction. Finally notes that constraint costs form a key signal to TOs and the GBSO for the need for investment and that targeting these onto Users would remove this and weaken the signal for the need for new investment in transmission.
CAP166-CR-17	Scottish Renewables	Does not support CAP166 original or any of the alternative proposals. Believe original WGAA1 and WGAA2 would seriously undermine UK climate change objectives because they are complex and would weaken investment signals. WGAA3 may benefit from further consideration. Points for further development: the potential for discrimination against Users who cannot participate in the first auction round, the method for returning over recovery of constraints revenue and the risk of unused network infrastructure. Supports connect and manage.

Reference	Company	Comments
CAP166-CR-18	Scottish and Southern Energy	Does not support CAP166 Original or any of the Alternative Proposals. Does not believe evidence has been presented that there is a meaningful defect to the CUSC. Firmly believe existing Users have evergreen rights to use the transmission system. Believes CAP166 poses a significant threat to the security of electricity supply which should be given urgent consideration by the CUSC Panel. Believes the current charging methodology is undermining UK Government policy and that developing an access regime based on this is an issue. Concerns regarding the treatment of negative zones, transferability, the implication for distribution connected generation, users right to appeal and times of network unavailability. Do not believe it is permissible for non-physical players to be involved in booking or holding transmission rights. Concerned about lack of testing. Concerned CAP166 could lead to a reduction in the total TEC in GB. Does not support WGAA3 particularly the suggested approach for dealing with the pro-rata of access, the need for many power stations to sign new construction agreements, the validation run and the potential for short-run over/under recovery. Has serious reservations about further work being undertaken by National Grid to develop CAP166 before an Authority decision.

13.3 Views of Panel Members

13.3.1 The CUSC Panel voted on whether they believe the original and the Working Group alternatives are better than the current baseline. The results of the vote are described in the following table:

Proposal	Better	Not better
Original	0	8
WGAA1	0	8
WGAA2	1	7
WGAA3	1	7

13.3.2 The majority of the Panel do NOT believe that any of the Original or the Alternative Proposals is better than the current baseline.

13.3.3 The CUSC Panel voted on which of the proposals they believe best facilitates the applicable CUSC Objectives. The results of this vote is described in the following table:

Proposal	Best
Original	0
WGAA1	0
WGAA2	1
WGAA3	1
Abstained	6

13.3.4 The majority of the CUSC Panel did not believe that any of the Original or Alternative Proposals is best and so abstained from this vote. One Panel member felt WGAA2 is the best option and another Panel member felt WGAA3 is the best option. For the avoidance of doubt the majority of CUSC Panel members do not believe that any of the CAP166 Original or Alternatives should be approved by the Authority.

13.3.5 Several members of the Panel believe that if the proposals were approved they would have a negative impact on security of supply. Some Panel members also have concerns that the amendments were damaging to regulatory stability. Some Panel members believe that the proposed arrangements are very complex and would introduce an administrative burden on both the system operator and the wider industry. Some Panel members are concerned that the proposals would not result in an optimal release of capacity. Some Panel members also have concerns that there are gaps in the report and that there has not been enough time to test the auction models so the Panel do not fully understand the potential impact of the proposals.

13.3.6 One Panel member considers that WGAA2 and WGAA3 would allow new Users to connect sooner and improve investment signals. This Panel member believes that transmission investment signals are better when you have a finite access right backed by a commitment to pay for it, as provided under WGAA2 and WGAA3.

13.3.7 The CUSC Panel also discussed the proposed implementation date and agreed with the majority Working Group recommendation that any implementation of the CAP166 proposals be restricted to the two dates specified in section 7.2 of this report. Namely if an Authority decision is made prior to 1st December 2009 then implementation could take place on 1st April 2011, and should an Authority decision be made on or after 1st December 2009, but before 1st December 2010 then implementation should be on 1st April 2012.

13.4 Views of Core Industry Document Owners

13.4.1 None received.

ANNEX 1 – WORKING GROUP ISSUES LIST

The following list of issues summarises the Working Group's view of the areas it needed to fully develop to enable industry participants and the Authority to robustly consider the proposals put forward by CAP166.

The Working Group felt that it was unable to consider all of the issues fully in time for this Working Group consultation, and so the list of issues that follows is colour-coded:

- Red Text denotes issues that the Working Group feels it has considered fully and its views are set out in this Working Group Consultation
- Blue text denotes issues that the Working Group believes it will be able to fully consider prior to issuing to the CUSC Panel its Final Working Group Report
- Green Text denotes issues that will be taking forward under a separate Charging Consultation
- Black text denotes issues that will be considered in any Implementation plan should the Authority ultimately approve CAP166 or any of its Alternatives

Issues List

- Definition
  - Process for, and timing of, long-term auctions (set out in section 4.3), including detailed business rules (to be left until any implementation process)
    - Flow chart, for existing post-commissioning, existing precommissioning and new precommissioning (included as an Annex 2 to the Working Group report)
  - Interaction of local and wider
    - Application / qualification process and required agreements (Section 4.3)
    - Security (Section 3.5)
    - Timing and frequency of auctions (3.4 and 4.3)
  - Embedded generation (generically set out that all Embedded generators that currently have a TEC will be subject to the auction process to retain wider access rights)
  - Reallocation mechanism – resolving under- and over-recoveries (via a separate charging pre-consultation)
  - Financial or physical right? (section 4.7)
  - Compensation rights – buyback rules, scaling and issues with late delivery, also CAP048 type issues (section 4.7)
  - Baseline capacity (fundamentals set out in the report, however exact baseline capacities not yet calculated)
  - Methodology statements, including substitutability
  - Information flows (Set out in section 3.4 & Annex 2 – Flow Chart)
  - How many constraint boundaries are required?
  - Example Constraint boundaries and commentary around them (included as Annex 3)
  - Bid evaluation process (section 4.5)
  - Auction duration and rounds (initial proposals included in section 4.3, yet to be confirmed)
  - Closure rules
  - Ancillary services (section 4.8)
  - Treatment of unsold capacity (section 4.5)
  - Transition and implementation
  - Auction governance

- Testing (benefits)
  - Developing excel model – one year, single round initially – add under- and over-recovery (section 4.5)
  - trade off between allocation of rights and ability of parties to play the game (transparency / intuitive signals)
  - Beta Model for wider industry testing (Feb 2009)
  - What is being optimised? Capacity release or auction revenue or economic release of incremental capacity (section 4.5)
  - Impact of reserve prices (collar in importing zones only – section 4.5) follow up in subsequent charging pre-consultation
  - Build more representative model (Beta model)
    - Test normally
    - Multiple years
    - Test impact on types of parties
    - Portfolio impacts
  - Does price give players useful information?
  - Test original zonal model (no longer required as original no longer preferred model)
    - How much does outcome depend on initial allocation of baseline zonal capacity?
  - Test against current process
  - Specification of central and interface systems (Feb. 2009)
  - In importing zones how do we reflect parties participating in the short-term? (section 4.5)

- IS Specification (Costs)
  - Web interface?
  - Cost of central systems and for Users

- SO/TO incentives
  - Identify issues to be taken forward

ANNEX 2 – HIGH LEVEL PROCESS FLOW-CHART

The following flowchart was developed by the Working Group to assist in its understanding of the end-to-end process

High Level Auctions Process

Transition of Existing projects

Category 1: Existing Connected Generators
Those generating units which are subject to a BCA/BEGA and which also have completed and energised local connection works

Category 2: Existing Pre-Connection Generators
Those generating units which are subject to a BCA/BEGA but for whom local connection works are currently under construction or are due to be constructed through a Construction Agreement and will not be completed by a "Transition Date". Likely to be 1st July in the first auction year

Enduring process

Category 3: New Applicants
New generation projects that have yet to apply for a connection to the GB Transmission System by the "Transition Date"
NB Such projects may only participate in the Auction process once they have a signed Connection Agreement (e.g. BCA or BEGA)

Local Connection Nominations (LCN)

LCN Allocation Process

The Local Capacity Notification has the following key properties:

- **Participation in the auction for wider auction access is contingent on whether Generator has an effective LCN** - I.e. a Generator may only bid for wider access through the auctions process in years where it has a valid LCN.
- All LCNs will consist of a MW level and date from which they are effective (and in a finite local rights model also a date until which the rights are valid)
- **Access procured through auctions may only be procured up to the MW level of access granted by the LCN**

Transitional Arrangements for each Category of Generation from the existing TEC arrangements to the new Auction Arrangements is detailed in the following boxes

LCNs for Generator Connections subject to a Variation to Connection Design will be retain such variation to connection design moving forward into any auctions based process for allocation Transmission access. Such access would still be subject to any pre-existing mechanisms to reduce generation output in the event of 1 or more specified faults on the GB Transmission System

Category 1 Generators

Stage 1: Default Arrangements

Generator will automatically receive a LCN MW level effective from the Auction Go-Live Date. For year 1 auctions the default LCN MW level will be equal to the TEC specified in the Generators Bilateral Agreement effective on 31st May in the year of the first auction. If the TEC Level is staged over a number of years this would be reflected in a staged LCN MW level.

Stage 2: Nomination

All Category 1 generators will be entitled to apply via a Mod App (or other as yet undefined transitional process) to increase their LCN rights above their existing TEC up to a maximum of their Power Station CEC (if such headroom exists). Each such request would need to be assessed by National Grid to examine if any local works are required to facilitate this. In the event that there are works required National Grid would produce a Mod Offer within the normal 3 month timescales, leaving the Generator with up to three months to accept this offer. The offer would contain within it a year in which these local works can be completed to make the LCN available. this year is determined by a process detailed below ("LCN Amendments for Transitional Projects")

For a Category 1 Generator to be certain of its LCN rights into both the first and future years and hence the maximum Wider Auction Access it may procure in each year for the initial Auction it should apply for an increased LCN level no later than 6 months prior to the cut-off date for the first Auction I.e. the 1st January in the year Auction Go-Live occurs.

Category 2 Generators

Stage 1: Default Arrangements

Generator will automatically receive a LCN MW level effective from the date it would have received TEC. For year 1 auctions the default LCN MW level will be equal to the TEC specified in the Generators Bilateral Agreement effective on 31st May in the year of the first auction. If the TEC Level is staged over a number of years this would be reflected in a staged LCN MW level.

Stage 2: Nomination

As with the Category 1 Generators, Category 2 Generators may apply to increase and/or bring forward their allocation of LCN - for instance if a User currently has a Bilateral Agreement with a TEC value effective in 2017 it may choose to apply to bring this date forward if it believes it may be able to construct its Power station earlier and that it values wider Auction Access more highly than an existing generator.

As with Category 1 generators such an application would need to be progressed via Mod App, and for the Generator to know for the first Auction what its precise LCN rights will be moving into future years, it would have had to have submitted such a Mod App by 1st January in the Year of the first Auction.

Category 3 Generators: Enduring Process

Stage 1: Nomination

NB There is no default option in the enduring process

Under the enduring process a Generator would indicate its desired LCN level and its desired effective date for the LCN within its Connection Application to National Grid.

In producing the Connection Offer National Grid would then indicate the earliest date at which the Local Works to facilitate the LCN may be completed - which will be the date from which the LCN is effective and hence form the earliest date from which the Generator may procure Wider Auction Access in the annual Access Auctions.

LCN Amendments for Transitional Projects

The following approach is that developed by the working group to allow generatorsto request that National Grid examines the options for bringing forward its LCN effective date.

The first stage of the allocation process will then come into effect to allow users to explore a change their local access rights. Each User that wishes to advance and/or increase their LCN from its default TEC value will signal this intent to National Grid (this may be through a Modification Application or some other as yet undefined transitional process). National Grid will then assess the request; in the case of the advancement of the LCN calculating two dates the "earliest LCN date" and the "backstop LCN date". The "earliest LCN date" will be that date by which if works to deliver the desired LCN capacity were commenced from the beginning of the next financial year and if that project was considered in isolation, then the "earliest LCN date" at which the LCN could become effective. The "back-stop LCN date" is calculated using a similar process but considers the earliest date by which all projects that wish to advance their LCN can have the works delivered to do so. It is clear that in all cases the "earliest LCN date" <= "back-stop LCN date". Any projects that wish to increase their LCN MW level will also have an assessment of whether there are any additional local works necessary to accommodate this and if so this may impact upon one or both of the offered "earliest LCN date" and "back-stop LCN date". Both the notified (offered) "earliest LCN date" and "back-stop LCN date" will be conditional on the results of the next wider access auction.

Following the notification of the LCN dates each user will then participate (or otherwise) in the wider access auction. Those users that are successful in the wider access auction will then receive a firm LCN effective date that align with their booked wider access rights. Those parties that fail to secure wider access rights in the auction will then be offered their "back-stop LCN date" as their firm LCN date. .

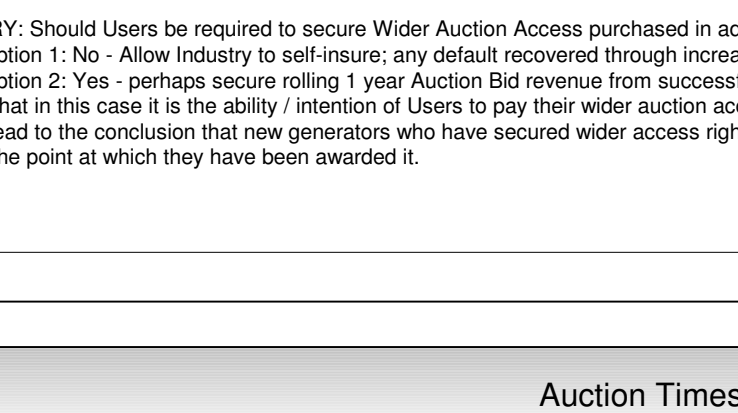
By the end of the above process the "queue" for local works would have effectively optimised based upon the desire of the user to commit to long-term transmission access. It is noted that this disadvantages those parties who do not wish to participate in the wider access auctions, but only / predominantly in the short term access markets, however the only signal available to National Grid to optimise the local works is that provided by the wider access auction.

High Level Auction Process

Securities

Category 1 Projects (Transitional)

Projects must ensure that Securities for the Auction Capacity are in place for the remainder of the current financial year (aligned with proposal for CAP165)



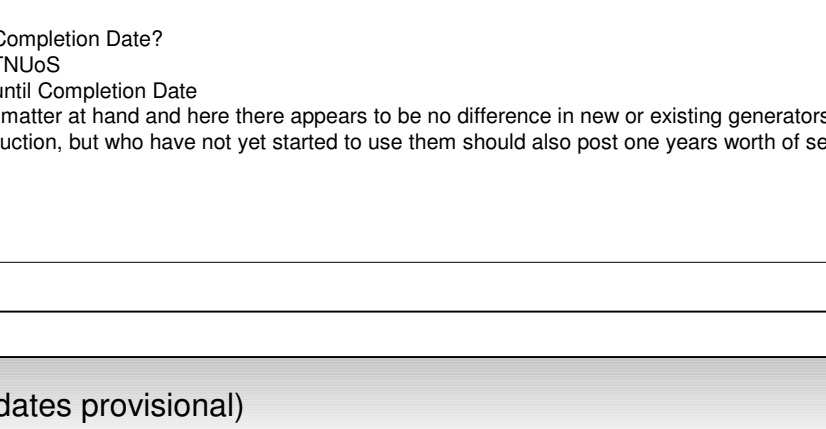
Each years security requirement is made up of that year's:
Local TNUoS liability + Residual TNUoS liability + Wider Auction charge liability

Note that the above represents a significant increase from the existing levels of security posted by post-commissioning generators and represents a gross security requirement of 27% of circa £1billion TNUoS revenues per annum. Outstanding question whether this level of security would place an undue burden on the industry compared to the relative risks posed by post-commissioning generators.

Category 2 Projects (Transitional) & Category 3 Projects (Enduring Process)

LCN Securities would become due 4 years in advance of the financial year in which the Local Works are completed, and then ramped up in the following manner

Y-4 = 25% of (8 x $TNUoS_{Local}$)
Y-3 = 50% of (8 x $TNUoS_{Local}$)
Y-2 = 75% of (8 x $TNUoS_{Local}$)
Y-1 = 100% of (8 x $TNUoS_{Local}$)



Note that the above methodology isnot based upon cost-reflective securities and although it has been designed to be in the long run equivalent to a cost-reflective approach, inevitably there will be a risk that in the short term there is a risk of stranded assets should a project fail financially before commissioning
As an alternative therefore to the above the existing cost reflective final sums methodology could be retained pre-commissioning

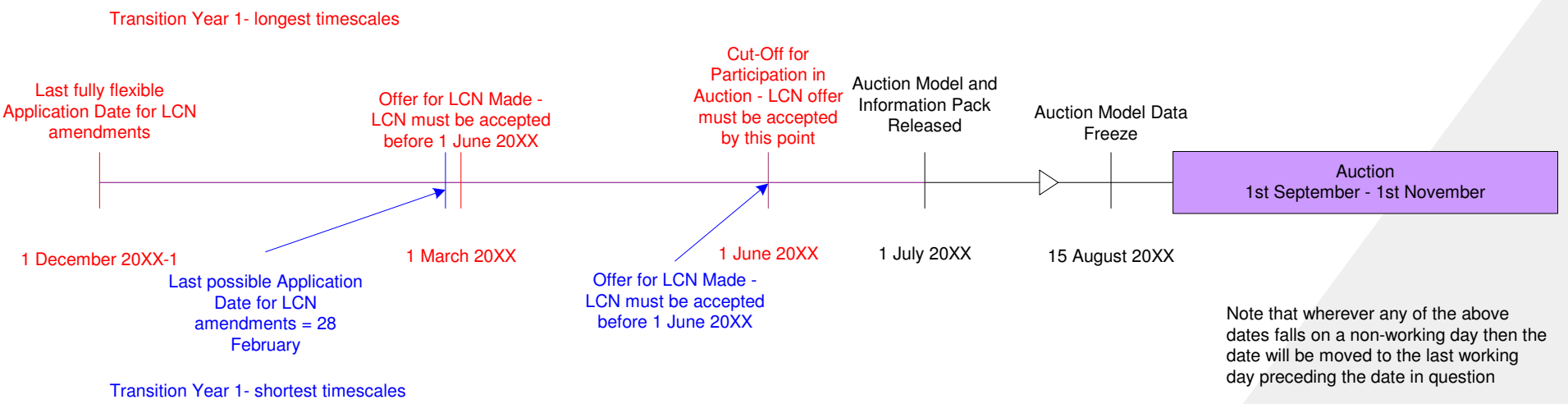
Note that in the above the post-commissioning security based as it is on $TNUoS_{Local}$+ $TNUoS_{Residual}$+Wider Access Charges may be higher than that for pre-commissioning generators which is solely based on $TNUoS_{Local}$. The Working Group considering its view of the relative risks of pre- and post-commissioning generators did not feel this treatment was necessarily correct but was unable to formulate a suitable pre-commissioning security requirement other than that proposed.

- The above proposals is predicated on there being a material difference in the risk profile of new and existing generators - leading to a material difference in their treatment for securities.

- No Securities need to be put in place for LCNs until after the first auction that the Generator is eligible to participate in has concluded
- Should a generator be unsuccessful in its first auction it may:
  - Bid in the next auction to try to secure wider access to the system and/or
  - Attempt to procure Wider System Access through a short-term product and/or
  - Defer its LCN completion date should there be a perceived risk that it would incur further LCN securities without having secured any wider system access through an auction
  - Terminate its agreements

- QUERY: Should Users be required to secure Wider Auction Access purchased in advance of their Completion Date?
  - Option 1: No - Allow Industry to self-insure; any default recovered through increase to residual TNUoS
  - Option 2: Yes - perhaps secure rolling 1 year Auction Bid revenue from successful auction Bid until Completion Date
- Note that in this case it is the ability / intention of Users to pay their wider auction access that is the matter at hand and here there appears to be no difference in new or existing generators. this may lead to the conclusion that new generators who have secured wider access rights through an auction, but who have not yet started to use them should also post one years worth of security from the point at which they have been awarded it.

Auction Timescales (all dates provisional)



Note that wherever any of the above dates falls on a non-working day then the date will be moved to the last working day preceding the date in question

Note that due to the potential for assessment of LCN amendments to require a three month offer and three month acceptance window to be held open should generators wish to have a full three months to consider any offer then applications for an LCN amendment must be made by 1st December in the year prior to the first year of auctions.

A further complication to the Auction process is the potential for interactions between the trading of long-term rights bilaterally outside of the annual auction and the allocation of long-term rights within the auction. To prevent this from having it is proposed that there is a moratorium on long term wider access trading throughout the key stage of the annual auction. This would run (assuming a September - November Auction) from mid-August until the closure of the annual auction. This would ensure that auction participants will have a fixed reference model for two weeks prior to the start of the auction proper to allow the development of their bidding strategy and also that no bilateral trades could be notified during the auction process that could have a material unexpected effect on the optimal bids within the auction.

Referrals
The conclusion of the working group regarding referred offers is that should an offer be the subject of a referral on 1st June (the normal cut-off date for the "user data freeze" in an auction year) then should that referral be determined by the "model data freeze" date - 15th August - and thus subsequently signed then it would be able to pass into that year's auction. If it still unsigned as of 15th august then it will not form part of that year's auction. [Potentially there is an issue with confidentiality and details of unsigned offers moving into the public domain as some indication of the projects that may be in the model would need to be given to other users when the Auction Model and Auction Pack are released in July - this can be somwhat relieved by giving users the option soon after 1st June to be included in that years auction info or not. The caveat being that if they are not they may not participate in that years auction]

High Level Auctions Process

Information Supplied into Auction Process

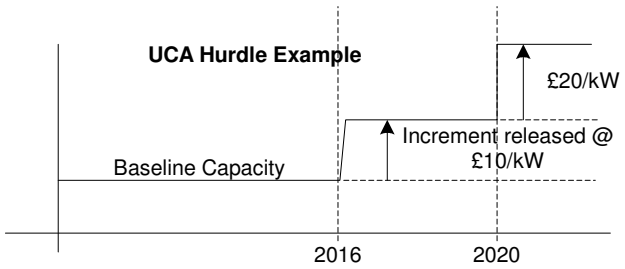
The following Information is to be released into the Auction by National Grid:

- LCN Register (maintained on an ongoing basis - similar to pre-existing TEC Register)
  LCN Register will contain details of all granted LCNs and their effective dates - NB only those parties listed on the LCN Register on 30th April (23:59) in each year may participate in the auction round to commence 1st September in that year

- Wider Access Register (maintained on an ongoing basis - similar to pre-existing TEC Register)
  Wider Access Register will contain details of all granted Wider Access through Auctions and also any reallocation through short or long term bilateral trading and their effective dates. details will include MW levels and also the boundary behind which they are effective.

The versions of both the LCN register and the Wider Auction Access Register effective on the 1st June will be included within the Auction information pack circulated on the 1st July. Though the LCN register will be fixed at this stage, as mentioned above any notified long-term access bilateral trades that are confirmed after circulation of the information pack but before mid-August will form part of the Auction baseline. It is anticipated the final Wider Auction Access register and updated auction model would be circulated in mid-august to take account of any such changes.

- National Grid Auction Model
  The Model is to be released to the market in sufficient time to allow prospective auction bidders to formulate their bidding strategy, each Bidder will also receive appropriate Bidder identifier codes that will need to be submitted alongside any Bids to validate their identity
  The Auction Model will contain details of
  - *The auction boundaries,*
  - *Baseline MW available behind each boundary*
  - *Reserve Prices*
  - *Potential future incremental capacity available behind each boundary; UCA hurdle to be passed to trigger release of such incremental capacity*



Auction Process

Generator Bids

Each Generator needs to submit the following information as part of its Bid in each round of the Auction:

- MW Level of access required
- Years Access required for (again a range is specified, possible flag if only whole period acceptance desirable (if multi-year auction process). First Year cannot be earlier than LCN start.
- Price (£/kW) to be Bid (in each year)

Each auction round will take place on a working day; Bidding will commence at 0800 on any given day and close at 1700. National Grid would notify the currently active optimal Bids at 2000 on the same day.

Should the auction not close the next auction round will commence at 0800 on the next working day.

Round X of Auction Process

Each year in the model is assessed individually with the objective function of the optimisation being to maximise overall auction bid revenue

GB separated into a number of zones each behind an auction boundary. Generators compete for access behind each boundary.

All generators behind a boundary bid for access across that boundary (even where they are not physically located in the adjacent zone). E.g. Generators in Scotland will compete with generators in the north of England for capacity available across northern England auction boundaries.

The auction optimiser solves all boundaries simultaneously to ensure maximum bid revenue is delivered nationally.

If an auction boundary is not constrained (surplus of capacity to generation behind the boundary) the price at which that capacity is secured would be expected to collapse to zero.

No reserve prices , importing zones have collars set according to existing locational TNUoS methodology.

Prices are cleared behind each constrained boundary meaning that across exporting boundaries the least positive bid price accepted by the model is paid by all parties behind that boundary. Across importing boundaries the clearing price is set at the most negative price tendered (subject to the collar).

Incremental capacity is released at a boundary should the cleared price differential exceed the incremental capacity price for each boundary.

At end of each auction round the currently active optimal bids at each node are notified to participants

Alongside nodal information the current clearing price at each boundary is also notified

Any incremental capacity scheduled to be released based on current active bids would also be notified

Participants then have opportunity to resubmit Bids if desirable

Auction Close

After each round an assessment of the movement of key auction parameters against the previous round's parameters need to be made to determine whether the auction should close.

Proposed to mirror gas auction example and that should a defined parameter(s) only move within a tolerance between rounds then auction closes - Key parameters & tolerances could be:

- No reallocation of capacity between rounds between parties behind a Boundary / nationally
- No change in marginal clearing price at a boundary between rounds
- No change in active nodal prices between rounds behind a boundary / nationally

When auction closes all active Bids become firm commitment to Wider Access from 1st April of year Bid first successful.

Details of successful Bids will be recorded in Users' Bilateral Agreements and published in the Wider Access Register

Cleared Boundary prices will also be published

Data Validation and Defaulting Process
Checks to ensure
- Valid Bidder (correct unique Bidder code)
- BId Volumes must be integer values >=0MW
- Bid Volume <= LCN volume (in a given year)
- Price Bid >= Reserve Price (if applicable)

High Level Auctions Process

Post Auction Processes

Buy Back
The following remuneration arrangements for a withdrawal / delay of Users access rights are envisaged

(A) Local Access Unavailable due to delay in commissioning of local works
For LCN, it is suggested that the remedy for non-provision of the required physical works should continue to apply as currently detailed for an existing local and wider connection application. This means that the Connection Agreement would specify the circumstances and the form of compensation payments which would be paid by National Grid if the TOs failed to deliver such assets. If the reason for a delay in the provision of such assets was due to any failure to comply by the generator concerned with any terms of the Connection Agreement, as is currently the case, no such compensation payment would be due in that instance.

(B) Wider Access procured by a User not available due to Local Access not being available
In addition to any failure to deliver payments applicable under (A) above, it is proposed that National Grid should offer to buy-back the wider transmission access rights from the purchaser at the price originally paid in the auction. The user would of course be free to enter into any contractual arrangements with a third party to transfer such rights, but note that due to the limitations around the acquisition of wider transmission access rights, such a third party would need to hold appropriate LCN for the transfer to be possible. This effectively offers the user the opportunity of potentially recovering the value of bids for wider access in addition to any payments due under (A).

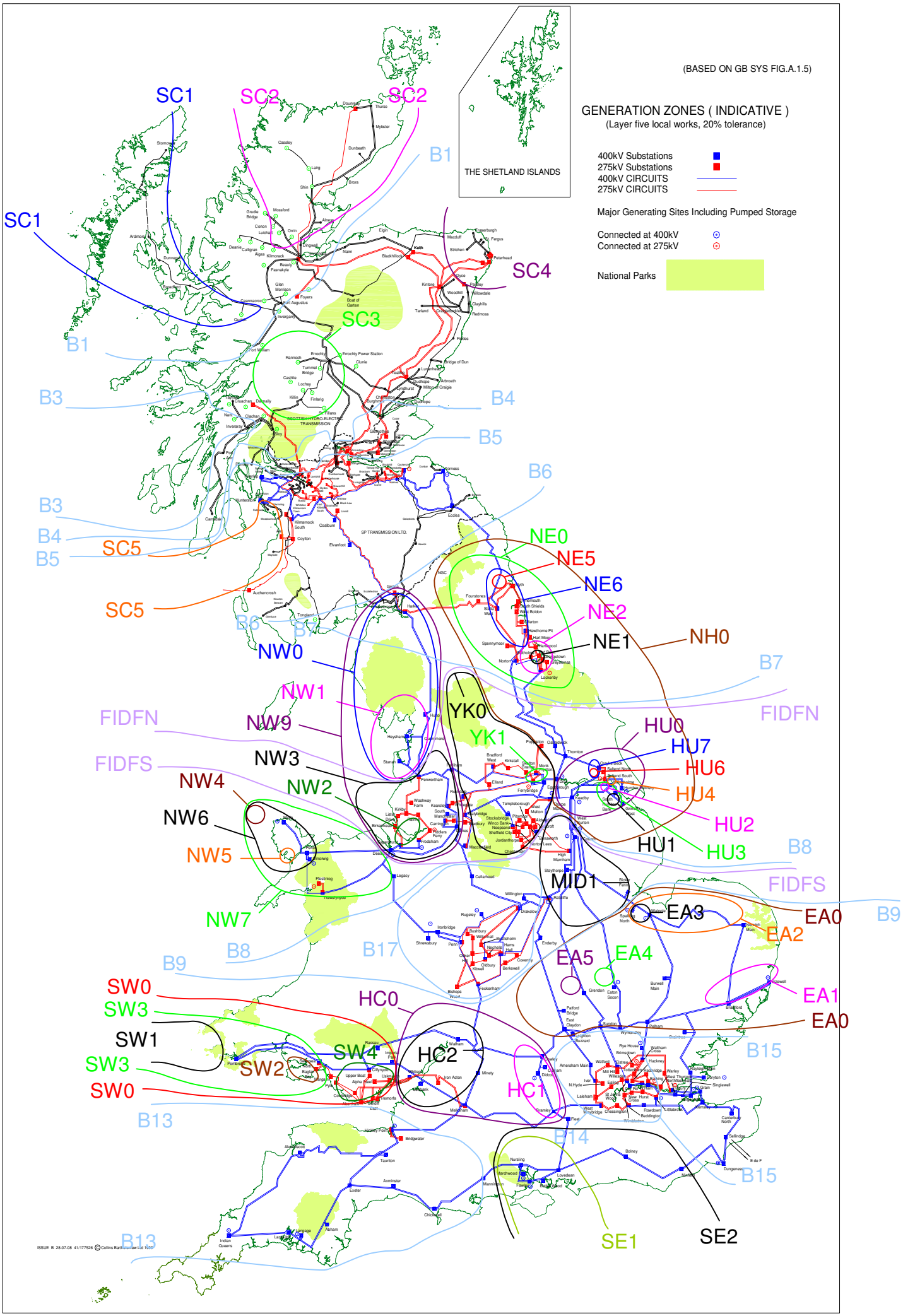
(C) Wider Access unavailable due to failure of wider transmission system (i.e. Local access still available)
It is proposed that the existing Balancing Mechanism approach should continue. However, in the circumstances where there is limited competition in the provision of such constraint volumes (due for example to the location of a particular generator on the system), it may be appropriate for an administered price to be applied in these cases to avoid any abuse of market power. Some Working Group members disagreed with the principle of an administered price being applied and believed that any abuse of market power could be dealt with by the Authority.

ANNEX 3 – INITIAL ANALYSIS OF AUCTION BOUNDARIES

The attached map records the results of National Grid's initial indicative analysis of the auction boundaries to be utilised in a Year 1 auction.

There are a large number of boundaries initially to manage the transition from existing arrangements to a new auction based method of allocating capacity. In subsequent years it is anticipated that these boundaries might become inactive and increasingly fewer of them will play an active part in the auction process.

Also attached is a look up table to help respondents to the consultation identify which zones interact with each other.


(BASED ON GB SYS FIG.A.1.5)
GENERATION ZONES (INDICATIVE)
(Layer five local works, 20% tolerance)
400kV Substations
275kV Substations
400kV CIRCUITS
275kV CIRCUITS
Major Generating Sites Including Pumped Storage
Connected at 400kV
Connected at 275kV
National Parks
THE SHETLAND ISLANDS
SC1
SC2
SC3
SC4
SC5
B1
B3
B4
B5
B6
B7
B8
B9
B13
B14
B15
B17
NE0
NE5
NE6
NE2
NE1
NH0
NW0
NW1
NW9
NW3
NW2
NW4
NW6
NW5
NW7
YK0
YK1
HU0
HU7
HU6
HU4
HU2
HU3
HU1
MID1
EA3
EA0
EA2
EA5
EA4
EA1
HC0
HC2
HC1
SW0
SW3
SW1
SW2
SW4
FIDFN
FIDFS
SE1
SE2
SCOTTISH HYDRO-ELECTRIC TRANSMISSION
SP TRANSMISSION LTD.
NGC

Competing Boundaries Look-up table

Scotland

Generation in	Competing boundaries
SC1	SC1, B1, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9
SC2	SC2, B1, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9
SC3*	SC3, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9
SC4	SC4, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9
SC5	SC5, B6, B7, FIDFN, FIDFS, B8, B9,
B1	B1, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9,
B3	B3, B4, B5, B6, B7, FIDFN, FIDFS, B8, B9,
B4	B4, B5, B6, B7, FIDFN, FIDFS, B8, B9,
B5	B5, B6, B7, FIDFN, FIDFS, B8, B9,
B6	B6, B7, FIDFN, FIDFS, B8, B9,

* subject to further study

North East and Humber

Generation in	Competing boundaries
NE1	NE1, NE2, NE0, NH0, B7, FIDFN, FIDFS, B8, B9,
NE2	NE2, NE0, NH0, B7, FIDFN, FIDFS, B8, B9,
NE5	NE5, NE6, NE0, NH0, B7, FIDFN, FIDFS, B8, B9,
NE6	NE6, NE0, NH0, B7, FIDFN, FIDFS, B8, B9,
NE0	NE0, NH0, B7, FIDFN, FIDFS, B8, B9,
HU1	HU1, HU3, HU0, NH0, FIDFS, B8, B9,
HU2	HU2, HU3, HU0, NH0, FIDFS, B8, B9,
HU3	HU3, HU0, NH0, FIDFS, B8, B9,
HU4	HU4, HU0, NH0, FIDFS, B8, B9,
HU6	HU6, HU7, HU0, NH0, FIDFS, B8, B9,
HU7	HU7, HU0, NH0, FIDFS, B8, B9,
HU0	HU0, NH0, FIDFS, B8, B9,
NH0	NH0, B7, FIDFN, FIDFS, B8, B9,

North West and Yorkshire

Generation in	Competing boundaries
NW1	NW1, NW0, FIDFN, FIDFS, B8,B9,
NW0	NW0, B7, FIDFN, FIDFS, B8,B9,
NW9	NW9, B7, FIDFN, FIDFS, B8,B9,
NW2	NW2, NW3, FIDFS, B8, B9,
NW3	NW3, FIDFS, B8, B9,
NW4	NW4, NW6, NW7, B8, B9,
NW5	NW5, NW6, NW7, B8, B9,
NW6	NW6, NW7, B8, B9,
NW7	NW7, B8, B9,
YK1	YK1, YK0, FIDFS, B8, B9,
YK0	YK0, FIDFS, B8, B9,

Midlands and East Anglia

Generation in	Competing boundaries
B17	B17, B9,
MID1	MID1, B9,
EA1	EA1, EA0
EA2	EA2, EA0
EA3	EA3, EA2, EA0
EA4	EA4, EA0
EA5	EA5, EA0

South Wales and Home Counties

Generation in	Competing boundaries
SW1	SW1, SW3, SW0
SW2	SW2, SW3, SW0
SW3	SW3, SW0
SW0	SW0
HC1	HC1, HC0
HC2	HC2, HC0

London and Thames Estuary

Generation in	Competing boundaries
B14	B14
B15 (TH0)*	TH0

* Thames Estuary analysis remains to be completed

South West and South Coast

Generation in	Competing boundaries
B13	B13
SE1	SE1, SE2
SE2	SE2

ANNEX 4 – MATRIX OF CAP166 WORKING GROUP DEVELOPMENTS OF CONSULTATION REQUESTS AND WGAAs

Reference	Company	Details of the proposal	Adopted as formal WGAA?
CAP166 WGCR-01	National Grid Electricity Transmission	An Alternative based upon WGAA1 as set out in the report, but with the exception that the auctions are settled according to a Pay as Bid principle and not through a cleared price	NO
CAP166 WGCR-02	National Grid Electricity Transmission	An Alternative whereby the baseline capacity released through the auction is greater than that which currently physically exists on the GB Transmission System, and where a locational reserve price is set in the auction to prevent this over-allocation of capacity allowing the auction prices to collapse towards £0/kW. This request would apply across each of the original and any alternative amendments that are ultimately taken forward	YES (WGAA2)
CAP166 WGCR-03	National Grid Electricity Transmission	An Alternative whereby the baseline capacity auctioned is equivalent to the existing physical network capacity only with the proviso that no reserve price would be set. This request would apply across each of the original and any alternative amendments that are ultimately taken forward	NO
CAP166 WGCR-04	Welsh Power	An Alternative whereby the principles put forward by WGAA1 would be largely retained with the caveat that when the incremental capacity release supply function is calculated it should be unconstrained after 4 years.	NO

ANNEX 5 – WORKING GROUP TERMS OF REFERENCE AND MEMBERSHIP

Working Group Terms of Reference and Membership

TERMS OF REFERENCE FOR CAP165-166 WORKING GROUP 'ACCESS WORKING GROUP 2'

RESPONSIBILITIES

1. The Working Group is responsible for assisting the CUSC Amendments Panel in the evaluation of CUSC Amendment Proposals CAP165 and CAP166 tabled by National Grid at the Amendments Panel meeting on 25th April 2008.

2. The proposals must be evaluated to consider whether each of them better facilitates achievement of the applicable CUSC objectives. These can be summarised as follows:

   (a) the efficient discharge by the Licensee of the obligations imposed on it by the Act and the Transmission Licence; and

   (b) facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the sale, distribution and purchase of electricity.

3. It should be noted that additional provisions apply where it is proposed to modify the CUSC amendment provisions, and generally reference should be made to the Transmission Licence for the full definition of the term.

SCOPE OF WORK

4. The Working Group must consider the issues raised by the Amendment Proposals and consider if each of the proposals identified better facilitates achievement of the Applicable CUSC Objectives.

5. In addition to the overriding requirement of paragraph 4, the Working Group shall consider and report on the following specific issues for both CAP165 and CAP166:

   - Impact on bilateral agreements (BCA, BEGAs, CONSAG, Offers etc.)
   - Impact on computing systems, central and individual CUSC party
   - Efficiency of investment signals (for generation, transmission and interconnectors)
   - Effect on competition
   - Applicability to embedded generation
   - Impact on industry documents, including SQSS
   - Definitions, including interaction with other codes and methodologies
   - Interaction with proposed Offshore regime
   - A cost benefit analysis, including:
     - Consideration of the cost of carbon
     - Impact on all classifications of users
     - Impact on system operator and transmission owners
   - Impact on maintenance of the reliability, safety and operation of the grid
   - Impact on Security of Supply
   - Ability of CUSC Parties to trade access rights (short and long term) between themselves

5.a For CAP165, the Working Group shall also consider and report on the following specific issues:

- Nature and definition of rights (including whether zonal rights are recorded zonally or nodally)
- Impact on / transition for users with existing rights
- Application process for extension of rights
- Efficient use of capacity and relinquishment / reduction of rights
- Minimum / maximum booking period
- Definition of an appropriate level of financial security
- Consideration of user commitment in negative charging zones
- Equitable treatment of new and existing users
- Calculation of the trigger period for incremental capacity bookings
- Consideration of the appropriate level of user commitment for new users
- The profile of financial security required pre-commissioning
- Interaction with security requirements for local infrastructure
- Transition and retrospective application for new users

5.b For CAP166, the Working Group shall also consider and report on the following specific issues:

- Type of auction
- Process for, and timing of, long-term auctions (including detailed business rules)
- Size and period of capacity block
- Specification of product (including financial or physical in nature, and rights to compensation)
- Period of release, including interaction with re-zoning
- Evaluation of bids for different numbers of years
- Is there the need for a reserve price?
- Consideration of negative reserve prices (if any) and bids
- Long-term Auction restrictions (e.g. would participation eligibility be restricted to those with a local connection or offer for such?)
- Definition of baselines, and governance of baseline definition
- Definition of an appropriate level of financial security
- Impact on users with existing rights
- Treatment of unsold capacity and incremental capacity
- Definition of regulatory test for release of incremental capacity
- Governance of regulatory test for release of incremental capacity
- Definition of release period for incremental capacity
- Application process for new connections
- Transition, including existing commitments for reinforcements
- Implementation - processes and systems required
- Consideration of relevant parallels from the gas experience

5.c This working group shall have a sub group, the CAP161-166 Enabling Sub-group. The Terms of Reference for this sub-group shall be agreed by the Amendments Panel and shall include the consideration of a number of enabling changes, principally:

- Zonal definition of wider transmission access rights
- Zoning criteria and methodology governance
- Definition of local access (intra-zonal access rights)
- Local only applications
- Local access charging and financial security requirements
- Residual charging and credit requirements

6. The Working Group is responsible for the formulation and evaluation of any Working Group Alternative Amendments (WGAAs) arising from Group discussions which would, as compared with the Amendment Proposals, better facilitate achieving the applicable CUSC objectives in relation to the issue or defect identified.

7. The Working Group should become conversant with the definition of Working Group Alternative Amendments which appears in Section 11 (Interpretation and Definitions) of the CUSC. The definition entitles the Group and/or an individual Member of the Working Group to put forward a Working Group Alternative Amendment if the Member(s) genuinely believes the Alternative would better facilitate the achievement of the Applicable CUSC Objectives. The extent of the support for the Amendment Proposals or any Working Group Alternative Amendments arising from the Working Group's discussions should be clearly described in the final Working Group Report to the CUSC Amendments Panel.

8. There is an obligation on the Working Group Members to propose the minimum number of Working Group Alternatives where possible.

9. All proposed Working Group Alternatives should include the proposer(s) details within the Final Working Group Report, for the avoidance of doubt this includes Alternative(s) which are proposed by the entire Working Group or subset of members.

10. There is an obligation on the Working Group to undertake a period of Consultation in accordance with CUSC 8.17. The Working Group Consultation period shall be for a period of 4 weeks as determined by the Amendment Panel.

11. Following the Consultation period the Working Group is required to consider all responses including any WG Consultation requests. As appropriate the Working Group will be required to undertake any further analysis and update the Original and/or Working Group Alternatives. All responses including any WG Consultation Requests shall be included within the final report including a summary of the working Groups deliberations and conclusions.

12. The Working Group is to submit their final report to the CUSC Panel Secretary on 17th July 2008 for circulation to Panel Members. The conclusions will be presented to the CUSC Panel meeting on 25th July 2008.

MEMBERSHIP

13. It is recommended that the Working Group has the following members:

Chair	Hêdd Roberts
National Grid	Andrew Truswell
Industry Representatives	James Anderson
	Graeme Cooper
	Stuart Cotten
	Sebastian Eyre
	Nick Frydas
	Garth Graham
	Paul Jones
	Simon Lord
	Cathy McClay
	Fiona Navesey

	Bill Reed
	Ed Reed
	Helen Snodin
	Lisa Waters
	Barbara Vest
Authority Representative	Min Zhu / David Hunt
Technical Secretary	Sarah Hall

NB: Working Group must comprise at least 5 Members (who may be Panel Members)

14. The Chair of the Working Group and the Chair of the CUSC Panel must agree a number that will be quorum for each Working Group meeting. The agreed figure for CAP165 and CAP166 is that at least 5 Working Group members must participate in a meeting for quorum to be met.

15. A vote is to take place by all eligible Working Group members (for the avoidance of doubt, that is (i) the Proposer (National Grid) and (ii) the Industry representatives listed above) on the proposal and each Working Group Alternative, as appropriate, as to whether it better facilitates the CUSC Applicable Objectives and indicate which option is considered the BEST with regard to the CUSC Applicable Objectives. The results from the vote shall be recorded in the Working Group Report.

16. Working Group Members or their appointed alternate is required to attend a minimum of 50% of the Working Group Meetings to be eligible to participate in the Working Group vote.

17. The Technical Secretary to keep an Attendance Record, for the Working Group meetings and to circulate the Attendance Record with the Action Notes after each meeting. This will be attached to the Final Working Report.

18. The membership can be amended from time to time by the CUSC Amendments Panel.

19. If any Working Group Member wishes to nominate an Alternate (to act on their behalf in their absence from meetings) then this should be sent to the Working Group Chair once the Working Group is under way who will confirm (to the Working Group Member) that the Alternate is duly designated. For the avoidance of doubt if the Working Group Chair believes the suggested Alternate does not have sufficient expertise in the issues being considered by the Working Group they will ask the Working Group Member to suggest a more suitable Alternate.

20. Observers may be permitted by the Chair to attend any meeting. It should be noted that the observer (i) will not have a vote and (ii) cannot speak unless asked to do so by the Chair. Any CUSC Party wishing to be an observer should agree with the Working Group Chair advance .The Chair may invite additional industry experts to any meeting as required to ensure efficient and comprehensive coverage of the agenda.

RELATIONSHIP WITH AMENDMENTS PANEL

21. The Working Group shall seek the views of the Amendments Panel before taking on any significant amount of work. In this event the Working Group Chairman should contact the CUSC Panel Secretary.

22. The Working Group shall seek the Amendments Panel advice if a significant issue is raised during the Consultation process which would require a second period of Consultation in accordance with 8.17.17.

23. Where the Working Group requires instruction, clarification or guidance from the Amendments Panel, particularly in relation to their Scope of Work, the Working Group Chairman should contact the CUSC Panel Secretary.

24. The working group shall maintain a register of assumptions and issues, which is to be reported to the Amendments Panel and other Transmission Access working groups on a regular basis.

MEETINGS

25. The Working Group shall, unless determined otherwise by the Amendments Panel, develop and adopt its own internal working procedures and provide a copy to the Panel Secretary for each of its Amendment Proposals.

26. To ensure an efficient process (and mindful of room logistics) only the Working Group Member or their appointed Alternate can attend a meeting. If an alternate wishes to attend the same meeting as their associated member this will be as an observer (under item 18. above) unless they have previously agreed with the Working Group Chair.

REPORTING

27. The Working Group Chair shall prepare a final report to the 25th July 2008 Amendments Panel responding to the matter set out in the Terms of Reference.

28. A draft Working Group report will be produced individually for each of CAP165 and CAP166. Each draft working group report will include the relevant information from the CAP161-166 Enabling Sub-group.

29. A draft Working Group Report must be circulated to Working Group members with not less than five business days given for comments.

30. Any unresolved comments within the Working Group must be reflected in the final Working Group Report.

31. The Working Group Chair (or another Working Group member nominated by him) will present the Working Group report to the Amendments Panel as required.

ANNEX 6 – WORKING GROUP ATTENDANCE REGISTER

		1	2	3	4	5	6	7	8	9	10	11	12
Name	Company	14/05/2008	29/05/2008	11/06/2008	24/06/2008	09/07/2008	28/07/2008	07/08/2008	21/08/2008	04/09/2008	11/09/2008	23/09/2008	02/10/2008
Working Group Members													
Hêdd Roberts	National Grid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Andrew Truswell	National Grid	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
Sarah Hall	National Grid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
James Anderson	Scottish Power	✓	✓	✓	✓	Gerry Hoggan	✓	✓	✓	✓	✓	✓	✓
Stuart Cotten	Drax Power	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sebastian Eyre	EDF Energy	✓	×	✓	Stefan Leedham	✓	Emma Luckhurst	✓	✓	Emma Luckhurst	Stefan Leedham	✓	×
Nick Frydas	Merrill Lynch	✓	×	×	✓	✓	✓	×	✓	×	✓	×	×
Garth Graham	SSE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Paul Jones	E.ON UK	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	×	✓
Simon Lord	First Hydro	✓	Kevin Dibble	Kevin Dibble	✓	✓	✓	✓	Kevin Dibble	✓	✓	✓	✓
Cathy McClay	British Energy	✓	✓	✓	✓	✓	Louise Schmitz	✓	Rob Rome	Louise Schmitz	Louise Schmitz	✓	✓
Fiona Navesey	Centrica	✓	Dave Wilkerson	✓	Dave Wilkerson	✓	✓	Dave Wilkerson	✓	✓	✓	✓	✓
Bill Reed	RWE npower	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Edward Reed	Cornwall Energy Associates	✓	✓	Bob Brown	✓	Bob Brown	×	✓	×	✓	×	×	✓
Helen Snodin	Xero Energy	✓	Nigel Scott	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
Lisa Waters	Welsh Power	✓	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓
Barbara Vest	AEP	✓	Dennis Gowland	Dennis Gowland	Dennis Gowland	✓	✓	✓	✓	✓	×	✓	Dennis Gowland
Min Zhu	Ofgem	✓	✓	✓	Stuart Cook	✓	✓	David Hunt	✓	✓	✓	✓	✓
Alternatives and Observers													
Peter Bolitho	E.ON UK	×	×	×	✓	×	×	×	×	×	×	×	×
Bob Brown	Cornwall Energy Associates	×	×	✓	×	✓	×	×	×	×	×	×	×
Stuart Cook	Ofgem	×	×	×	✓	✓	✓	×	×	×	×	×	×
Kevin Dibble	First Hydro	×	✓	✓	×	×	×	×	✓	×	×	×	×
Steve Fisher	National Grid	×	×	×	✓	✓	×	×	×	×	×	×	×
Dennis Gowland	Fairwind (Orkney) Ltd	×	✓	✓	✓	×	✓	✓	✓	✓	✓	×	✓
Jerrald Hauber	RWE Innogy	✓	✓	×	✓	✓	✓	×	✓	✓	✓	×	×
Gerry Hoggan	Scottish Power	×	×	×	×	✓	×	×	×	×	×	×	×
Stefan Leedham	EDF Energy	×	×	×	✓	✓	×	✓	×	×	✓	×	×
Emma Luckhurst	EDF Energy	×	×	✓	×	×	✓	×	×	✓	×	×	×
Nigel Scott	Xero Energy	×	✓	×	×	×	×	×	×	×	×	×	×
Dave Wilkerson	Centrica	×	✓	×	✓	×	×	✓	×	×	×	×	✓
Mike Young	Centrica	×	×	×	✓	×	×	×	×	×	×	×	×
Louise Schmitz	British Energy	×	×	×	×	×	✓	×	×	×	✓	×	×
Tony Dicicco	RWE npower	×	×	×	×	×	×	✓	×	×	×	×	×
David Hunt	Ofgem	×	×	×	×	×	×	✓	×	×	×	×	×
Chris Stewart	Centrica	×	×	×	×	×	×	✓	×	×	×	×	×
Phil Hicken	BERR	×	×	×	×	×	×	✓	×	×	×	×	×
Rob Rome	British Energy	×	×	×	×	×	×	×	✓	×	×	×	×
Ian Iomas	BERR	×	×	×	×	×	×	×	×	×	✓	×	×
Mark Duffield	National Grid	×	×	×	×	×	×	×	×	×	×	×	×
Angela Quinn	National Grid	×	×	×	×	×	×	×	×	×	×	×	×
Elaine Calvert	National Grid	×	×	×	×	×	×	×	×	×	×	×	×
Merel Van der Neut Kolfshoten	Centrica	×	×	×	×	×	×	×	×	×	×	×	×
David Scott	EDF Energy	×	×	×	×	×	×	×	×	×	×	×	×
Laura McVean	SSE	×	×	×	×	×	×	×	×	×	×	×	×
Stephen Barnett	National Grid	×	×	×	×	×	×	×	×	×	×	×	×

		13	14	15	16	17	18	19	20	21	22	23
Name	Company	06/10/2008	08/10/2008	10/10/2008	15/10/2008	16/10/2008	24/10/2008	04/11/2008	11/11/2008	18/11/2008	19/11/2008	27/11/2008
Working Group Members												
Hêdd Roberts	National Grid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Andrew Truswell	National Grid	✓	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield
Sarah Hall	National Grid	✓	✓	✓	×	×	✓	✓	✓	✓	✓	✓
James Anderson	Scottish Power	✓	×	×	×	×	✓	✓	✓	✓	✓	✓
Stuart Cotten	Drax Power	✓	✓	×	✓	✓	✓	×	×	✓	✓	×
Sebastian Eyre	EDF Energy	✓	×	Emma Luckhurst	David Scott	David Scott	×	×	×	×	×	×
Nick Frydas	Merrill Lynch	×	×	×	×	×	×	×	×	×	×	×
Garth Graham	SSE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Paul Jones	E.ON UK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Simon Lord	First Hydro	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cathy McClay	British Energy	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	Rob Rome
Fiona Navesey	Centrica	✓	✓	×	Merel Kolfshoten	×	×	×	Merel Kolfshoten	✓	Merel Kolfshoten	×
Bill Reed	RWE npower	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Edward Reed	Cornwall Energy Associates	×	×	×	×	×	×	×	Bob Brown	Bob Brown	Bob Brown	×
Helen Snodin	Xero Energy	×	×	×	×	×	×	✓	✓	✓	✓	✓
Lisa Waters	Welsh Power	✓	×	×	×	×	×	×	✓	✓	✓	✓
Barbara Vest	AEP	✓	✓	×	×	×	Dennis Gowland	Dennis Gowland	Dennis Gowland	Dennis Gowland	Dennis Gowland	Dennis Gowland
Min Zhu	Ofgem	✓	✓	×	✓	✓	David Hunt	×	✓	✓	✓	✓
Mike Davies	Wind Energy	×	×	×	×	×	×	×	×	×	×	×
Alternatives and Observers												
Peter Bolitho	E.ON UK	×	×	×	×	×	×	×	×	×	×	×
Bob Brown	Cornwall Energy Associates	×	×	×	×	×	×	×	✓	✓	✓	×
Stuart Cook	Ofgem	✓	×	×	×	×	×	×	×	×	×	×
Kevin Dibble	First Hydro	×	×	×	×	×	×	×	×	×	×	×
Steve Fisher	National Grid	×	×	×	×	×	×	×	×	×	×	×
Dennis Gowland	Fairwind (Orkney) Ltd	✓	×	×	×	×	✓	✓	✓	✓	✓	✓
Jerrald Hauber	RWE Innogy	×	✓	✓	×	×	✓	✓	×	✓	×	✓
Gerry Hoggan	Scottish Power	×	×	×	×	×	×	×	×	×	×	×
Stefan Leedham	EDF Energy	×	×	×	×	×	×	×	×	×	×	×
Emma Luckhurst	EDF Energy	×	×	✓	✓	✓	×	×	×	×	×	×
Nigel Scott	Xero Energy	×	×	×	×	×	×	×	×	×	×	×
Dave Wilkerson	Centrica	×	×	×	×	×	×	×	×	×	×	×
Mike Young	Centrica	×	×	×	×	×	×	×	×	×	×	×
Louise Schmitz	British Energy	×	×	×	×	×	×	×	×	×	×	×
Tony Dicicco	RWE npower	×	×	×	×	×	×	×	×	×	×	×
David Hunt	Ofgem	×	×	×	×	×	✓	×	×	×	×	×
Chris Stewart	Centrica	×	×	×	×	×	×	×	×	×	×	×
Phil Hicken	BERR	×	×	×	×	×	×	×	×	×	×	×
Rob Rome	British Energy	×	✓	✓	×	×	×	×	×	×	✓	✓
ian lomas	BERR	×	×	×	×	×	×	×	×	×	×	×
Mark Duffield	National Grid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Angela Quinn	National Grid	✓	×	✓	×	×	✓	✓	×	×	×	×
Elaine Calvert	National Grid	×	×	✓	×	×	×	×	×	×	×	✓
Merel Van der Neut Kolfshoten	Centrica	×	×	×	✓	×	×	×	✓	×	✓	×
David Scott	EDF Energy	×	×	×	✓	✓	×	×	×	×	×	×
Laura McVean	SSE	×	×	×	×	×	×	×	×	×	×	×
Stephen Barnett	National Grid	×	×	×	×	×	×	×	×	×	✓	✓
Micheal Dodd	ESBI	×	×	×	×	×	×	×	×	×	×	×
John Morris	British Energy	×	×	×	×	×	×	×	×	×	×	×
Robert Longden	Scottish Renewables Forum	×	×	×	×	×	×	×	×	×	×	×
Colin Mochan	SSE	×	×	×	×	×	×	×	×	×	×	×

		24	25	26	27	28	29	30
Name	Company	02/12/2008	10/12/2008	15/12/2008	09/01/2009	15/01/2009	21/01/2009	27/01/2009
Working Group Members								
Hêdd Roberts	National Grid	✓	✓	✓	✓	✓	✓	✓
Andrew Truswell	National Grid	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield	Mark Duffield
Sarah Hall	National Grid	✓	✓	✓	✓	✓	✓	✓
James Anderson	Scottish Power	✓	✓	×	✓	✓	✓	✓
Stuart Cotten	Drax Power	✓	✓	✓	✓	✓	×	✓
Sebastian Eyre	EDF Energy	×	×	×	×	×	×	✓
Nick Frydas	Merrill Lynch	×	×	×	×	×	×	×
Garth Graham	SSE	✓	✓	✓	✓	✓	✓	✓
Paul Jones	E.ON UK	✓	✓	×	✓	✓	✓	✓
Simon Lord	First Hydro	✓	×	✓	✓	×	✓	✓
Cathy McClay	British Energy	Rob Rome	Louise Schmitz	Louise Schmitz	John Morris	John Morris	Louise Schmitz	Louise Schmitz
Fiona Navesey	Centrica	✓	✓	✓	✓	✓	Merel Kolfshoten	Merel Kolfshoten
Bill Reed	RWE npower	✓	✓	✓	✓	✓	✓	✓
Edward Reed	Cornwall Energy Associates	×	×	Bob Brown	Bob Brown	Bob Brown	×	×
Helen Snodin	Xero Energy	✓	×	✓	✓	✓	✓	
Lisa Waters	Welsh Power	×	×	×	✓	✓	✓	✓
Barbara Vest	AEP	Dennis Gowland	×	×	Dennis Gowland	Dennis Gowland	✓	×
Min Zhu	Ofgem	✓	✓	David Hunt	✓	✓	✓	✓
Mike Davies	Wind Energy	×	✓	✓	✓	×	×	✓
Alternatives and Observers								
Peter Bolitho	E.ON UK	×	×	×	×	×	×	×
Bob Brown	Cornwall Energy Associates	×	×	✓	✓	✓	×	×
Stuart Cook	Ofgem	✓	×	×	✓	✓	✓	×
Kevin Dibble	First Hydro	×	×	×	×	×	×	×
Steve Fisher	National Grid	×	×	×	×	×	×	×
Dennis Gowland	Fairwind (Orkney) Ltd	✓	×	×	✓	✓	×	×
Jerrald Hauber	RWE Innogy	×	✓	×	×	✓	✓	✓
Gerry Hoggan	Scottish Power	×	×	×	×	×	×	×
Stefan Leedham	EDF Energy	×	×	×	×	×	×	×
Emma Luckhurst	EDF Energy	×	×	×	×	×	×	×
Nigel Scott	Xero Energy	×	×	×	×	×	×	×
Dave Wilkerson	Centrica	×	×	×	×	×	×	×
Mike Young	Centrica	×	×	×	×	×	×	×
Louise Schmitz	British Energy	×	✓	✓	×	×	✓	✓
Tony Dicicco	RWE npower	×	×	×	×	×	×	×
David Hunt	Ofgem	×	×	✓	×	×	×	×
Chris Stewart	Centrica	×	×	×	×	×	×	×
Phil Hicken	BERR	×	×	×	×	×	×	×
Rob Rome	British Energy	✓	×	×	×	×	×	×
Ian Lomas	BERR	×	×	×	×	×	×	×
Mark Duffield	National Grid	✓	✓	✓	✓	✓	✓	✓
Angela Quinn	National Grid	×	×	×	×	×	×	×
Elaine Calvert	National Grid	✓	✓	✓	✓	✓	✓	✓
Merel Van der Neut Kolfshoten	Centrica	×	×	×	×	×	✓	✓
David Scott	EDF Energy	×	×	×	×	×	×	×
Laura McVean	SSE	×	×	×	×	×	×	×
Stephen Barnett	National Grid	✓	×	×	×	×	✓	×
Micheal Dodd	ESBI	×	×	✓	✓	✓	×	✓
John Morris	British Energy	×	×	×	✓	✓	×	×
Robert Longden	Scottish Renewables Forum	×	×	×	×	×	×	✓
Colin Mochan	SSE	×	×	×	×	×	×	✓

Working Group 3

Date	12-May	27-May	04-Jun	16-Jun	29-Jun	13-Jul	29-Jul	13-Aug	22-Aug	02-Sep	12-Sep	25-Sep	10-Nov
Meeting No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Allan Kelly	1	1	1	1	1	1		1	1				
Anthony Mungall	1	1		1		1		1			1		1
Barbara Vest	1				1	1	1	1			1	1	
Craig Maloney	1	1	1	1	1	1	1	1	1		1	1	1
Dave Wilkerson	1	1	1	1	1	1	1				1	1	1
Dennis Timmins	1		1	1	1	1	1		1		1	1	1
Frank Prashad	1		1	1	1	1	1	1	1		1	1	
Hêdd Roberts	1	1	1	1	1	1	1	1	1		1	1	1
Louise Schmitz	1	1	1	1	1	1	1	1	1		1	1	1
Helen Snodin (N Scott)	1	1	1	1	1	1	1	1	1		1	1	1
Paul Jones	1	1	1	1	1		1	1	1		1		1
Robert Longden	1	1		1		1	1	1	1		1		1
Simon Lord	1			1	1	1	1				1	1	1
David Lewis	1												
Bee Hun Tan				1	1	1	1	1	1		1	1	
Tom Ireland	1	1	1	1	1	1	1	1	1		1		1
Chris Barrass	1	1		1		1	1						
Qiong Zhou (Jo)	1	1		1	1	1	1	1	1		1	1	
Brian Taylor		1											
Michael Dodd			1		1		1		1			1	
Sebastian Eyre			1			1							
Emma Luckhurst			1		1	1	1				1	1	
Andrew Rimmer			1										
Dan Jerwood			1										
Stefan Leedham				1									
Stephen Curtis				1	1		1	1			1	1	1
Garth Graham					1								
Owen Wilkes					1								
David Walker						1							
Stuart Cotten						1	1	1					
James Anderson							1					1	
Stuart Cook						1					1		
David Scott													1

Cancelled

ANNEX 7 – AMENDMENT PROPOSAL FORM

CUSC Amendment Proposal Form	**CAP:166**

Title of Amendment Proposal:

Transmission Access – Long-term Entry Capacity Auctions

Description of the Proposed Amendment *(mandatory by proposer)***:**

It is proposed that all long-term entry access rights to the GB transmission system would be allocated by auction. Available access rights would be identified on a zonal basis, and released in annual (financial year) blocks. Auctions would be held annually, and capacity allocated on a pay as bid basis to the limit of the available ("baseline") zonal capability. Successful bookings would be underpinned by User commitment in the form of a liability to pay the accepted bids and a consequential requirement for financial security to be put in place. This will be developed during the assessment of the proposed amendment, in accordance with the Best Practice Guidelines for Gas and Electricity Network Operator Credit Cover.

Outside of a specified period, incremental capacity would be released by the System Operator where any unfulfilled bids in excess of the zonal reserve price were of a level sufficient to pass a regulatory test, which would be defined under a separate Incremental Entry Capacity Release (IECR) methodology.

The above arrangements would provide access to the wider transmission system. Separate arrangements would be put in place for infrastructure comprising generators' local connections to the wider system, such that potential new generators could first apply for a local connection, and then have their offer held open until the next auction for wider system capacity had concluded. It is envisaged that generators' bids for long-term entry access rights would be constrained to the sum of their prevailing contracted or offered local capacity limits in each zone. Separate arrangements for charging and security would apply for local infrastructure, and for the residual element of the entry Transmission Network Use of System (TNUoS) capacity charge, which it is proposed would be levied on a commoditised basis.

Description of Issue or Defect that Proposed Amendment seeks to Address *(mandatory by proposer)***:**

The current entry access arrangements give existing generators a rolling option to renew their rights to access the transmission system on an annual basis. The allocation of these rights is through incumbency, so that, in the constrained period (before incremental capacity can be provided), new Users have no ability to gain from the System Operator long-term access rights even if they would value them more highly than incumbents. The fact that the true value of transmission access rights cannot be discovered from the market compromises transmission licensees' ability to develop an optimally economical system of electricity transmission, as well as creating a barrier to entry. Entry could be facilitated by improving liquidity in the trading of access rights (and separate amendments are being proposed to do so), but in order for Users that are able to trade capacity to do so at value they first should have had to pay value for those rights.

The proposed amendment also seeks to address the issue that the current arrangements, whereby generators have a rolling option, do not provide any certainty to National Grid and Transmission Owners. This uncertainty can lead to inefficient investment signals, in that the planning of incremental capacity currently can take little, if any, account of the potential future release of existing capacity currently held by incumbents. Additionally, existing generators are not required to put in place any financial security, even for the one year's worth of charges they currently incur a liability for.

National Grid believes that both of the above issues would be addressed through the introduction of auctions for long-term entry capacity rights. The allocation of such rights through auctions would ensure that rights were released at value, thereby facilitating the economical development of the transmission system, and reducing barriers to entry by allowing the release of capacity to those that value it most highly. The long-term booking of capacity, with associated User commitment, would also provide more efficient investment signals, thereby reducing the risk of stranding, and would

facilitate the release of existing capacity to new entrants.

Impact on the CUSC *(this should be given where possible)*:

The impact on the CUSC would include, but may not be limited to, changes to Sections 2 (Connection), 3 (Use of System), 6 (General Provisions) and 9 (Interconnectors). There would also be consequential changes required to Sections 11 (Interpretation and Definitions), and potentially to the CUSC Schedules and Exhibits.

Impact on Core Industry Documentation *(this should be given where possible)*:

No impact on Core Industry Documentation has been identified, but it is suggested that this would be reviewed during the assessment of the proposed amendment.

Impact on Computer Systems and Processes used by CUSC Parties *(this should be given where possible)*:

New processes, and potentially computer systems, would be required to participate in the auction process.

CUSC Parties' models of the financial viability of new and existing power stations and interconnectors would need to take into account the revised arrangements.

Details of any Related Modifications to Other Industry Codes *(where known)*:

Related modifications to the Use of System Charging Methodology would be proposed to set zonal reserve prices for the capacity auctions. It is envisaged that these would be based on the wider locational element of the current entry (generation) TNUoS charge.

Additional modifications to the Use of System Charging Methodology would be proposed to cost reflectively charge local infrastructure (and to therefore separate this from the auctions process for recovering wider locational costs); to remove the residual element of the entry (generation) TNUoS capacity charge (and instead recover this through a commodity charge based on £/kWh); and to revise the zoning criteria, which would now apply to the zonal auction reserve prices. It is proposed that such zones would be set by reference to a zonal definition methodology which would be described in a separate statement.

Further, a mechanism would need to be implemented in the Use of System Charging Methodology to resolve any under- or over-recoveries of auction revenues. It is anticipated that this would be through the commoditised residual charge, although further mechanisms may be required to accommodate potential extreme scenarios.

Changes to National Grid's Transmission Licence would be required to give effect to the IECR, the zonal definition methodology, and to define zonal baseline capacities. Additionally, alterations to the Transmission Owner revenue restriction, potentially in the form of additional incentive schemes, might be implemented. Changes to the licences of the other Transmission Licensees may also be required to define zonal baseline capacities and introduce additional incentive schemes.

Amendments to the System Operator – Transmission Owner Code (STC) might be required to ensure that the release of incremental capacity in Scotland was in line with the IECR. Additional STC changes may be required to "back-off" any other changes to National Grid's User facing obligations.

Changes to the GB Security and Quality of Supply Standards (SQSS) are likely to be required, due to the definition of access rights on a fungible zonal basis, and to accommodate the release of incremental capacity under the IECR.

Justification for Proposed Amendment with Reference to Applicable CUSC Objectives** *(mandatory by proposer)*:

The proposed amendment would better facilitate the achievement of Applicable CUSC Objective (a), the efficient discharge by the licensee of the obligations imposed upon it under the Act and by the licence, in that the release of capacity at value, together with the improved investment signals that

would result from temporally defined bookings of long-term capacity, would better allow National Grid as the licensee to discharge its obligation under the Act to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

The proposed amendment would also better facilitate the achievement of Applicable CUSC Objective (b), facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the sale, distribution and purchase of electricity, as:

- Existing and new generators would be able to bid for existing transmission access rights on an equal basis, and such rights would be allocated to those that valued them most highly
- Existing capacity could be reallocated with certainty to new entrants as a result of the firm bookings of capacity made through the auctions process by existing generators; and
- The enhanced transparency in the commercial frameworks of required User commitments and increased certainty would address the perceived barriers to entry, thereby providing more confidence in the firmness of capacity applications, and increasing competition.

Details of Proposer: Organisation's Name:	National Grid Electricity Transmission plc
Capacity in which the Amendment is being proposed: (i.e. CUSC Party, BSC Party or "energywatch")	CUSC Party
Details of Proposer's Representative: Name: Organisation: Telephone Number: Email Address:	Andrew Truswell National Grid 01926 656369 andrew.truswell@uk.ngrid.com
Details of Representative's Alternate: Name: Organisation: Telephone Number: Email Address:	Duncan Burt National Grid 01926 656703 duncan.burt@uk.ngrid.com
Attachments (Yes/No): No **If Yes, Title and No. of pages of each Attachment:**	

Notes:

1. Those wishing to propose an Amendment to the CUSC should do so by filling in this "Amendment Proposal Form" that is based on the provisions contained in Section 8.15 of the CUSC. The form seeks to ascertain details about the Amendment Proposal so that the Amendments Panel can determine more clearly whether the proposal should be considered by a Working Group or go straight to wider National Grid Consultation.

2. The Panel Secretary will check that the form has been completed, in accordance with the requirements of the CUSC, prior to submitting it to the Panel. If the Panel Secretary accepts the Amendment Proposal form as complete, then he will write back to the Proposer informing him of the reference number for the Amendment Proposal and the date on which the Proposal will be considered by the Panel. If, in the opinion of the Panel Secretary, the form fails to provide the information required in the CUSC, then he may reject the Proposal. The Panel Secretary will inform the Proposer of the rejection and report the matter to the Panel at their next meeting. The Panel can reverse the Panel Secretary's decision and if this happens the Panel Secretary will inform the Proposer.

   The completed form should be returned to:

   Beverley Viney
   Panel Secretary
   Commercial Frameworks
   National Grid
   National Grid House
   Warwick Technology Park
   Gallows Hill
   Warwick
   CV34 6DA

   Or via e-mail to: Beverley.Viney@uk.ngrid.com

   (Participants submitting this form by email will need to send a statement to the effect that the proposer acknowledges that on acceptance of the proposal for consideration by the Amendments Panel, a proposer which is not a CUSC Party shall grant a licence in accordance with Paragraph 8.15.7 of the CUSC. A Proposer that is a CUSC Party shall be deemed to have granted this Licence).

3. Applicable CUSC Objectives** - These are defined within the National Grid Electricity Transmission plc Licence under Section C7F, paragraph 15. Reference should be made to this section when considering a proposed amendment.

ANNEX 8 – DRAFT SO LONG TERM RELEASE METHODOLOGY STATEMENT

The following draft documents were released by National Grid to Working Group 2 as part of its consideration of the auction methodology. The first version of the statement was prepared as part of the consideration of a Price based auction. The second version of the statement was prepared as part of the consideration of a capacity and duration based auction.

Methodology based on price auction

SO Long Term Release Methodology Statement

Purpose of this document

This document provides a description of the mechanism by which The Company will offer Transmission Entry Capacity (TEC) for sale via the Long Term auction process.

It also describes the methodology that The Company will use to determine whether to release TEC to Users primarily in the unconstrained period i.e. beyond investment lead times and details the circumstances when The Company will accept applications for incremental TEC from Users, including the level of financial commitment required from Users to underpin such an application.

Contents

General Information

Background

1. The working assumption is that this document will be incorporated into the CUSC and governed by the processes of the CUSC.

2. Definitions used within this document will be as per the CUSC.

The Company's Obligations

3. This section to be completed once the obligations are fully understood and funding arrangements are established such that if The Company takes on increased obligations to release capacity there is appropriate extra funding.

Chapter 1 - Principles

Purpose of the Methodology Statement

4. The purpose of this document is to provide a description of the mechanism by which The Company will offer Transmission Entry Capacity (TEC) for sale via the Long Term Auction Process.

5. It also describes the methodology that The Company will use to determine whether to release TEC to Users primarily in the unconstrained period i.e. beyond investment lead times and details the circumstances when The Company will accept applications for incremental TEC from Users, including the level of financial commitment required from Users to enable such an application to be successful.

Summary of the methodology underlying the Auction Process

6. The following provides a brief overview of the tasks which will take place as part of the auction process:

- Establish the physical boundary limits based on SQSS security criteria;
- Establish demand in each [Charging Zone];
- Establish the maximum baseline and incremental capacity that is available for each boundary for each year;
- Establish for each boundary which zones participate in the flows across them;
- For boundaries that have a demand of more than 1500 MW behind then set the participation factor to 83%. Additional changes to participation factors may be needed to deal with specific local conditions at some boundaries;
- Enhance the England-Scotland boundary to include the BETTA transition arrangements;
- Publish market information covering baseline capacity at boundaries / zones and incremental capacity for each year;
- Invite bids for capacity at each of the Nodes for each of the years;
- Run the boundary flow auction to maximise bid income whilst ensuring that the flows across each boundary is not exceeded;
- [Set the cleared price to the lowest price that has been accepted behind the boundary];
- Publish the results of each auction round promptly to the market and allow for revision (between rounds) of bid price and volume with a reduction in volume being only reversible if another party subsequently reduces volume behind the same boundary;
- Revision of bids and volume is allowed until no further movement takes place.

Chapter 2 – Auction Process

Introduction and the product being offered for sale

7. This document considers the allocation of TEC at a particular Node in any Financial Year.

8. A User shall apply for TEC at a Node as part of the Long Term auction process, but the rationale surrounding the release of TEC will be made by reference to the availability of Boundary Capability at the various Boundaries on the System in accordance with the methodology outlined within Chapter [3] of this document.

9. By submitting a bid as part of the Long Term auction process for TEC at a Node for a particular Financial Year, a User agrees to pay by way of [TEC Charges] the resultant [cleared price/bid price] for the TEC allocated in accordance with this Chapter for the relevant Financial Year.

10. In respect of a Boundary and in relation to each day of a particular Financial Year:

    (a) Baseline Annual Boundary Capability is the amount of Boundary Capability which The Company is required to make available to Users pursuant to [either the Licence or the CUSC];

    (b) Incremental Annual Boundary Capability is the amount of Boundary Capability (if any) in excess of the Unsold Annual Boundary Capability which The Company may (but shall not be required to) invite applications for as part of the TEC invitation; and

    (c) Unsold Annual Boundary Capability is the amount of Boundary Capability that The Company still has an obligation to make available as at the time of issuing the TEC invitation. *[Note that this could be remaining unsold baseline or unsold incremental from previous auction release]*

Annual Invitation Process

11. Between 1 September and 30 October during each Financial Year, The Company will invite, and Users may make, applications for TEC in respect of each Node (the TEC invitation dates).

12. The Company will invite applications for TEC for each of the Financial Years for Financial Year + 1 to Financial Year + 40 for such aggregate amounts of TEC as is specified in the TEC invitation.

13. By no later than 2 months before the first TEC invitation date in any Financial Year, The Company will notify Users of the [applicable reserve prices] [or any other prices] to apply in respect of each [Boundary/Charging Zone] for the purpose of the initial TEC invitation. In addition, The Company will issue the initial Auction Model to Users.

14. The Company's initial TEC invitation will specify:

(a) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*
(b) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale].*
(c) [and the applicable reserve price function which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
(d) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability].*
(e) The details of the LCN Register and the Wider Access Register.

15. By no later than 15 August immediately before the first TEC invitation date in any Financial Year, The Company will issue Users with the final TEC invitation and the final version of the Auction Model.

16. The Company's final TEC invitation will specify:

(a) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*
(b) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale].*
(c) [and the applicable reserve price curve which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
(d) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability].*
(e) The LCN Register and the Wider Access Register.

[the rationale behind an initial invitation and a final invitation is to take account of any referred offers for LCN]

17. The Available Annual Boundary Capability for a Boundary is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

(a) Unsold Annual Boundary Capability (if any); and
(b) Incremental Annual Boundary Capability (if any)

18. A User may not apply for or be registered as holding TEC at a Node in an amount less than [1 MW] (the minimum eligible amount).

19. Users may not apply for TEC in any Financial Year unless they have a valid LCN offer applying for that particular Financial Year (or part thereof) in place by one Business Day prior to 15 August immediately before the TEC invitation period.

Annual Auction Application Process

20. Users may apply for TEC for each of Financial Year + 1 to Financial Year + 40 (inclusive) in respect of a Node on each day of the TEC invitation period.

21. Each application for TEC in respect of Financial Year +1 to Financial Year + 40 (inclusive) will specify:

    (a) The identity of the User;
    (b) The Node at which capacity is required;
    (c) The Financial Year(s) being applied for;
    (d) The amount [(not less than the minimum eligible amount)] of TEC applied for (in MW) during the Financial Year(s);
    (e) The minimum amount of TEC which they would be willing to be allocated; *[this is to allow Users the ability to signal that were bids to be pro-rated, there is a minimum amount of TEC which they would wish to be allocated and if the allocation was below this, then the assumption is that the bid would be rejected and not allocated]* and
    (f) The price (being [either an applicable [Boundary/Charging Zone] reserve price applicable to the particular Node or a price higher than the applicable reserve price]) in respect of which the User is applying for the amount of TEC (in £/MW to 2 decimal places (i.e to the nearest penny)).

22. A bid for TEC may be submitted, withdrawn or amended between 08:00 hours until 17:00 hours on each day of the TEC invitation period unless the auction has reached Stability (in which case the auction has closed).

23. On any day of the TEC invitation period, a User may be registered as holding a maximum of 5 bids for TEC per BMU per Node per Financial Year.*[Bids are additive not mutually exclusive, hence assumption is that this allows the User flexibility to put in a series of bids at different prices]*

24. The Company will reject a bid for TEC submitted on a TEC invitation date if it does not comply with the requirements of this Chapter. *[this includes having a valid LCN]*

25. There will be a validation process included as part of the User posting bids to both allow them to confirm that they wish to proceed with the bids and to ensure that they know that a particular bid has been received.

26. *[There will need to be a link back to any limitations under the CUSC around bids being placed which exceed any Credit limits? Suggest there would be a number of days when Users will need to post credit, i.e. within [5] business days, else bids are rejected – still needs to be discussed]*

Stability of Annual Auction Application Process

27. The Long Term Auction will close early if Stability is reached, but will not close before the [6th] day of the TEC invitation period. *[i.e. auction open for a minimum of [5] days]*

28. Stability is reached if in respect of any TEC invitation date, the cleared price after 17:00 for a particular [Boundary/Charging Zone and Financial Year combination] on that TEC invitation date does not change by more than £0.05/MW compared to the corresponding prevailing cleared price in respect of bids submitted by Users by 17:00 hours on the two immediately preceding TEC invitation date in all but 2 or fewer [Boundary/Charging Zone(s) and Financial Year combinations].

29. In the event that the auction has closed following Stability being reached:

    (a) The Company will not later than 20:00 on that day of the TEC invitation period notify Users that the TEC invitation period has ended; and
    (b) Users shall not be allowed to submit and The Company will not accept any further TEC bids in respect of the TEC invitation.

Annual Auction Allocation Process

30. [Only bids at or above the applicable [Boundary/Charging Zone] reserve price function will be considered when allocating TEC and therefore all bids below this reserve price function will be disregarded.]

31. For each Financial Year, valid bids [at or above the applicable reserve price function] for TEC will be allocated according to price applicable for each [Boundary/Charging Zone].

32. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is equal to or below the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then TEC will be allocated in the amount of TEC applied for.

33. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is above the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then the bids will be ranked in order of price, with the highest price being the first considered.

34. In that Financial Year, TEC will then be allocated in the amount of TEC applied for to the highest priced bids first, then the next highest such that the TEC will be allocated up to the Actual Available Boundary Capability where possible.

35. If in any Financial Year there are equally priced bids, then TEC will be allocated pro rata to the amount of TEC applied for provided that the amount to be allocated is above that User's minimum amount as specified as part of that User's bid. If any initial allocation would be below that User's minimum amount, then that User's bid will be disregarded and the allocation will be made between the valid bids which remain. However, in the event that more than one User has specified a minimum amount and the initial allocated amount would be below the minimum amount, then bids will be disregarded in order of value such that the User's bids which provide the least value (in terms of revenue less cost) will be the first bid to be disregarded (and so on) such that the bids can be allocated provided that the amount is above any User's minimum amount.

36. [In any Financial Year and for each [Boundary/Charging Zone], the price paid (in £/MW) of the last valid bid to which TEC was allocated sets the applicable cleared price.]

37. Once the Actual Available Boundary Capability in any Financial Year has been allocated any remaining bids relating to that particular Financial Year will remain unsatisfied.

38. The price paid (in £/MW) by each User in relation to the amount of TEC which it is registered as holding in a particular Financial Year shall be the [applicable Boundary/Charging Zone cleared price/bid price] which has been determined with reference to the Actual Available Annual Boundary Capability for that particular Financial Year. *[Note that allocation takes place on the actual bid amounts, but Users pay either the bid price or the cleared price]*

39. The process described in Paragraphs [30] to [38] will be repeated for each of Financial Year + 1 to Financial Year + 40 (inclusive).

40. The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

    (a) Unsold Annual Boundary Capability (as is determined prior to the TEC invitation);
    (b) Any Incremental Annual Boundary Capability (which will not exceed the Available Annual Boundary Capability in that Financial Year as published in the TEC invitation) which The Company is required to make available pursuant to the Incremental Release Methodology as described within [Chapter 3] of this document; and
    (c) [Any additional Annual Boundary Capability which The Company in its sole discretion determines to make available to Users.]

Annual Auction Information Process

41. By 20:00 on each day in the TEC invitation period, The Company will calculate and notify Users of:

    (a) The bid amount (MW) and [cleared] price (£/MW) for each Financial Year during Financial Year + 1 to Financial Year + 40 of the prevailing bids and the relevant Node which would be allocated were the auction to close after that particular day in the TEC invitation period; *[Note that working assumption is for all information to be available to all Users]*
    (b) The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 were the auction to close after that particular day in the TEC invitation period [and an indication of the amount of Incremental Annual Boundary Capability which would be released];and
    (c) An indication of the level of changes between the previous two rounds of the auction such that it would enable Users to gauge the likelihood of stability being reached.

42. Once the auction has closed, The Company will, not later than [some time – depends on funding debate re provision of incremental – it is two months in the Gas regime] following the last TEC invitation date, inform each User of those bids which have been accepted and the amount of TEC which it is registered as holding for each Financial Year in respect of a Node. *[the timing of being able to confirm allocation amounts to Users depends on any limitations/restrictions in the licence]*

43. Within one Business Day after any notification under Paragraph [42] above, The Company will notify all Users of:

    (a) The bid amount (MW) and [cleared] price (£/MW) for each Financial Year during Financial Year + 1 to Financial Year + 40 of the bids and the relevant Node which were allocated;
    (b) The Actual Available Annual Boundary Capability for each Boundary which was available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 [and an indication of the amount of Incremental Annual Boundary Capability which would be released];
    (c) [The number of Users who submitted successful bids and the number of Users who submitted unsuccessful bids]; and
    (d) The weighted average price of the allocated capacity bids.

44. Following allocation, but before the following 1 April, the successful bids will be recorded in the Users' bilateral agreements and published in the Wider Access Register.

45. [Updated Annual Boundary Capabilities following the auction would need to be recorded somewhere and published.]

Chapter 3 – Incremental release methodology

Decision making applied

46. The information for considering whether or not to release incremental TEC in any Financial Year up to the level of Available TEC as published within the TEC invitation will be based on indications of Users' demand for TEC as revealed by the application process described in Chapter 2 above.

47. The Boundary Constraint Model has been developed such that the sum of the revenue derived from accepted bids (being [either the cleared price or the bid price]) for TEC less any reinforcement costs is maximised over the entire system subject to a number of linear constraints which ensure that net generation behind each boundary is less than or equal to that particular Boundary's capability as determined after the release of incremental boundary capability, i.e. the Actual Available Annual Boundary Capability.

Procedure for Allocating Incremental TEC

48. The following section outlines the methodology which is to be applied to determine whether any Incremental Annual Boundary Capability has been triggered in any Financial Year (and subsequent Financial Years). If the test is passed, then there is a presumption that incremental TEC is released at the relevant Node(s) from the relevant Financial Year.

49. For each Boundary, simultaneously across all Boundaries, consider the first year for which Users signal (by placing valid bids) a requirement for TEC above the prevailing Actual Available Annual Boundary Capability.

50. In order to establish if there is a sufficient amount of Long Term User Commitment to underpin the release of incremental TEC, the valid bids in that Financial Year plus the subsequent 7 Financial Years will be considered. *[i.e. only look over 8 years of bids for a signal for incremental]*

51. If there is:

    (a) Demand for that particular level of incremental TEC in the subsequent 7 years (i.e. 8 years worth in total); and/or
    (b) The net present value of the additional bid revenue which would be generated across the Financial Years for which that particular level of incremental TEC has been signalled is greater than or equal to 50% of [that required by reference to the reserve price function]

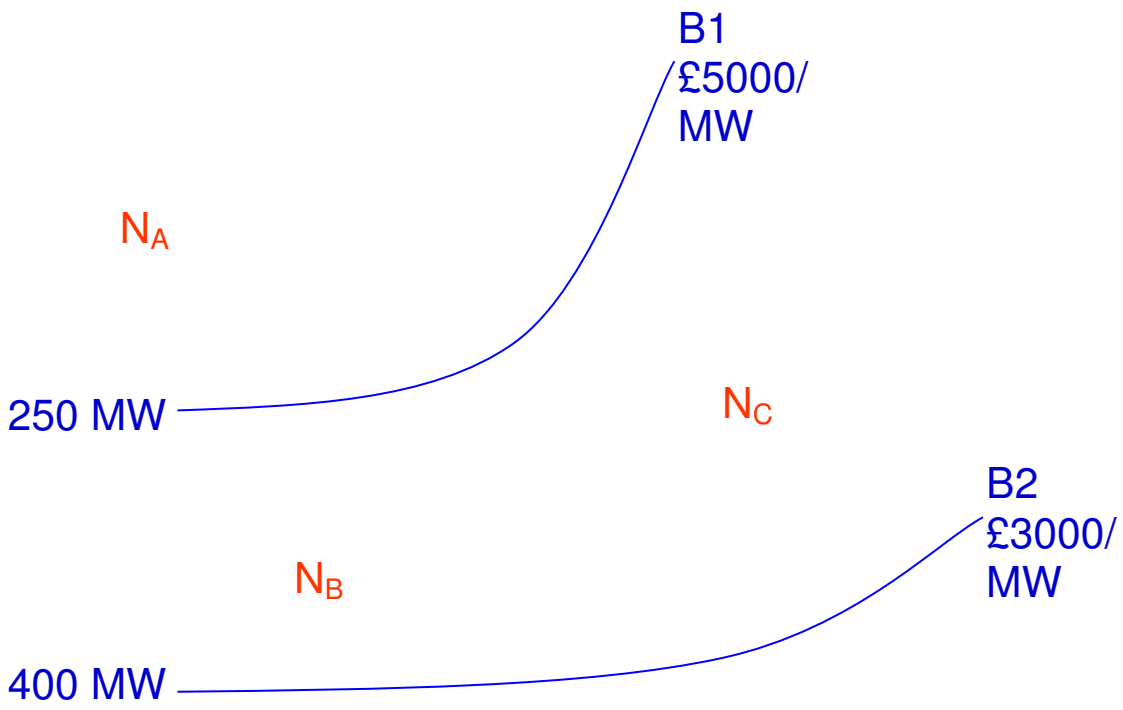
    then this means that the test for the release of such incremental TEC has been passed and this will be released to Users as part of the Actual Available Annual Boundary Capability and allocated to Users in accordance with the relevant procedure.

Simple example of Allocating Incremental TEC – single year example

52. The following simplified example illustrates how the process will work where only two Boundaries are considered and there are applicable reserve prices.

53. Consider two adjacent Boundaries on the system, B1 and B2. Assuming that prior to the auction taking place, the Actual Available Boundary Capability in the first Financial Year for B1 was 250 MW and for B2 400 MW.

54. Assume that there is only one Node, N_A, behind Boundary B1 and that there are two Nodes, N_B and N_C, behind Boundary B2 and that the applicable reserve prices commensurate with the Actual Available Boundary Capability are £5000/MW for B1 and £3000/MW for B2. Node N_A will therefore need to bid at least £5000/MW for its bids to be considered (for B1, but effectively £8000/MW for its bids to be considered at B2) and Nodes N_B and N_C will need to bid at least £3000/MW.



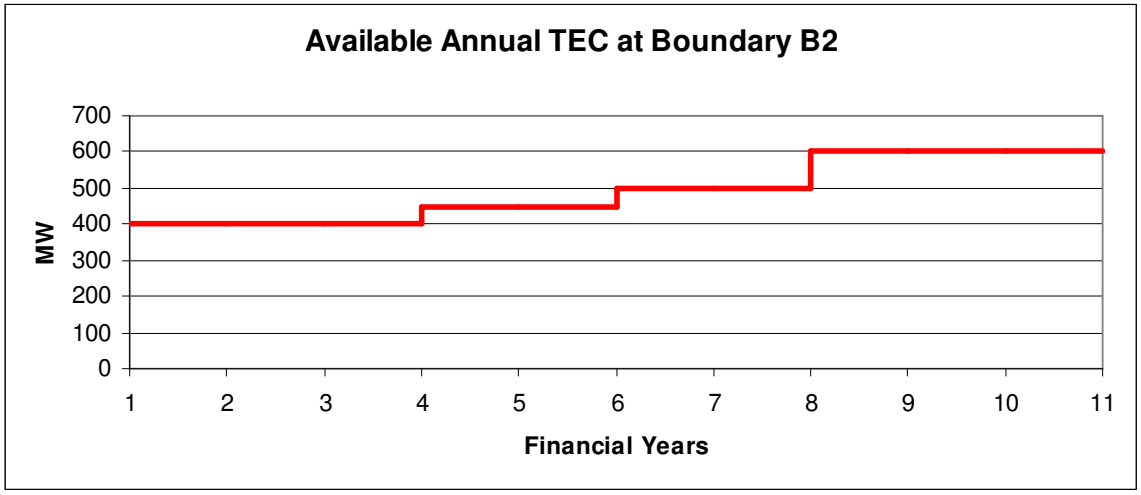
55. If Node N_A requires 200 MW, Node N_B requires 100 MW and Node N_C requires 150 MW and Node N_A bids £8000/MW, Node N_B bids £5000/MW and Node N_C bids £3000/MW, then the bids bid will be allocated as follows.

56. As there is no competition at the B1 Boundary, Node N_A will be allocated its 200 MW at that Boundary in full. There is however competition at the B2 Boundary as the total of the bids at B2 is in excess of the Actual Available Boundary Capability of 400 MW.

57. By considering only this one Financial Year in isolation, Node N_A will be allocated its 200 MW in full (and will pay its bid price of £8000/MW), Node N_B will be allocated its 100 MW in full (and will pay [either its bid price of £5000/MW or the cleared price of £3000/MW]) and Node N_C will only receive 100 MW (and will pay [£3000/MW which is both its bid price and the cleared price for the Charging Zone], but will not be allocated in full leaving 50 MW of its demand unsatisfied) as the bids are allocated to the highest priced bids first up to the Actual Available Boundary Capability.

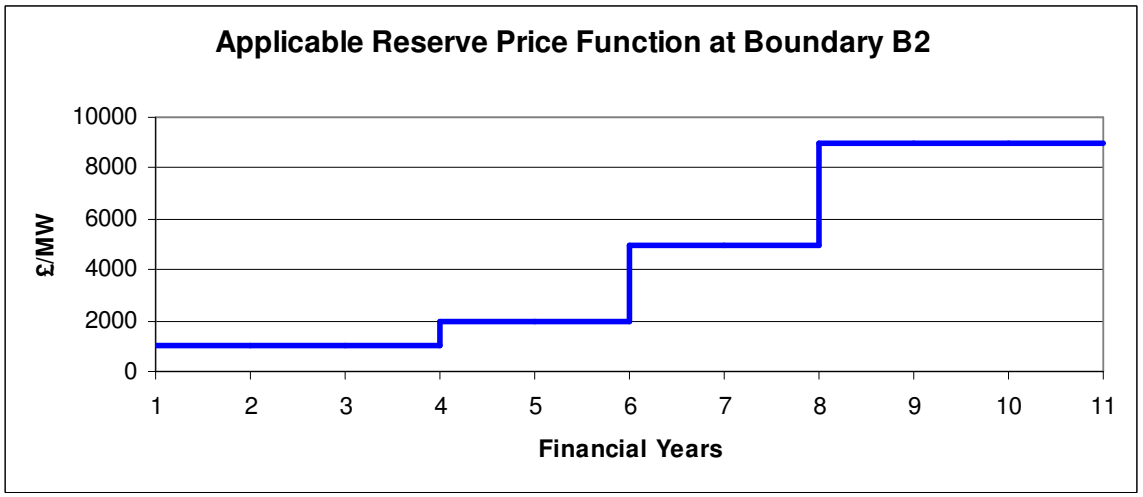
Simple example of Allocating Incremental TEC in a Pay-as bid auction with reserve prices – multi-year example

58. Taking the above example, further assume that as part of the TEC invitation, The Company indicated that it could provide an increasing level of Available Boundary Capability at Boundary B2 over a number of years as per the following profile:



59. This means that The Company is indicating that it could provide increased capacity at Boundary B2 from Financial Year 4 onwards.

60. Also assume that the reserve price function associated with this increase in Available Annual TEC at Boundary B2 was non-linear, such that the provision of the 400 MW had a reserve price set at £1000/MW, 450 MW a reserve price of £2000/MW, 500 MW a reserve price of £5000/MW and 600 MW a reserve price of £9000/MW, as shown by the following:



61. If the pattern of bids seen in the single year were to be repeated in the following 7 subsequent Financial Years, then as there would be 8 years in total of bids at or above the applicable reserve price, there would be enough Long Term User Commitment to justify the release of the extra 50 MW at Boundary B2. In that case from Financial Year 4 onwards the Available Actual Annual Boundary Capability at Boundary B2 would be increased to 450 MW from the previous value of 400 MW and all the bids would be allocated in full from that point onwards (and would pay [the cleared price/their bid prices]).

The following text shows how a version of the bidding process and allocation parts of the above statement could be changed to cater for a Capacity and Duration based auction.

Annual Invitation Process

1. Between 1 September and 30 October during each Financial Year, The Company will invite, and Users may make, applications for TEC in respect of each Node (the TEC invitation dates).

2. The Company will invite applications for TEC for each of the Financial Years for Financial Year + 1 to Financial Year + 40 for such aggregate amounts of TEC as is specified in the TEC invitation.

3. By no later than 2 months before the first TEC invitation date in any Financial Year, The Company will notify Users of the [applicable [long-run] prices relating to the Available Annual Boundary Capability] [or any other prices] to apply in respect of each [Boundary/Charging Zone] for the purpose of the initial TEC invitation. In addition, The Company will issue the initial Auction Model to Users.

4. The Company's initial TEC invitation will specify:

   (a) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*
   (b) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale]*.
   (c) [and the applicable [long-run] price function which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
   (d) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability]*.
   (e) The details of the LCN Register and the Wider Access Register.

5. By no later than 15 August immediately before the first TEC invitation date in any Financial Year, The Company will issue Users with the final TEC invitation and the final version of the Auction Model.

6. The Company's final TEC invitation will specify:

   (a) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*

(b) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale].*
(c) [and the applicable [long-run] price curve which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
(d) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability].*
(e) The LCN Register and the Wider Access Register.

[the rationale behind an initial invitation and a final invitation is to take account of any referred offers for LCN]

7. The Available Annual Boundary Capability for a Boundary is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

(a) Unsold Annual Boundary Capability (if any); and
(b) Incremental Annual Boundary Capability (if any)

8. A User may not apply for or be registered as holding TEC at a Node in an amount less than [1 MW] (the minimum eligible amount).

9. Users may not apply for TEC in any Financial Year unless they have a valid LCN offer applying for that particular Financial Year (or part thereof) in place by one Business Day prior to 15 August immediately before the TEC invitation period.

Annual Auction Application Process

10. Users may apply for TEC for each of Financial Year + 1 to Financial Year + 40 (inclusive) in respect of a Node on each day of the TEC invitation period.

11. Each application for TEC in respect of Financial Year +1 to Financial Year + 40 (inclusive) will specify:

(a) The identity of the User;
(b) The Node at which capacity is required;
(c) The Financial Year(s) being applied for;
(d) The amount [(not less than the minimum eligible amount)] of TEC applied for (in MW) during the Financial Year(s);
(e) The applicable Load Duration function for the Node (to be expressed as a % requirement for each of the [four] percentage of use categories of 100%, 75%, 50% and 25%) which will apply at that Node and
(f) The buy-back price which is the price that the User is willing to accept in respect of that TEC were there to be a constraint associated with that amount of TEC being allocated (in £/MWh to 2 decimal places (i.e to the nearest penny)).

12. A bid for TEC may be submitted, withdrawn or amended between 08:00 hours until 17:00 hours on each day of the TEC invitation period unless the auction has reached Stability (in which case the auction has closed).

13. The Company will reject a bid for TEC submitted on a TEC invitation date if it does not comply with the requirements of this Chapter. *[this includes having a valid LCN]*

14. There will be a validation process included as part of the User posting bids to both allow them to confirm that they wish to proceed with the bids and to ensure that they know that a particular bid has been received.

15. *[There will need to be a link back to any limitations under the CUSC around bids being placed which exceed any Credit limits? Suggest there would be a number of days when Users will need to post credit, i.e. within [5] business days, else bids are rejected – still needs to be discussed]*

Stability of Annual Auction Application Process

16. The Long Term Auction will close early if Stability is reached, but will not close before the [6th] day of the TEC invitation period. *[i.e. auction open for a minimum of [5] days]*

17. [Stability is reached if in respect of any TEC invitation date, the [average price per MW over all allocated TEC, i.e. both Long-run and Short-run priced TEC] after 17:00 [over the entire system and Financial Year combination] [for a particular [Boundary/Charging Zone and Financial Year combination] on that TEC invitation date does not change by more than [£x/MW] compared to the corresponding prevailing [average price] in respect of bids submitted by Users by 17:00 hours on the two immediately preceding TEC invitation dates [in all but 2 or fewer [Boundary/Charging Zone(s) and Financial Year combinations]].

18. In the event that the auction has closed following Stability being reached:

    (a) The Company will not later than 20:00 on that day of the TEC invitation period notify Users that the TEC invitation period has ended; and
    (b) Users shall not be allowed to submit and The Company will not accept any further TEC bids in respect of the TEC invitation.

Annual Auction Allocation Process

19. In any Financial Year, the amount of TEC allocated to a User will be the amount applied for in MW. *[Note that all Users get what they bid for – the allocation process is all about setting the price that each User would pay for the different amounts of capacity they have been allocated.]*

20. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is equal to or below the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then TEC will be allocated as [L-T] in the amount of TEC applied for.

21. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is above the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then the bids will be allocated as [Long-run priced] pro rata to the amount of TEC applied for using the [agreed algorithm – to be described when developed].

22. If in any Financial Year the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is above the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone], then following the application of the pro-ration rules described in paragraph [21], the remaining amount of TEC applied for by Users above the amount allocated as [Long-run priced] will be allocated to Users as [Short-run priced] [This could be explicit or implicit].

23. The price paid (in £/MW) by each User in relation to the amount of TEC which it is registered as holding in a particular Financial Year shall be the [weighted average price applicable to the [Long-run priced] and [Short-run priced] TEC allocated applicable at that Boundary/Charging Zone] which has been determined with reference to the Actual Available Annual Boundary Capability for that particular Financial Year.

24. The process described in Paragraphs [19] to [23] will be repeated for each of Financial Year + 1 to Financial Year + 40 (inclusive).

25. The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

    (a) Unsold Annual Boundary Capability (as is determined prior to the TEC invitation);
    (b) Any Incremental Annual Boundary Capability (which will not exceed the Available Annual Boundary Capability in that Financial Year as published in the TEC invitation) which The Company is required to make available pursuant to the Incremental Release Methodology as described within [Chapter 3] of this document; and
    (c) [Any additional Annual Boundary Capability which The Company in its sole discretion determines to make available to Users.]

26. [Allocation rules and pricing information to be worked up further once they've been finalised. Pricing could be on a £/MW for Long-run priced and £/MWh basis for Short-run or a weighted average capacity price as suggested above?]

Annual Auction Information Process

27. By 20:00 on each day in the TEC invitation period, The Company will calculate and notify Users of:

    (a) The bid amount (MW) [subject to the weighted average price (£/MW)] [or subject to the [Long-run]] price (£/MW) and the amount (MW) subject to the (£/MWh) (short-run cost related price)] [or just an average £/MW] for each Financial Year during Financial Year + 1 to Financial Year + 40 of the prevailing bids and the relevant Node which would be allocated were the auction to close after that particular day in the TEC invitation period; *[Note that working assumption is for all information to be available to all Users]*
    (b) The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 were the auction to close after that particular day in the TEC invitation period [and an indication of the amount of Incremental Annual Boundary Capability which would be released];and

(c) An indication of the level of changes between the previous two rounds of the auction such that it would enable Users to gauge the likelihood of stability being reached.

Methodology based on a Capacity / Duration auction

SO Long Term Release Methodology Statement

Purpose of this document

This document provides a description of the mechanism by which The Company will offer Transmission Entry Capacity (TEC) for sale via the Long Term auction process.

It also describes the methodology that The Company will use to determine whether to release TEC to Users primarily in the unconstrained period i.e. beyond investment lead times and details the circumstances when The Company will accept applications for incremental TEC from Users, including the level of financial commitment required from Users to underpin such an application.

Contents

General Information

Background

1. The working assumption is that this document will be incorporated into the CUSC and governed by the processes of the CUSC.

2. Definitions used within this document will be as per the CUSC.

The Company's Obligations

3. This section to be completed once the obligations are fully understood and funding arrangements are established such that if The Company takes on increased obligations to release capacity there is appropriate extra funding.

Chapter 1 - Principles

Purpose of the Methodology Statement

4. The purpose of this document is to provide a description of the mechanism by which The Company will offer Transmission Entry Capacity (TEC) for sale via the Long Term Auction Process.

5. It also describes the methodology that The Company will use to determine whether to release TEC to Users primarily in the unconstrained period i.e. beyond investment lead times and details the circumstances when The Company will accept applications for incremental TEC from Users, including the level of financial commitment required from Users to enable such an application to be successful.

Summary of the methodology underlying the Auction Process

6. The following provides a brief overview of the tasks which will take place as part of the auction process:

- Establish the physical boundary limits based on [SQSS security criteria];
- Establish demand in each [Charging Zone];
- Establish the maximum baseline and incremental capacity that is available for each boundary for each year;
- Establish for each boundary which zones participate in the flows across them;
- [For boundaries that have a demand of more than 1500 MW behind then set the participation factor to 83%. Additional changes to participation factors may be needed to deal with specific local conditions at some boundaries;]
- Set the baseline capacity at the England-Scotland boundary to physical capability, i.e. do **not** include the BETTA transition arrangements *[Assumption is that any allocation above physical capability will be as Short-run priced TEC]*;
- Publish market information covering baseline capacity at boundaries / zones and incremental capacity for each year;
- Invite bids for capacity at each of the Nodes for each of the years;
- Run the allocation to allow Users' bids to be satisfied in full;
- If there is demand for capacity above Available capability then Users' bids will be satisfied as a combination of [Long-run priced] TEC and [Short-run priced] TEC. If not, then Users will only receive an offer for [Long-run priced] TEC;
- Publish the results of each auction round promptly to the market and allow for revision (between rounds) of bid price and volume;
- Revision of bids and volume is allowed until no further movement takes place;
- Following the application of the Validation process, a User's allocation of TEC may be amended. If this happens, then any impacted Users may have their combination of [Long-run priced] TEC and [Short-run priced] TEC revised.

Chapter 2 – Auction Process

Introduction and the product being offered for sale

7. This document considers the allocation of TEC at a particular Node in any Financial Year.

8. A User shall apply for TEC at a Node as part of the Long Term auction process, but the rationale surrounding the release of TEC will be made by reference to the availability of Boundary Capability at the various Boundaries on the System in accordance with the methodology outlined within Chapter [3] of this document.

9. By submitting a bid as part of the Long Term auction process for TEC at a Node for a particular Financial Year, a User agrees to pay by way of [TEC Charges] the resultant [bid price(s)] for the TEC allocated in accordance with this Chapter for the relevant Financial Year.

10. In respect of a Boundary and in relation to each day of a particular Financial Year:

    (a) Baseline Annual Boundary Capability is the amount of Boundary Capability which The Company is required to make available to Users pursuant to [either the Licence or the CUSC];

    (b) Incremental Annual Boundary Capability is the amount of Boundary Capability (if any) in excess of the Unsold Annual Boundary Capability which The Company may (but shall not be required to) invite applications for as part of the TEC invitation; and

    (c) Unsold Annual Boundary Capability is the amount of Boundary Capability that The Company still has an obligation to make available as at the time of issuing the TEC invitation. *[Note that this could be remaining unsold baseline or unsold incremental from previous auction release]*

Annual Invitation Process

11. Between 1 September and 30 October during each Financial Year, The Company will invite, and Users may make, applications for TEC in respect of each Node (the TEC invitation dates).

12. The Company will invite applications for TEC for each of the Financial Years for Financial Year + 1 to Financial Year + 40 for such aggregate amounts of TEC as is specified in the TEC invitation.

13. By no later than 2 months before the first TEC invitation date in any Financial Year, The Company will notify Users of the [applicable [Long-run] prices] relating to the Available Annual Boundary Capability] [or any other prices] to apply in respect of each [Boundary/Charging Zone] for the purpose of the initial TEC invitation. In addition, The Company will issue the initial Auction Model to Users.

14. The Company's initial TEC invitation will specify:

(f) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*
(g) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale].*
(h) [and the applicable [Long-run] price which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
(i) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability].*
(j) The details of the LCN Register and the Wider Access Register.

15. By no later than 15 August immediately before the first TEC invitation date in any Financial Year, The Company will issue Users with the final TEC invitation and the final version of the Auction Model.

16. The Company's final TEC invitation will specify:

(k) The dates on which applications pursuant to the TEC invitation may be made, which will be a period of [nn] [consecutive] Business Days (the TEC invitation period); *[this may not be consecutive days if Users want to have time between rounds to fully understand the implications of the previous round's bids]*
(l) For each Boundary and in respect of each of Financial Year +1 to Financial Year + 40, the Available Annual Boundary Capability; *[this will consist of the baseline capacity and show how the incremental capacity can ramp up over time as and when extra capacity can be offered for sale].*
(m) [and the applicable [Long-run] price which exists for each [Boundary/Charging Zone] [as set out within the Statement of Use of System Charges]];
(n) The manner in which each of the Nodes relate to the various Boundaries [and/or Charging Zones] on the System; and *[in the form of a Matrix of mappings so that Users may determine how TEC at a particular Node relates to Boundary Capability].*
(o) The LCN Register and the Wider Access Register.

[the rationale behind an initial invitation and a final invitation is to take account of any referred offers for LCN]

17. The Available Annual Boundary Capability for a Boundary is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

(p) Unsold Annual Boundary Capability (if any); and
(q) Incremental Annual Boundary Capability (if any)

18. A User may not apply for or be registered as holding TEC at a Node in an amount less than [1 MW] (the minimum eligible amount).

19. Users may not apply for TEC in any Financial Year unless they have a valid LCN offer applying for that particular Financial Year (or part thereof) in place by one Business Day prior to 15 August immediately before the TEC invitation period.

Annual Auction Application Process

20. Users may apply for TEC for each of Financial Year + 1 to Financial Year + 40 (inclusive) in respect of a Node on each day of the TEC invitation period.

21. Each application for TEC in respect of Financial Year +1 to Financial Year + 40 (inclusive) will specify:

    (r) The identity of the User;
    (s) The Node at which capacity is required;
    (t) The Financial Year(s) being applied for; and
    (u) The amount [(not less than the minimum eligible amount)] of TEC applied for (in MW) during the Financial Year(s).

22. A bid for TEC may be submitted, withdrawn or amended between 08:00 hours until 17:00 hours on each day of the TEC invitation period unless the auction has reached Stability (in which case the auction has closed).

23. The Company will reject a bid for TEC submitted on a TEC invitation date if it does not comply with the requirements of this Chapter. *[this includes having a valid LCN]*

24. [A User will not be able to place a bid during the TEC invitation period for a higher amount of TEC in any Financial Year and Node combination than that which the User placed in that Financial Year at that particular Node during the first day of the TEC invitation period.] *[The rationale here was that if there was no restriction on Users being able to change volumes up or down, then in order to provide information to the market, all Users would need to submit their maximum requirements on day 1 of the auction]*

25. There will be a validation process included as part of the User posting bids to both allow them to confirm that they wish to proceed with the bids and to ensure that they know that a particular bid has been received.

26. *[There will need to be a link back to any limitations under the CUSC around bids being placed which exceed any Credit limits? Suggest there would be a number of days when users will need to post credit, i.e. within [5] business days, else bids are rejected – still needs to be discussed]*

Stability of Annual Auction Application Process

27. The Long Term Auction will close early if Stability is reached, but will not close before the [6th] day of the TEC invitation period. *[i.e. auction open for a minimum of [5] days]*

28. [Stability is reached if in respect of any TEC invitation date, the [average price per MW over all allocated TEC, i.e both the Long-run and Short-run priced TEC] after 17:00 [over the entire system and Financial Year combination] [for a particular [Boundary/Charging Zone and Financial Year combination]] on that TEC invitation date does not change by more than £x/MW compared to the corresponding prevailing [average price] in respect of bids submitted by Users by 17:00 hours on the two immediately preceding TEC invitation date [in all but 2 or fewer [Boundary/Charging Zone(s) and Financial Year combinations]].

29. In the event that the auction has closed following Stability being reached:

    (v) The Company will not later than 20:00 on that day of the TEC invitation period notify Users that the TEC invitation period has ended; and
    (w) Users shall not be allowed to submit and The Company will not accept any further TEC bids in respect of the TEC invitation.

Annual Auction Allocation Process

30. In any Financial Year, the amount of TEC allocated to a User will be the amount applied for in MW. TEC will be allocated as a combination of [Long-run priced] TEC and [Short-run priced] TEC. *[Note that all Users get what they bid for – the allocation process is all about setting the price that each User would pay for the different amounts of capacity they have been allocated.]*

31. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is equal to or below the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then TEC will be allocated as [Long-run priced] TEC in the amount of TEC applied for.

32. If in any Financial Year, the sum of all the bids placed relating to a particular [Boundary/Charging Zone] is above the Actual Available Annual Boundary Capability applicable to that [Boundary/Charging Zone] then the bids will be allocated as a combination of [Long-run priced] TEC and [Short-run priced] TEC in the following manner:

    7 the allocation of [Long-run priced] TEC will be made pro-rata to the amount of TEC applied for by all Users at the relevant [Boundary/Charging Zone] using the [agreed algorithm – to be described when developed]; and
    8 the remaining amount of TEC applied for by Users above the amount allocated as [Long-run priced] TEC will be allocated to Users as [Short-run priced] TEC. *[Note that this could be explicit or implicit depending on how the charging is developed]]*

33. The price paid by each User in relation to the amount of [Long-run priced] TEC which it is registered as holding in a particular Financial Year shall be the applicable [Long-run price] (in £/MW) which has been determined with reference to the Actual Available Annual Boundary Capability for that particular Financial Year.

34. The price paid by each User in relation to the amount of [Short-run priced] TEC which it is registered as holding in a particular Financial Year shall be the [Short-run price] (in £/MWh) which is applicable at the time that the particular User is using that [Short-run priced] TEC [and there is a constraint on that part of the Transmission System]. *[Assumption here is that there is a charge per MWh for Short-run (and would only apply if constraint active) and a charge per MW for Long-run would be as set out in the Charging Statement. However, final charging arrangements would need to be decided via a Pricing consultation]*

35. The process described in Paragraphs [30] to [34] will be repeated for each of Financial Year + 1 to Financial Year + 40 (inclusive).

36. The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated is, in respect of a Financial Year during Financial Year +1 to Financial Year + 40 (inclusive), not less than the sum of:

    (a) Unsold Annual Boundary Capability (as is determined prior to the TEC invitation);
    (b) Any Incremental Annual Boundary Capability (which will not exceed the Available Annual Boundary Capability in that Financial Year as published in the TEC invitation) which The Company is required to make available pursuant to the Incremental Release Methodology as described within [Chapter 3] of this document; and
    (c) [Any additional Annual Boundary Capability which The Company in its sole discretion determines to make available to Users.]

Annual Auction Information Process

37. By 20:00 on each day in the TEC invitation period, The Company will calculate and notify Users of:

    (d) The bid amount (MW) [subject to the [Long-run price] (in £/MW)] and the bid amount (MW) [subject to the [Short-run price] (in £/MWh)] for each Financial Year during Financial Year + 1 to Financial Year + 40 of the prevailing bids and the relevant Node which would be allocated were the auction to close after that particular day in the TEC invitation period; *[Note that working assumption is for all information to be available to all Users]*
    (e) The Actual Available Annual Boundary Capability for each Boundary which is available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 were the auction to close after that particular day in the TEC invitation period [and an indication of the amount of Incremental Annual Boundary Capability which would be released];and
    (f) An indication of the level of changes between the previous two rounds of the auction such that it would enable users to gauge the likelihood of stability being reached.

38. Once the auction has closed, The Company will, not later than [some time – depends on funding debate re provision of incremental – it is two months in the Gas regime] following the last TEC invitation date, inform each User of those bids which have been accepted and the amount of TEC which it is registered as holding for each Financial Year in respect of a Node. *[the timing of being able to confirm allocation amounts to Users depends on any limitations/restrictions in the licence]*

39. Within one Business Day after any notification under Paragraph [38] above, The Company will notify all Users of:

    (g) The bid amount (MW) [subject to the [Long-run price] (in £/MW)] and the bid amount (MW) [subject to the [Short-run price] (in £/MWh)] for each Financial Year during Financial Year + 1 to Financial Year + 40 of the bids and the relevant Node which were allocated;
    (h) The Actual Available Annual Boundary Capability for each Boundary which was available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 [and an indication of the amount of Incremental Annual Boundary Capability which would be released];
    (i) [The number of Users who submitted successful bids and the number of Users who submitted unsuccessful bids]; and
    (j) The weighted average price of the allocated capacity bids.

40. Following allocation, but before the following 1 April, the successful bids will be recorded in the Users' bilateral agreements and published in the Wider Access Register.

41. [Updated Annual Boundary Capabilities following the auction would need to be recorded somewhere and published.]

Validation Process

42. Where a User has been allocated an amount of [Long-run priced] TEC and [Short-run priced] TEC and the User fails to adequately validate that it can export onto the GB Transmission System up to the level of TEC allocated to it, The Company may subsequently reduce a User's allocation of TEC (both [Long-run priced] and [Short-run priced]).

43. Following the reduction of a particular User's TEC as a consequence of the Validation process, The Company will re-run the allocation process outlined in Paragraphs [30] to [36] above. This would not only result in an amendment to the proportion of [Long-run priced] and [Short-run priced] TEC which that User would now be registered as holding, but would also affect any other Users who were subject to the original pro-ration process. It is anticipated, in these circumstances, that where there has been a reduction of a particular User's TEC, that those other affected Users should see an increase to the proportion of [Long-run priced] and a reduction to the [Short-run priced] TEC which those other affected Users have as their revised holding.

44. Within one Business Day after the re-application of the allocation process outlined in Paragraph [43] above, The Company will inform each affected User of its revised bid amounts which have now been accepted and the amount of TEC (both [Long-run priced] and [Short-run priced]) which it is registered as holding for each Financial Year in respect of a Node.

45. Within one further Business Day after any notification under Paragraph [44] above, The Company will notify all Users of:

    (k) The revised bid amount (MW) [subject to the [Long-run price] (in £/MW)] and the bid amount (MW) [subject to the [Short-run price] (in £/MWh)] for each Financial Year during Financial Year + 1 to Financial Year + 40 of the bids and the relevant Node which were allocated;

(l) The Actual Available Annual Boundary Capability for each Boundary which was available to be allocated in respect of a Financial Year during Financial Year +1 to Financial Year + 40 [and an indication of the amount of Incremental Annual Boundary Capability which would be released];
(m) [The number of Users who submitted successful bids and the number of Users who submitted unsuccessful bids]; and
(n) The weighted average price of the allocated capacity bids.

46. Following any revised allocation process, the revised successful bids will be recorded in the Users' bilateral agreements and published in the Wider Access Register.

Chapter 3 – Incremental release methodology

Decision making applied

47. The information for considering whether or not to release Incremental TEC in any Financial Year up to the level of Available TEC as inferred by the Available Annual Boundary Capability figures published within the TEC invitation will be based on indications of Users' demand for TEC as revealed by the application process described in Chapter 2 above.

Procedure for Allocating Incremental TEC

48. The following section outlines the methodology which is to be applied to determine whether any Incremental Annual Boundary Capability has been triggered in any Financial Year (and subsequent Financial Years). If the test is passed, then there is a presumption that Incremental TEC is released at the relevant Node(s) from the relevant Financial Year.

49. For each Boundary, simultaneously across all Boundaries, consider the first year for which Users signal (by placing valid bids) a requirement for TEC above the prevailing Actual Available Annual Boundary Capability.

50. In order to establish if there is a sufficient amount of Long Term User Commitment to underpin the release of incremental TEC, the valid bids in that Financial Year plus the subsequent 7 Financial Years will be considered. *[i.e. only look over 8 years of bids for a signal for incremental]*

51. If there is demand for that particular level of Incremental TEC in the subsequent 7 years (i.e. 8 years' worth in total) then this means that the test for the release of such Incremental TEC has been passed and this will be released to Users as part of the Actual Available Annual Boundary Capability and allocated to Users in accordance with the relevant procedure. *[Note that as there is no price signal from Users in this form of the auction, only 8 years' worth of bids considered to trigger the release of incremental capacity which will be priced as Long-run priced TEC]*

ANNEX 9 – RESULT OF WORKING GROUP VOTE

The Working Group voted on whether they believed the original or the Working Group alternatives are **better than the current baseline**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	0	13	0
WGAA1	0	13	0
WGAA2	2	11	0
WGAA3	2	11	0

The Working Group voted on whether they believed the Working Group alternatives are **better than the original proposal**. The result of the vote is described in the following table:

Proposal	Better	Not better	Abstained
Original	-	-	-
WGAA1	1	8	4
WGAA2	3	6	4
WGAA3	4	8	1

The majority of the Working Group believed WGAA1 and WGAA2 were not better than the original or the baseline. The Chair of the Working Group with support of some members of the Working Group took forward WGAA1 and WGAA2. It was noted that if the group received an extension it was important to keep these alternatives under consideration in case further analysis of WGAA3 influences the assessment of these alternatives.

The Working Group voted on which of the proposals they believe best facilitates the applicable CUSC Objectives. The result of this vote is described in the following table:

Proposal	Best
Original	**0**
WGAA1	**0**
WGAA2	**0**
WGAA3	**3**
Abstained	**10**

ANNEX 10 – LEGAL TEXT TO GIVE EFFECT TO THE AMENDMENT AND WORKING GROUP ALTERNATIVE AMENDMENTS

Legal Text to give effect to Working Group Alternative Amendment 2

CAP 166 (LONG TERM ENTRY CAPACITY AUCTIONS): Summary Sheet of Proposed Amendments

1. Overview of Changes

1.1 The changes in the legal drafting that are being proposed to implement CAP 166 essentially consist in introducing the concept of Local Capacity Nomination ("LCN") (which is common to CAP 161-163, 165 and 166) and user commitment (also the subject of CAP 165) in the following sections of the CUSC (in particular Section 3).

1.2 The drafting does not provide for the original CAP 166 but caters for the two Working Group alternative amendments. These are:

- WGAA2 which should be read as the changes for LCN (shown highlighted turquoise) and the additional changes highlighted red\shown in red and underlined;
- WGAA3 which should be read as for WGAA2 but amended as referred to as below;

1.3 In summary the drafting for WGAA2 consists of changes to;

1. CUSC Section 2 (by summary)
2. CUSC Section 3 (by red line against existing sec)
3. CUSC Section 3, Appendix 3 (which is a new appendix to house all the "access products" from Sec 3\6)
4. CUSC Section 6 (by summary)
5. CUSC Section 9 (by summary)
6. CUSC Section 10 (transitional provisions to effectively deal with the "creation" of LCN and the situation until the outcome of the first auction)
7. CUSC Section 11 (by summary)
8. Schedule 2 Exhibit 1 (BCA) by redline
9. Schedule 2 Exhibit 1 (BEGA) by redline
10. Schedule 2 Exhibit 3 (Construction Agreement) by summary
11. Exhibit B (BCA Application) by redline
12. Exhibit C (BCA Offer) by redline
13. Exhibit D (BEGA Application) by redline

14. Exhibit E (BEGA Offer) by redline

1.4 The drafting changes for CAP 166 WGAA3 over WGAA2 are set out as attached.

1.5 Given that a significant number of the changes are to give effect to LCN (and in particular result in the creation of Appendix 3) If any of CAP161, 162 or 163 and/or CAP 165 are approved and implemented prior to this CAP 166 the amendments for CAP 166 will consist only of the differences between the text for LCN as approved for those CAPs and the text as included here.

Proposed Amendments to CUSC Section 2 under CAP 166 (Long Term Entry Capacity Auctions)

Please note that the numbering of the respective paragraphs is given in the heading above each section of text (rather than given next to the paragraph text).

Old paragraph 2.3(Export of Power from Connection Site)

This paragraph has been deleted and an updated version of this paragraph has been moved to CUSC Section 3, which deals with use of system issues, Paragraph 3.2.2

Old paragraph 2.4, now 2.3 (Import of Power to Connection Site)

2.43 IMPORT OF POWER TO CONNECTION SITE

Subject to the other provisions of the **CUSC** and in particular Paragraph 2.2.2(b), the relevant **Bilateral ~~Connection~~ Agreement** and the **Grid Code**, **The Company** shall, as between **The Company** and ~~that **User**~~**a User acting in the category of a Non-Embedded Customer or a Public Distribution System Operator**, transport a supply of power to each **Connection Site** of a **User** through the **GB Transmission System** up to the **Connection Site Demand Capability** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints or by insufficiency of generation which, in either case, could not have been avoided by the exercise of **Good Industry Practice** by **The Company.**

General - Renumbering

Please note that as a result of the proposed amendments, the clause numbering has been changed in some instances (as identified in the paragraph headings, above). This has meant that cross-references throughout the document have changed, those changes have not been shown here, unless they appear in paragraphs with more substantial amendments.

CUSC - SECTION 3

USE OF SYSTEM

CONTENTS

CUSC - SECTION 3

USE OF SYSTEM

1. hidden

2. hidden

3. hiddenINTRODUCTION

3.1.1 This Section 3 deals with use of the **GB Transmission System** and certain related issues. Part I of this Section sets out general provisions (split into Parts A and B dealing with generation and supply), Part II sets out charging related provisions and Part III sets out the credit requirements related to **Use of System**. Depending on the category of connection and/or use of a **User**, the Section dealing with **Connection** (Section 2) may also be applicable.

3.1.2 A User's Use of System may occur in one of the ways specified in Appendix 3 to Section 3 of the CUSC.

PART IA - GENERAL - GENERATION

This Part IA deals with Use of System rights and obligations relating to Power Stations directly Connected to the GB Transmission System, **Embedded Power Stations**, **Small Power Station Trading Parties** and to **Distribution Interconnectors**. References to "**User**" in this Part IA should be construed accordingly.

3.2 ~~1.2~~ RIGHTS TO USE THE GB TRANSMISSION SYSTEM

3.2.1 ~~1.2.1~~ ~~Embedded~~ Use of System

Subject to the other provisions of the **CUSC**, the **Grid Code** and the relevant Bilateral Connection Agreement or **Bilateral Embedded Generation Agreement**, and, for Users other than Power Stations directly connected to the GB Transmission System, subject to there continuing to be a **Distribution Agreement** with the owner/operator of the **Distribution System**, each **User**, as between **The Company** and that **User**, may in relation to each ~~of its **Embedded** generation sites~~Node and each of its **Distribution Interconnectors** transmit (or put, as the case may be) supplies of power on to and/or take supplies of power from the **GB Transmission System** as the case may be.

3.2.2 Subject to the other provisions of the CUSC, the relevant Bilateral Connection Agreement or Bilateral Embedded Generation Agreement and the Grid Code, The Company shall,as between The Company and that User, accept into the GB Transmission System at the specified Node power generated by such User up to that User's LCN as set out in Appendix C of the relevant Bilateral Connection Agreement or Bilateral Embedded Generation Agreement except to the extent (if any) that The Company is prevented from doing so by transmission constraints which could not be avoided by the exercise of Good Industry Practice by The Company.

3.2.3 Other than as provided in Paragraph 3.2.4, and subject to the other provisions of the CUSC, the relevant Bilateral Connection Agreement or Bilateral Embedded Generation Agreement and the Grid Code, each User, as between The Company and that User, shall not, operate its User's Equipment such that it exports on to the GB Transmission System power generated by such User in excess of its LCN as set out in Appendix C of the relevant Bilateral Connection Agreement or Bilateral Embedded Generation Agreement save as expressly permitted or instructed pursuant to an Emergency Instruction under the Grid Code or save as expressly permitted or instructed pursuant to the Fuel Security Code or as may be necessary or expedient in accordance with Good Industry Practice.

3.2.4 Each User in respect of an Embedded Small Power Station and a Distribution Interconnector and as a Trading Party responsible for Embedded Small Power Stations, as between The Company and that User, shall not operate its User's Equipment or equipment for which the User is responsible (as defined in Section K of the Balancing and Settlement Code) such that its export of power onto the GB Transmission System exceeds the LCN set out in Appendix C to the relevant Bilateral Embedded Generation Agreement save as expressly permitted and instructed pursuant to the Fuel Security Code or as may be necessary or expedient in accordance with Good Industry Practice.

Import of Power

3.2.5 Subject to the other provisions of the CUSC the relevant Bilateral Connection Agreement and the Grid Code, The Company shall, as between The Company and a User acting in the category of a Power Station directly connected to the GB Transmission System, transport a supply of power to each Connection Site of such a User through the GB Transmission System up to the Connection Site Demand Capability except to the extent (if any) that The Company is prevented from doing so by transmission constraints or by insufficiency of generation which, in either

case, could not have been avoided by the exercise of Good Industry Practice by The Company.

3.2.6 ~~*1.2.2*~~ **Embedded Power Station and Distribution Interconnector Conditions**

(a) The rights and obligations of a **User**, and **The Company** in connection therewith, are subject to the following conditions precedent having been fulfilled before such rights and obligations arise:

(i) the **User** having provided (in a form reasonably satisfactory to **The Company**) proof of having entered into a **Distribution Agreement** with the owner/operator of the **Distribution System**; and

(ii) in the case of an **Embedded Small Power Station The Company** having received satisfactory confirmation from the owner/operator of the **Distribution System** as to the running arrangements within the **Distribution System**;

(iii) in the case of an **Embedded Small**, **Medium** and **Large Power Station**, in relation to a **Small Power Station Trading Party** and in the case of a **Distribution Interconnector**, of the acceptance by the owner/operator of the **Distribution System** of any necessary **Modification Offer** relevant to the **Embedded Power Station or Distribution Interconnector** (as the case may be);

(b) If the conditions precedent of ~~3.2.2~~**3.2.6**(a)(i) to (iii) have not been fulfilled in the case of ~~3.2.2~~**3.2.6**(a)(i) and ~~3.2.2~~**3.2.6**(a)(ii) within 6 months of the date of the relevant **Bilateral Embedded Generation Agreement** or in the case of ~~3.2.2~~**3.2.6**(a)(iii) within 3 months of the date of receipt by the owner/operator of the **Distribution System** of the **Modification Offer The Company** or the relevant **User** may rescind the relevant **Bilateral Embedded Generation Agreement** and any associated **Construction Agreement** by giving to the other notice to that effect in which event all rights and liabilities of the parties thereunder and under the **CUSC** in relation to relevant **Embedded Power Stations** or relevant **Distribution Interconnectors** shall cease.

~~1.2.3 Transmission Entry Capacity~~

~~(a) Other than as provided in Paragraph 3.2.3(b), each **User**, as between **The Company** and that **User**, shall not operate~~

its **User's Equipment** such that its export of power onto the **GB Transmission System** exceeds the **Transmission Entry Capacity** and (if any) **STTEC** and\or **LDTEC** and\or any **Temporary Received TEC** less any **Temporary Donated TEC** for the relevant **Period** set out in Appendix C to the relevant **Bilateral Embedded Generation Agreement** save as expressly permitted and instructed pursuant to an **Emergency Instruction** under the **Grid Code** or save as expressly permitted and instructed pursuant to the **Fuel Security Code** or as may be necessary or expedient in accordance with **Good Industry Practice**.

(b) Each **User** in respect of an **Embedded Small Power Station** and a **Distribution Interconnector** and as a **Trading Party** responsible for **Embedded Small Power Stations**, as between **The Company** and that **User**, shall not operate its **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) such that its export of power onto the **GB** Transmission System exceeds the **Transmission Entry Capacity** and (if any) **STTEC** and\or **LDTEC** and\or any **Temporary Received TEC** less any **Temporary Donated TEC** for the relevant **Period** set out in Appendix C to the relevant **Bilateral Embedded Generation Agreement** save as expressly permitted and instructed pursuant to the **Fuel Security Code** or as may be necessary or expedient in accordance with **Good Industry Practice**.

3.2.4 Subject to the other provisions of the **CUSC** and the **Grid Code** and any relevant **Bilateral Agreement**, **The Company** shall, as between **The Company** and that **User**, accept into the **GB Transmission System** power generated by each **User** up to the **Transmission Entry Capacity** and (if any) **STTEC** and\or any **Temporary Received TEC** less any **Temporary Donated TEC** for the relevant **Period** set out in Appendix C of the relevant **Bilateral Connection Agreement** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints which could not be avoided by the exercise of **Good Industry Practice** by **The Company**.

3.2.7 Outages

Subject to the provisions of the **Grid Code**, **The Company** and each **User** (with **Plant** and/or **Apparatus**) shall, as between **The Company** and that **User**, be entitled to plan and execute outages of parts of in the case of **The Company**, the **GB Transmission System** or **Transmission Plant** or **Transmission Apparatus** and in the case of a **User,** its

System or **Plant** or **Apparatus,** at any time and from time to time.

~~3.2.5~~**3.2.8** Commissioning

The Company agrees to assist the **User** (if requested by the **User**), with the commissioning and on-load testing of the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) and the **User** shall pay reasonable **The Company** Charges in connection therewith. The **User** must ensure the commissioning programme for the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at the site of connection agreed between the **User** and the owner/operator of the **Distribution System** contains adequate provisions in respect of the timing of commissioning to ensure that the **User** can be in receipt of an **Operational Notification** before or during (as appropriate) the said commissioning programme.

~~3.2.6~~**3.2.9** Operational Notification

Upon compliance by the **User** with the provisions of Paragraph ~~3.2.2~~**3.2.6**(a) after the commissioning programme in Paragraph ~~3.2.6~~**3.2.8** and subject, if **The Company** so requires, to **Transmission Reinforcement Works** being carried out and/or notification by the **User** that the site of connection of the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) to the **Distribution System** is operational (any or all as appropriate) **The Company** shall forthwith notify ("**Operational Notification**") the **User** in writing that it has the right to use the **GB Transmission System**. It is an express condition of the **CUSC** that in no circumstances will the **User** use or operate the **User's Equipment** or **Equipment** for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) without receiving this **Operational Notification**.

3.3 ~~1.3~~ **OTHER SITE SPECIFIC TECHNICAL CONDITIONS FOR EMBEDDED POWER STATIONS AND DISTRIBUTION INTERCONNECTORS**

3.3.1 ~~**1.3.1**~~

(a) **The Company** and each **User** shall, as between **The Company** and that **User**, operate respectively the **GB**

Transmission System and the **User System** with the special automatic facilities and schemes set out in Appendix F3 to the relevant **Bilateral Embedded Generation Agreement**.

(b) Each **User** shall ensure the **User's Equipment** complies with the site specific technical conditions set out in Appendix F4 to the relevant **Bilateral Embedded Generation Agreement.**

(c) Each **User** shall use all reasonable endeavours to ensure during the period of the relevant **Bilateral Embedded Generation Agreement** that the **User's Equipment** shall continue to comply with the site specific technical conditions set out in Appendix F5 to the relevant **Bilateral Embedded Generation Agreement**.

3.3.2 ~~1.3.2~~ If a **User** or **The Company** wishes to modify, alter or otherwise change the site specific technical conditions or the manner of their operation under Appendices F1, F3, F4 or F5 to the relevant **Bilateral Embedded Generation Agreement** this shall be deemed to be a **Modification** for the purposes of the **CUSC**.

3.3.3 ~~1.3.3~~ Where in the case of a site **Commissioned** in England and Wales prior to the **Transfer Date**, on or immediately prior to the **Transfer Date** a **User's Equipment** subject to a **Bilateral Embedded Generation Agreement** has any of the following technical attributes or facilities:

(a) control arrangements

(b) voltage and current signals for system monitoring

(c) control telephony

(d) operational metering

the **User** shall, as between **The Company** and that **User**, use all reasonable endeavours to ensure that during the period of such **Bilateral Agreement** the **User's Equipment** which is subject to that **Bilateral Agreement** retains such technical attributes or facilities provided always that if the **User** wishes to modify, alter or otherwise change the same or their operation it may do so by following the procedures relating to a **Modification** in accordance with the **CUSC**.

PART IB - GENERAL - SUPPLY

This Part IB deals with rights and obligations relating to **Suppliers** generally and, in relation to certain provisions, to **Suppliers** supplying **Non-Embedded Customers**. References to "**User**" in this Part IB should be construed accordingly.

3.4 ~~1.4~~ RIGHTS TO USE THE GB TRANSMISSION SYSTEM

3.4.1 ~~1.4.1~~ Subject to the other provisions of the **CUSC** and the **Grid Code**, each **User**, as between **The Company** and that **User**, may take supplies of power from the **GB Transmission System**.

3.4.2 ~~1.4.2~~ Subject to the provisions of the **CUSC** and the **Grid Code**, **The Company** shall, as between **The Company** and that **User,** transport a supply of power through the **GB Transmission System** to the level forecast by the **User** from time to time pursuant to the **Data Requirements** set out in Part IIB of this Section 3 submitted by that **User** together with such margin as **The Company** shall in its reasonable opinion consider necessary having due regard to **The Company 's** duties under the **Transmission Licence** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints or by insufficiency of generation which, in either case, could not have been avoided by the exercise of **Good Industry Practice** by **The Company**.

3.4.3 ~~1.4.3~~ Subject to the provisions of the **Grid Code**, **The Company** shall be entitled to plan and execute outages of parts of the **GB Transmission System** or **Transmission Plant** or **Transmission Apparatus** at any time and from time to time.

3.5 ~~1.5~~ SUPPLIER CUSTOMER DETAILS

3.5.1 ~~1.5.1~~ Each **User** shall, as between **The Company** and that **User**, give written notice to **The Company** of the following details of all exit points from time to time in existence between any **Distribution System** and the **User's** customer:-

(a) the electrical location and nomenclature of the **Energy Metering Equipment** installed in relation to each such customer;

(b) the identity of the operator of the **Distribution System** to which such customers are connected;

(c) the **Grid Supply Point** and **Transmission Network Use of System Demand Zone** meeting the **Demand** (**Active Power**) of each customer;

(d) the loss factors applying to the **Energy Metering Equipment** installed in relation to each such customer,

save where the **User's** customer is connected to a **Distribution System** owned by a **Public Distribution System Operator** in which case the **Public Distribution System Operator's** published statement of loss factors shall apply.

Such written notice shall be given to **The Company** no later than 28 days prior to the commencement or cessation of use of any such exit point. If the **Grid Supply Point** referred to in (c) changes the **User** shall notify **The Company** forthwith after being notified of such change by the **Public Distribution System Operator** in question. If **The Company's** basis of charging changes pursuant to the **Charging Statements** or, subject thereto, Parts II and III below at any time, **The Company** shall be entitled to ask for other information it reasonably requires for charging purposes under this Paragraph 3.5.

3.5.2 ~~1.5.2~~ **CUSC Parties** agree that, insofar as **The Company** has alternative reasonable means of obtaining this information then Paragraph 3.5.1 shall not apply.

3.6 ~~1.6~~ SUPPLIERS OF NON-EMBEDDED CUSTOMERS

3.6.1 ~~**1.6.1**~~ This Paragraph 3.6 relates specifically to the position of a **Supplier** in respect of its supply of electricity to a **Non-Embedded Customer**. Insofar as the provisions of this Paragraph 3.6 conflict with any other provision of this Section 3 dealing with an equivalent issue, the provisions of this Paragraph 3.6 shall prevail in relation to such a category.

3.6.2 ~~1.6.2~~ In the case of such a **User**, subject to the provisions of the **CUSC** and the **Grid Code**, **The Company** shall transport a supply of power through the **GB Transmission System** to the **Connection Site** of the **Non-Embedded Customer** to the level forecast by the **User** from time to time pursuant to the **Data Requirements** set out in Part IIB of this Section 3 submitted by that **User** together with such margin as **The Company** shall in its reasonable opinion consider necessary having due regard to **The Company's** duties under the **Transmission Licence** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints or by insufficiency of generation which, in either case, could not have been avoided by the exercise of **Good Industry Practice** by **The Company**.

3.6.3 ~~1.6.3~~ The right in 3.6.2 above is subject to:

(a) the **User** being authorised by a current **Supply Licence** to supply electricity to the premises to be supplied with electricity through the **Connection Site**; and

(b) there being a subsisting **Bilateral Connection Agreement** with the **Non-Embedded Customer** for the **Connection Site**.

3.6.4 ~~1.6.4~~ Where **The Company** agrees, the **Supplier** of a **Non-Embedded Customer** may be liable for payment of **Connection Charges** in relation to the **Metering Equipment** of a **Non-Embedded Customer**. The existence of such an arrangement shall be reflected in the relevant **Bilateral Connection Agreement** with the **Non-Embedded Customer** and the **Use of System Supply Confirmation Notice**. Where such an arrangement exists, the provisions of Section 2 Part II in relation to such charges shall be deemed incorporated within this Paragraph 3.6.4 and the **Supplier** shall comply with those provisions in relation to such charges as if references to the **User** were references to the **Supplier**.

3.6.5 ~~1.6.5~~ The **User** acknowledges that breach of the provisions of the **CUSC** by the **Non-Embedded Customer** may give rise to **Deenergisation** of the **Non-Embedded Customer's Connection Site** pursuant to Section 5.

3.6.6 ~~1.6.6~~ The **User** acknowledges that site specific technical conditions as provided for in Paragraphs 2.7 to 2.9 of the **CUSC** may apply between **The Company** and a **Non-Embedded Customer** at a **Connection Site**.

3.6.7 ~~1.6.7~~ **The Company** shall be entitled to **Deenergise** the **Non-Embedded Customer's Equipment** at any **Connection Site** when instructed to do so by the **Non-Embedded Customer** in accordance with the terms of its **Bilateral Connection Agreement** or the **CUSC**.

3.6.8 ~~1.6.8~~ Where the **Supplier** supplying the **Connection Site** has informed **The Company** that it has received an order or direction from the Secretary of State for Energy under the Energy Act 1976 or the **Act**, requiring it to cease supplying the **Non-Embedded Customer** with electricity and instructs **The Company** to **Deenergise** the **Non-Embedded Customer's User's Equipment** at the **Connection Site**, **The Company** shall as soon as reasonably practicable **Deenergise** the **Non-Embedded Customer's User's Equipment** at the **Connection Site** (unless **The Company** considers that it is not reasonably practicable, whether on technical grounds or otherwise, to effect such **Deenergisation**) and if it does **Deenergise**, shall promptly notify the **User** of the date and time at which such **Deenergisation** was effected. The **User** shall reimburse **The Company** any expense incurred in relation to such **Deenergisation**, if any, and shall indemnify **The Company** against any costs, liability, loss or damage suffered by **The Company** as a result of such **Deenergisation**.

3.7 ~~1.7~~ USE OF SYSTEM APPLICATION

3.7.1 ~~1.7.1~~ If a **User** wishes to use the **GB Transmission System** in a category of use which does not include connection to the **GB Transmission System**, it shall complete and submit to **The Company** a **Use** of **System Application** and comply with the terms thereof.

3.7.2 ~~1.7.2~~ Without prejudice to Standard Condition C8 of the **Transmission Licence The Company** shall make a **Use of System Offer** to that **User** as soon as practicable after receipt of the **Use of System Application** and (save where the **Authority** consents to a longer period) in any event not more than 28 days after receipt by **The Company** of the **Use of System Application**.

3.7.3 ~~1.7.3~~ The **Use of System Offer** shall in the case of an application relating to an **Embedded Power Station** or to a **Small Power Station Trading Party** or to a **Distribution Interconnector** be in the form of a **Bilateral Embedded Generation Agreement** together with any **Construction Agreement** relating thereto. In the case of a **Supplier**, it shall be in the form of a **Use of System Supply Offer Notice**. The provisions of Standard Condition C8 shall apply to an application by a **Supplier** as if the **Use of System Supply Offer and Confirmation Notice** was an agreement for the purposes of that condition.

3.7.4 ~~1.7.4~~ The **Use of System Offer** shall remain open for acceptance for 3 months from its receipt by that **User** unless either that **User** or **The Company** makes an application to the **Authority** under Standard Condition C9 of the **Transmission Licence**, in which event the **Use of System Offer** shall remain open for acceptance until the date 14 days after any determination by the **Authority** pursuant to such application.

3.7.5 ~~1.7.5~~ Upon acceptance of the **Use of System Offer** (as offered by **The Company** or determined by the **Authority**) by the **User** and execution by **The Company** of the **Bilateral Embedded Generation Agreement** or the issuing by **The Company** of a **Use of System Supply Confirmation Notice**, as the case may be, the **User** shall have the right to use the **GB Transmission System**. Such right shall continue until the **Bilateral Embedded Generation Agreement** is terminated or a **Use of System Termination Notice** is submitted pursuant to Paragraph 3.8.

3.7.6 ~~1.7.6~~ Such rights shall be conditional upon the **Applicant**, if it is not already a party to the **CUSC Framework Agreement**, becoming a party to the **CUSC Framework Agreement**.

3.7.7 In the event that the **User** requests a **Use of System Offer** in the form of a **Bilateral Embedded Generation Agreement** on the basis of a **Design Variation** then:

(i) **The Company** shall only be obliged to provide such an offer in so far as such an offer satisfies the conditions detailed in Chapter 3 of the **GB SQSS**; and

(ii) **The Company** shall be obliged, at the request of the **User** as part of the **Use of System Offer**, to provide such information that the **User** may reasonably require in order to assess the probability of **Notification of Restrictions on Availability** being issued. For the avoidance of doubt, the information that is provided by **The Company** under this clause shall be a best estimate only and is not legally binding.

3.8 ~~*1.8*~~ TERMINATION PROVISIONS

3.8.1 ~~1.8.1~~ Provisions relating to **Disconnection** relating to **Users** who have **Bilateral Embedded Generation Agreements** are dealt with in Section 5.

3.8.2 ~~1.8.2~~ In addition to the provisions in Section 5, this paragraph deals with termination of the right to use the system in respect of a **Supplier** who in that category of connection and/or use has no physical presence on the **System** and with a specific additional provision for the **Supplier** of a **Non-Embedded Customer**.

3.8.3 (a) A **Supplier** may terminate its use of the **GB Transmission System** by giving **The Company** a **Use of System Termination Notice** not less than 28 days prior to such termination of use.

(b) If a **Use of System Termination Notice** is given under this Section 3, the right to use the **GB Transmission System** shall cease upon the termination date in the **Use of System Termination Notice**.

(c) Prior to cessation of use by a **User** under this Paragraph, the **User** shall pay **The Company** all **Use of System Charges** payable by it under Section 3 in respect of the **Financial Year** in which the cessation takes place.

3.8.4 In addition, in the case of a **User** in its category of connection and/or use as a **Supplier** of a **Non-Embedded Customer** the use of the **GB Transmission System** in respect of the **Connection Site** shall cease upon either **Disconnection** of the **User's Equipment** of the **Non-Embedded Customer** or termination of the **Bilateral Connection Agreement** in respect of that **Connection Site**.

PART II - USE OF SYSTEM CHARGES

PART IIA - GENERAL

3.9 ~~1.9~~ USE OF SYSTEM CHARGES

General Liability to pay Use of System Charges

3.9.1 ~~***1.9.1***~~ Subject to the provisions of the **CUSC**, and any relevant **Bilateral Agreement,** together with the relevant **Charging Statements**, each **User** shall with effect from the relevant date set out in the relevant **Bilateral Agreement** (or in the **Use of System Supply Confirmation Notice**) be liable to pay to **The Company** the **Use of System Charges** in accordance with the **CUSC** calculated in accordance with the **Statement of Use of System Charges** and the **Statement of the Use of System Charging Methodology** and Standard Condition C13 of the **Transmission Licence**. **The Company** shall apply and calculate the **Use of System Charges** in accordance with the **Statement of Use of System Charges** and the **Statement of the Use of System Charging Methodology** and Standard Condition C13 of the **Transmission Licence**.

Liability for payment of Transmission Network Use of System Charges

3.9.2 ~~1.9.2~~ Each **User** shall, as between **The Company** and that **User**, in accordance with this Part II and Paragraph 6.6, be liable to pay to **The Company** (or **The Company** shall be so liable to pay to the **User**) the **Transmission Network Use of System Charges** ~~**Charges** and (if appropriate) the **STTEC** and **LDTEC Charge Charges**~~ respect of its use of the **GB Transmission System** applied and calculated in accordance with the **Statement of Use of System Charges** and **Statement of the Use of System Charging Methodology** and Standard Condition C13 of the **Transmission Licence**.

Liability for Short Term Access Products Charges

3.9.3 **Each User shall, as between The Company and that User, in accordance with this Part II and Paragraph 6.6 and Appendix 3 to this Section 3, be liable where appropriate to pay to The Company the Short Term Access Products Charges in respect of its use of the GB Transmission System applied and calculated in accordance with the Statement of Use of System Charges, Statement of the Use of System Charging Methodology [and Appendix 3] and Standard Condition C13 of the Transmission Licence.**

3.9.4 **Left Blank.**

Liability for Balancing Services Use of System Charges

3.9.5 ~~1.9.3~~ Except in respect of **Distribution Interconnector Owners** each **User** shall, as between **The Company** and that **User**, in accordance with this Part II and Paragraph 6.6, be liable to pay to **The Company**

in respect of each **Settlement Day** the **Balancing Services Use of System Charges** calculated in accordance with the **Statement of the Use of System Charging Methodology**.

Provision of Security

3.9.6 ~~1.9.4~~ Each **User** shall, as between **The Company** and that **User**, provide **The Company** with **Security Cover** in respect of **Transmission Network Use of System Demand Reconciliation Charges**, **Transmission Services Use of System Charges** ~~and~~ **, Balancing Services Use of System Charges, Short Term Access Products Charges** in accordance with Part III below **and Appendix 3 to this Section 3 of the CUSC**.

3.9.7 ~~1.9.5~~ The charges payable in relation to use of the **GB Transmission System** may also include **One-off Charges** where those are to be payable by the relevant **User** as provided in the relevant **Bilateral Embedded Generation Agreement**. In that case, the relevant provisions of Section 2 will apply to that **User** in relation to the **One-off Charges**.

PART IIB – TRANSMISSION NETWORK USE OF SYSTEM CHARGES

3.10~~1.10~~ DATA REQUIREMENTS

General Submission of Data

3.10.1 ~~1.10.1~~ On or before the end of the second week of December in each **Financial Year**, each **User** shall supply **The Company** with such data as described under Section 3.10 as **The Company** may from time to time reasonably request to enable **The Company** to calculate the tariffs for the **Transmission Network Use of System Charges** pursuant to the **Charging Statements** for the **Financial Year** to which the data relates.

3.10.2 ~~1.10.2~~ On or before the 10th day of March in each **Financial Year**, each **User** shall supply **The Company** on **The Company's** reasonable request with its **Demand Forecast** for the following **Financial Year** pursuant to the **Charging Statements** to enable **The Company** to use such **Demand Forecast** as the basis for calculation of the **Transmission Network Use of System Charges** for the **Financial Year** to which the **Demand Forecast** relates.

3.10.3 ~~1.10.3~~ In the event that a **User** fails to provide a **Demand Forecast** in accordance with Paragraph 3.10.2 above the **User** shall be deemed to have submitted as its **Demand Forecast** the last **Demand Forecast** supplied under Paragraph 3.11.1.

3.10.4 ~~1.10.4~~ Where a **Use of System Supply Confirmation Notice** is completed during a **Financial Year**, the **User** shall supply **The Company**, with its **Demand Forecast** for that **Financial Year** on or before the 10th day of the month following completion of the **Use of System Supply Confirmation Notice**.

3.10.5 ~~1.10.5 On or before the end of the second week in December in each **Financial Year**, each **User** that is liable for generation **Use of System Charges** in accordance with **Paragraph** 3.9 **of the CUSC** shall supply **The Company** with a forecast maximum **TEC** for the following year, to inform **The Company** of the forecast generation to be used for the purposes of setting TNUos Tariffs~~Not Used.

Provision of LCN Forecast

3.10.6 On or before the end of the second week in December in each Financial Year, each User that is liable for generation Use of System Charges in accordance with Paragraph 3.9 of the CUSC shall supply The Company with a forecast maximum LCN for the following year, to inform The Company of the forecast generation to be used for the purposes of setting TNUos Tariffs.

3.11 ~~1.11~~ **VARIATION OF FORECASTS DURING THE FINANCIAL YEAR**

3.11.1 ~~1.11.1~~ Each **User** shall notify **The Company** of any revision to its **Demand Forecast** at least quarterly or at such intervals as may be agreed between **The Company** and the **User** from time to time.

3.11.2 ~~1.11.2~~ Subject to Paragraph 3.12, **The Company** shall revise the **Transmission Network Use of System Charges** payable by a **User**

to take account of any revised **Demand Forecast** and shall commence charging the revised **Transmission Network Use of System Charges** from the first day of the month following the month in which such revised **Demand Forecast** was received provided always that such **Demand Forecast** is provided before the 10th day of such month.

3.12 VALIDATION OF DEMAND FORECASTS

3.12.1 The **Demand Forecast** shall represent a **User's** reasonable estimate of its **Demand**.

3.12.2 **The Company** shall notify the **User** in the event that the **Transmission Network Use of System Charges** due from the **User** to **The Company** or from **The Company** to the **User** (as the case may be) calculated by **The Company** using the **Demand Forecast** differ by more than 20% from that calculated by **The Company** using **The Company's** forecast **Demand** as provided for in the **Charging Statements**.

3.12.3 In the event that **The Company** does not receive a satisfactory explanation for the difference between the **Demand Forecast** and **The Company's** forecast **Demand** or a satisfactory revised **Demand Forecast** from the **User** within 5 **Business Days** of such notice then **The Company** shall be entitled to invoice a **User** for **Transmission Network Use of System Charges** calculated on the basis of **The Company** forecast **Demand**.

3.12.4 Any dispute regarding a **Demand Forecast** or the resulting **Transmission Network Use of System Charges** shall be a **Charging Dispute**.

3.13 RECONCILIATION STATEMENTS

Calculation of Initial Reconciliation

3.13.1 On or before 30 June in each **Financial Year**, **The Company** shall promptly calculate in accordance with the **Statement of the Use of System Charging Methodology** and the **Statement of Use of System Charges** the **Demand** related or generation related **Transmission Network Use of System Charges** (as the case may be) that would have been payable by the **User** during each month during the preceding **Financial Year** (**Actual Amount**). **The Company** shall then compare the **Actual Amount** with the amount of **Demand** related or generation related **Transmission Network Use of System Charges** (as the case may be) paid each month during the preceding **Financial Year** by the **User** (the "**Notional Amount**").

Generation Reconciliation

3.13.2 As soon as reasonably practicable and in any event by 30 April in each **Financial Year The Company** shall prepare a generation reconciliation statement (the "**Generation Reconciliation Statement**") in respect of generation related **Transmission Network Use of System Charges** and send it to the **User**. Such statement shall specify the **Actual Amount** and the **Notional Amount** of generation related **Transmission Network Use of System Charges** for each month during the relevant **Financial Year** and, in reasonable detail, the information from which such amounts were derived and the manner in which they were calculated.

3.13.3 Together with the **Generation Reconciliation Statement**, **The Company** shall issue a credit note in relation to any sums shown by the **Generation Reconciliation Statement** to be due to the **User** or an invoice in respect of sums due to **The Company** and in each case interest thereon calculated pursuant to Paragraph 3.13.6 below.

Initial Demand Reconciliation Statement

3.13.4 As soon as reasonably practicable and in any event by 30 June in each **Financial Year The Company** shall then prepare an initial **Demand** reconciliation statement (the "**Initial Demand Reconciliation Statement")** in respect of **Demand** related **Transmission Network Use of System Charges** and send it to the **User.** Such statement shall specify the **Actual Amount** and the **Notional Amount** of **Demand** related **Transmission Network Use of System Charges** for each month during the relevant **Financial Year** and, in reasonable detail, the information from which such amounts were derived and the manner in which they were calculated.

3.13.5 Together with the **Initial Demand Reconciliation Statement The Company** shall issue a credit note in relation to any sum shown by the **Initial Demand Reconciliation Statement** to be due to the **User** or an invoice in respect of sums due to **The Company** and in each case interest thereon calculated pursuant to Paragraph 3.13.6.

3.13.6 General Provisions

(a) Invoices issued under paragraphs 3.13.3 and 3.13.5 above and 3.13.8 (b) below shall be payable within 30 days of the date of the invoice.

(b) Interest on all amounts due under this Paragraph 3.13 shall be payable by the paying **CUSC Party** to the other on such amounts from the date of payment applicable to

the month concerned until the date of actual payment of such amounts and such interest shall be calculated on a daily basis at a rate equal to the **Base Rate** during such period.

3.13.7 Final Reconciliation Statement

(a) **The Company** shall as soon as reasonably practicable following receipt by it of the **Final Reconciliation Settlement Run** or **Fina**l **Reconciliation Volume Allocation Run** as appropriate in respect of the last **Settlement Day** in each **Financial Year** issue a further **Demand** reconciliation statement (the **"Final Demand Reconciliation Statement"**) in respect of **Demand** related **Transmission Network Use of System Charges** payable in respect of each month of that **Financial Year** showing:-

(i) any change in the **Demand** related **Transmission Network Use of System Charges** from those specified in the **Initial Demand Reconciliation Statement** provided in accordance with Paragraph 3.13.4;

(ii) whether the change represents a reconciliation payment owing by **The Company** to a **User** or by a **User** to **The Company**;

(iii) the amount of interest determined in accordance with Paragraph 3.13.6 above; and

(iv) the information from which the amounts in (i) above are derived and the manner of their calculation.

(b) Together with the **Final Demand Reconciliation Statement The Company** shall issue a credit note in relation to any sum shown in the **Final Demand Reconciliation Statement** to be due to the **User** or an invoice in respect of sums due to **The Company** and in each case interest thereon calculated pursuant to Paragraph 3.13.6.

(c) Payment of any invoice issued pursuant to Paragraph 3.13.7(b) above or the application of any credit note issued pursuant to that paragraph against any liability of the **User** to **The Company** for **Demand** related **Transmission Network Use of System Charges** will be in full and final settlement of all **Demand** related **Transmission Network Use of System Charges** for the **Financial Year** to which the invoice or credit note relates provided that nothing in this Paragraph 3.13.8(c) shall

affect the rights of the parties under the provisions of Paragraph 7.3.5.

3.13.8 The right to submit **Generation Reconciliation Statements**, **Initial Demand Reconciliation Statements** and **Final Demand Reconciliation Statements** and the consequential invoices and/or credit notes shall survive the termination of the **User's** rights under the **CUSC** and the parties agree that the provisions contained in Paragraphs 3.13 and 3.14 shall continue to bind them after such termination (the version in existence at the date of termination being the applicable version in the case of any amendments).

3.14 REVISION OF CHARGES

3.14.1 Pursuant to the **Transmission Licence** and/or the **CUSC** and/or the **Charging Statements** and/or the **Bilateral Agreements The Company** may revise its **Transmission Network Use of System Charges**, **Short Term Access Products Charges** or the basis of their calculation. Where **The Company** proposes a change to the **Transmission Network Use of System Charges, Short Term Access Products Charges** then it shall notify the **User** as soon as practicable after the proposal is made to the **Authority** pursuant to the **Transmission Licence**.

3.14.2 The **User** acknowledges that due to the timescales associated with the replacement of the **Pooling and Settlement Agreement** with the **Balancing and Settlement Code**, **The Company** was prevented from providing the **User** with notice pursuant to Clause 2.1 of Part 1 of Appendix E (as in force on the day prior to the **NETA Go-live Date**) of the basis of calculation of **Transmission Network Use of System Charges** from the **NETA Go-live Date** until the end of the **Financial Year** in which the **NETA Go-live Date** occurred. However, the **User** further acknowledges that **The Company** consulted with the **User** prior to the **NETA Go-live Date** on **Transmission Network Use of System Charges** to apply from the **NETA Go-live Date** until the end of the **Financial Year** in which the **NETA Go-live Date** occurred. The **User** hereby agrees to pay **Transmission Network Use of System Charges** in respect of the **Financial Year** in which the **NETA Go-live Date** occurred in accordance with the principles notified by **The Company** prior to the **NETA Go-live Date**.

3.14.3 Subject to paragraph 3.14.4 below, **The Company** shall give the **User** not less than two months prior written notice of any revised **Transmission Network Use of System Charges**, **Short Term Access Products Charges** which notice shall specify the date upon which such revisions become effective

(which may be at any time) and will make reference to the new tariffs set out in the relevant **Charging Statements**. The **User** shall pay any such revised charges from the effective date.

3.14.4 Where in accordance with the **Transmission Licence**, the **Authority** determines a shorter period than 2 months for the implementation of revised charges, the notice period will be determined by the **Authority**. The notice will specify when the new charges are effective and the **User** shall pay any such revised charges from the effective date.

PART IIC - BALANCING SERVICES USE OF SYSTEM CHARGES

3.15 INTRODUCTION

3.15.1 Under the terms of the **CUSC** each **User** except in the case of **Distribution Interconnector Owners** is liable to pay **Balancing Services Use of System Charges**. The basis upon which **Balancing Services Use of System Charges** are levied and the calculation methodology and rules which will be used to quantify those charges are set out in the **Statement of the Use of System Charging Methodology**.

3.15.2 Balancing Services Use of System Charges

Notwithstanding the provisions of Paragraphs 6.6.1 and 6.6.2 the following provisions shall apply to the payment of the **Balancing Services Use of System Charges**.

(a) **The Company** shall not later than 17.00 hours on the relevant **Notification Date** (and if this is not practicable as soon as possible thereafter as **The Company**, acting reasonably, considers is practicable) despatch an advice notice to the **User** in respect of the **Settlement Day** in relation to which the **Balancing Services Use of System Charges** are due on the relevant **Payment Date**.

(b) The information on the advice notice in respect of each **Settlement Day** shall include the name of the **User** and the total amount payable to **The Company** in respect of **Balancing Services Use of System Charges** and in all cases together with any **Value Added Tax** thereon during each **Settlement Day**.

(c) **The Company** shall, within a reasonable time thereafter provide a valid **Value Added Tax** invoice in respect of **Balancing Services Use of System Charges** identified on the advice note.

(d) The **User** shall pay the **Balancing Services Use of System Charges** specified in the advice notice together with the **Value Added Tax** thereon to **The Company** no later than 12.30 hours on the **Payment Date** specified on the advice note in respect of such **Settlement Date** as if they were payments made in the manner specified in Paragraph 6.6.3.

3.16 RECONCILIATION

3.16.1 As soon as reasonably practicable after receipt by **The Company** of the **Final Reconciliation Volume Allocation Run** in respect of a **Settlement Day The Company** shall prepare and submit to each **User** a statement (which may form part of an invoice or other document) calculated in accordance with the data specified in the **Statement of the Use of System Charging Methodology** in respect of that **Settlement Day** (**"Balancing Services Use of System Reconciliation Statement"**)**,** showing the new value (if any) of data (as specified in the **Statement of the Use of System Charging Methodology** in force on that **Settlement Day)** attributable to the **User** in respect of such **Settlement Day** and the amount of **Balancing Services Use of System Charges** payable by the **User** on the basis of the new value (the "**Reconciled Charge**")**.**

3.16.2 In the event that:

(a) the **Reconciled Charge** exceeds the **Balancing Services Use of System Charges** paid by the **User** in respect of that **Settlement Day** ("**Initial Charge**") **The Company** shall at its option either:

(i) send to the **User** as soon as reasonably practicable after issue of the **Balancing Services Use of System Reconciliation Statement** an invoice for the amount by which the **Reconciled Charge** exceeds the **Initial Charge** and interest thereon calculated in accordance with the provisions set out in Paragraph 3.16.3; or

(ii) include such amount in another invoice in respect of **Balancing Services Use of System Charges** to the **User**.

(b) the **Reconciled Charge** is less than the **Initial Charge The Company** shall at its option either:-

(i) send to the **User** as soon as reasonably practicable after issue of the **Balancing Services Use of**

System Reconciliation Statement a credit note for the amount by which the **Initial Charge** exceeds the **Reconciled Charge** and interest thereon calculated in accordance with the provisions set out in Paragraph 3.16.3; or

(ii) include such amount as a credit in an invoice in respect of **Balancing Services Use of System Charges** from **The Company** to the **User**.

3.16.3 Interest payable in respect of each reconciliation payment shall accrue from and including the relevant **Use of System Payment Date** up to but excluding the date upon which the amounts specified in the **Balancing Services Use of System Reconciliation Statement** are paid, and shall be at a rate equal to the **Base Rate** for the time being and from time to time. Interest shall accrue from day to day.

3.16.4 If **The Company** receives written notice from any **User** or from the relevant **BSC Agent** that an error has occurred in any data forming part of or used within the **Initial Volume Allocation Run** which affects the costs to **The Company** of offers and bids in the **Balancing Mechanism** accepted by **The Company** in respect of any **Settlement Day**, and that error has been ratified in accordance with the procedures for ratification set out in the **Balancing and Settlement Code** it shall use its reasonable endeavours to, as soon as reasonably practicable after receipt of such notice, issue a dispute reconciliation statement ("**Dispute Statement**") to the **User** in respect of that **Settlement Day**.

3.16.5 Any **Dispute Statement** issued pursuant to Paragraph 3.16.4 above shall show the amount of **Balancing Services Use of System Charges** payable by the **User** on the basis of the ratified data.

3.16.6

(a) In the event that the amount shown in any **Dispute Statement** exceeds the aggregate amount paid by the **User** in respect of the **Settlement Day** to which the **Dispute Statement** relates under any invoices issued pursuant to Paragraph 3.15.2 and Paragraph 3.16.2 above (after taking into account any credit notes issued) **The Company** shall submit to the **User** a further invoice for such excess and interest thereon calculated in accordance with Paragraph 3.16.3;

(b) In the event that the amount shown in any **Dispute Statement** is less than the aggregate amount paid by the

User in respect of the **Settlement Day** to which the **Dispute Statement** relates under any invoices issued pursuant to Paragraph 3.15.2 and Paragraph 3.16.2 above (after taking into account any credit notes issued) **The Company** shall submit to the **User** a credit note for the amount by which the amount paid exceeds the amount shown in the **Dispute Statement** together with interest thereon calculated in accordance with Paragraph 3.16.3.

3.16.7 If at any time prior to receipt by **The Company** of the **Final Reconciliation Volume Allocation Run** in respect of a **Settlement Day The Company** receives written notice from any **User** or the relevant **BSC Agent** of an error occurring in any data forming part of or used within the **Initial Volume Allocation Run** or the **Reconciliation Volume Allocation Run** which in either case affects the data (as specified in the **Statement of the Use of System Charging Methodology**) used in the calculation of **Balancing Services Use of System Charges** for that **Settlement Day**, which error:-

(a) is not taken into account in the **Final Reconciliation Volume Allocation Run**; and

(b) has been ratified in accordance with the procedures for ratification set out in the **Balancing and Settlement Code**,

then **The Company** shall use its reasonable endeavours to prepare the **Balancing Services Use of System Reconciliation Statement** on the basis of the ratified data.

3.17 The right to submit **Balancing Services Use of System Reconciliation Statements** and **Dispute Statements** and the consequential invoices and/or credit notes shall survive the termination of the **User's** rights under the **CUSC** and the parties agree that the provisions of this Part II shall remain in full force and effect and shall continue to bind them after such termination (the version in existence as at the date of termination being the applicable version, in the case of any amendments).

3.18 **The Company** and each **User** hereby agree and acknowledge that the provisions of Part IIC will apply to all **Balancing Services Use of System Charges** payable in respect of any **Settlement Day** on or after the **NETA Go-live Date**. The provisions of Paragraphs 1.1 to 1.6 inclusive of Part 2 of the form of Appendix E in force on the day prior to the **NETA Go-live Date** shall continue to apply *mutatis mutandis* to all **Transmission Services Use of System Charges** payable in respect of any **Settlement Day** up to the **NETA Go-live Date**.

3.19 RECONCILIATION PAYMENTS

Each **User**, or as the case may be, **The Company**, shall pay the amounts set out in any invoice or credit note issued pursuant to Paragraphs 3.15.2 or 3.15.6 respectively above, either in accordance with the applicable requirements for payment of other sums due under that invoice in the case of sums shown in an invoice also dealing with other payments, or in other cases within 5 **Business Days** of the date of the **Balancing Services Use of System Reconciliation Statement or Dispute Statement** as appropriate.

3.20 REVISION OF CHARGES

3.20.1 Subject to Paragraph 3.20.2 below, **The Company** shall give the **User** not less than 2 months prior written notice of any revision to the **Statement of the Use of System Charging Methodology** which will affect the application and calculation of the **Balancing Services Use of System Charges**, which notice shall specify the date upon which such revisions become effective (which may be at any time). The **User** shall pay any such revised charges with effect from the date specified in such notice.

3.20.2 Where in accordance with the **Transmission Licence**, the **Authority** determines a shorter period than two months for the implementation of a revision to the charges which will affect the application and calculation of the **Balancing Services Use of System Charge**, the notice period will be determined by the **Authority**. The notice will specify when the revision is effective and the **User** shall pay any such revised charges with effect from the date specified in such notice.

PART III - CREDIT REQUIREMENTS

3.21 ~~BSUOS~~ CHARGES ~~AND TNUOS DEMAND CHARGES:~~; PROVISION OF SECURITY COVER

3.21.1 Each **User** required to pay **Use of System Charges** shall provide **Security Cover** for **Balancing Services Use of System Charges** ~~and~~, **Transmission Network Use of System Demand Charges**, **Transmission Network Use of System Charges, Short Term Access Products Charges** from time to time in accordance with this Part III~~.~~ **and the provisions of**

Appendix 3 to this Section 3 of the CUSC and Schedule 4 of the CUSC.

3.21.2 Each such **User** shall not later than the date of its accession to the **CUSC Framework Agreement** deliver to **The Company** evidence reasonably satisfactory:-

(a) to establish the **User's Allowed Credit**; and

(b) if required, that it has provided and is not in default under the **Security Cover** referred to in Paragraph 3.21.3 below.

3.21.3 The User shall be required to provide **Security Cover** where its **Security Requirement** exceeds its **User's Allowed Credit**. If such **User** is required to provide **Security Cover** it shall, not later than the date of:-

(a) the date of its becoming a party to the **CUSC Framework Agreement**; or

(b) two **Business Days** after ~~NGC~~The Company notifies the **User** in writing that the **Security Cover** required exceeds the **Security Amount** provided; or

(c) where and to the extent that the amount of **Security Cover** required exceeds the **Security Amount** provided as a result of a **User's** revised forecast given in accordance with Paragraph 3.10 within one month of such revised forecast being provided to ~~NGC~~The Company:-

(i) deliver to **The Company** a **Qualifying Guarantee** in such amount as shall be notified by **The Company** to the **User** in accordance with Paragraph 3.22; and/or

(ii) deliver to **The Company** a **Letter of Credit** (available for an initial period of not less than 6 months) in such amount as shall be notified by **The Company** to the **User** in accordance with Paragraph 3.22; and/or

(iii) deliver to **The Company** cash for credit to the **Escrow Account** in such amount as shall be notified by **The Company** in accordance with Paragraph 3.22; and/or

(iv) deliver to **The Company** a **Bilateral Insurance Policy** in such an amount as shall be notified by

The Company to the **User** in accordance with Paragraph 3.22; and/or

(v) deliver to **The Company** an **Insurance Performance Bond** in such an amount as shall be notified by **The Company** to the **User** in accordance with Paragraph 3.22; and/or

(vi) delivery to **The Company** an **Independent Security Arrangement** in such an amount as shall be notified by **The Company** to the **User** in accordance with Paragraph 3.22.

3.21.4 The provisions of this Part III shall be in addition to any other requirements to provide security in respect of any other sums due under the terms of the **CUSC** or any **Bilateral Agreement** or **Construction Agreement.**

3.21.5 Maintenance of Security Cover

Where a **User** is required to provide **Security Cover** in accordance with the terms of this Paragraph 3.21 and the provisions of Appendix 3 to this Section 3 of the **CUSC** it shall at all times thereafter maintain a **Security Amount** equal to or more than the **Security Cover** applicable to it. Immediately upon any reduction occurring in the **Security Amount** provided by the **User** or any **Letter of Credit** or **Qualifying Guarantee** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** being for any reason drawn down or demanded respectively, the **User** will procure that new **Letters of Credit** or **Qualifying Guarantees** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** are issued or existing **Letters of Credit** or **Qualifying Guarantees** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** are reinstated (to the satisfaction of **The Company**) to their full value or cash is placed to the credit of the **Escrow Account** in an amount required to restore the **Security Amount** to an amount at least equal to the **Security Cover** applicable to the **User**, and in such proportions of **Letters of Credit**, **Qualifying Guarantees** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** and/or cash as the **User** may determine. Not later than 10 **Business Days** before any outstanding **Letter of Credit** and/or **Qualifying Guarantee** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** is due to expire, the **User** shall procure to the satisfaction of **The Company** that its required **Security Amount** will be available

for a further period of not less than 6 months which may be done in one of the following ways:-

(a) subject to the issuing bank continuing to have an **Approved Credit Rating** for an amount at least equal to the required **Security Amount** applicable to it (less its balance on the **Escrow Account**) provide **The Company** with confirmation from the issuing bank that the validity of the **Letter of Credit** has been extended for a period of not less than 6 months on the same terms and otherwise for such amount as is required by this Part III; or

(b) provide **The Company** with a new **Letter of Credit** issued by an issuing bank with an **Approved Credit Rating** for an amount at least equal to the required **Security Amount** applicable to it (less its balance on the **Escrow Account**) which **Letter of Credit** shall be available for a period of not less than 6 months; or

(c) subject to the entity issuing the **Qualifying Guarantee** continuing to have an **Approved Credit Rating** for an amount at least equal to the required **Security Amount** applicable to it (less its balance on the **Escrow Account**) provide **The Company** with confirmation from the issuing entity that the validity of the **Qualifying Guarantee** has been extended for a period of not less than 6 months on the same terms and otherwise for such amount as is required by this Part III; or

(d) provide **The Company** with a new **Qualifying Guarantee** for an amount at least equal to the required **Security Amount** applicable to it (less its balance on the **Escrow Account**) which **Qualifying Guarantee** shall be available for a period of not less than 6 months; or

(e) procure such transfer to **The Company** for credit to the **Escrow Account** of an amount as shall ensure that the credit balance applicable to the **User** and standing to the credit of the **Escrow Account** shall be at least equal to the required **Security Amount**; or

(f) subject to the entity issuing the **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** continuing to meet the **Requirements** provide **The Company** with confirmation from the issuing entity that the validity of the **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** has been extended for a period of not less than 6 months on the same terms

and otherwise for such amount as is required by this Part III; or

(g) provide **The Company** with a new **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** for an amount at least equal to the required **Security Amount** applicable to it (less its balance on the **Escrow Account**) which **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** shall be available for a period of not less than 6 months.

3.21.6 Failure to supply or maintain Security Cover

If the **User** fails at any time to provide or maintain **Security Cover** to the satisfaction of **The Company** in accordance with the provisions of this Part III, **The Company** may at any time while such default continues, and if at such time any **Letter of Credit** and/or **Qualifying Guarantee** and/or **Bilateral Insurance Policy** and/or **Insurance Performance Bond** and/or **Independent Security Arrangement** forming part of the **Security Amount** is due to expire within 9 **Business Days** immediately, and without notice to the **User**, demand payment of the entire amount of any outstanding **Letter of Credit** and/or **Qualifying Guarantee** and/or **Bilateral Insurance Policy** and/or **Insurance Performance Bond** and/or **Independent Security Arrangement** and shall credit the proceeds of the **Letter of Credit** and/or **Qualifying Guarantee** and/or **Bilateral Insurance Policy** and/or **Insurance Performance Bond** and/or **Independent Security Arrangement** to the **Escrow Account**.

3.21.7 Substitute Letter of Credit or Qualifying Guarantee

(a) If the bank issuing the **User's Letter of Credit** ceases to have the credit rating set out in the definition of **Letter of Credit** in this **CUSC** such **User** shall forthwith procure the issue of a substitute **Letter of Credit** by a bank that has such a credit rating or a **Qualifying Guarantee** or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** or transfer to **The Company** cash to be credited to the **Escrow Account**.

(b) If the entity providing the **User's Qualifying Guarantee** ceases to have an **Approved Credit Rating** for an amount at least equal to the required **Security Amount** (less the User's balance on the **Escrow Account**) the **User** shall forthwith procure a replacement **Qualifying Guarantee** from an entity with such a credit rating or a

Letter of Credit or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** or transfer to **The Company** cash to be credited to the **Escrow Account**.

(c) If the entity providing the **User's Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** ceases to meet the **Requirements** the **User** shall forthwith procure a replacement of the same or a **Bilateral Insurance Policy**, **Insurance Performance Bond**, **Independent Security Arrangement**, **Letter of Credit**, **Qualifying Guarantee** or transfer to **The Company** cash to be credited to the **Escrow Account**.

3.22 CREDIT MONITORING

3.22.1 Determination of Security Cover

The amount of **Security Cover** which the **User** shall be required to maintain shall be determined from time to time by **The Company** as the **User's Security Requirement** less the **User's Allowed Credit**.

3.22.2 Determination of Security Requirement

The **Security Requirement** for each **User** shall be determined as:-

(a) the **Balancing Services Use of System Charges** provided for in the **CUSC**, where the **User** is a **Supplier**, over a 32 day period or such period as **The Company** acting reasonably shall specify to the **User** in writing from time to time taking into account the requirements for **Security Cover** contained in the **Balancing and Settlement Code** and where **The Company** proposes to change such period **The Company** shall consult with **Users**; and

(b) the **Balancing Services Use of System Charges** provided for in the **CUSC**, where the **User** is a **Generator**, over a 29 day period or such period as **The Company** acting reasonably shall specify to the **User** in writing from time to time taking into account the requirements for **Security Cover** contained in the **Balancing and Settlement Code** and where **The Company** proposes to change such period **The Company** shall consult with **Users**; and

(c) in relation to **Transmission Network Use of System Demand Charges** calculated in the following manner for each **Security Period**:-

(aa) in the **Financial Year** in which such charges first become due the greater of zero and the **User's Base Value at Risk**; and

(bb) in the case of subsequent **Financial Years** the greater of zero and the sum of (i) the **User's Base Value at Risk** and (ii) the **User's Forecasting Performance Related VAR~~.~~; and**

(d) **leave blank**

(e) leave blank

(f) leave blank

(g) leave blank

(h) in relation to the **Transmission Network Use of System Charges** for each **Financial Year,** commencing on and including the start of the **Financial Year** in which such charges first become due, the local and wider components of the **Transmission Network Use of System Charges** for that **Financial Year; and**

(~~h~~i) interest on the amounts referred to in (a), (b)**, (c), (d), (e), (f)** (g) and (~~c~~**h**) above calculated in accordance with the provisions of this **CUSC**.

3.22.3 Calculation of **HH Base Value at Risk**

For each **Security Period,** the sum equal to the **HH Base Percentage** of the **User's Indicative Annual HH TNUoS Charge** calculated on the basis of the latest **Demand Forecast** received by **The Company**.

3.22.4 Calculation of **NHH Base Value at Risk**

For each **Security Period,** the sum equal to the **NHH Base Percentage** of the **User's Indicative Annual NHH TNUoS Charge** calculated on the basis of the latest **Demand Forecast** received by **The Company**.

3.22.5 Notification of **Deemed HH Forecasting Performance**

Following the issue of the **Initial Demand Reconciliation Statement** in respect of the previous **Financial Year, The**

Company shall notify the **User,** of the **Deemed HH Forecasting Performance** to be used in the calculation of the User's **HH Performance Related Var**. Such notice shall be given at least two months prior to the first of the **Security Periods** to which it relates.

3.22.6 Notification of **Deemed NHH Forecasting Performance**

Following the issue of the **Initial Demand Reconciliation Statement** in respect of the previous **Financial Year, The Company** shall notify the **User,** of the **Deemed NHH Forecasting Performance** to be used in the calculation of the **User's NHH Performance Related Var**. Such notice shall be given at least two months prior to the first of the **Security Periods** to which it relates.

3.22.7 Revision of **Deemed HH Forecasting Performance**

If the **User** has experienced a significant increase in the amount of **Demand** taken by its **Customers** during the last five months of the previous **Financial Year** and believes that this has had a significant effect on their **Deemed HH Forecasting Performance**, then no later than one month from the date of the notification given to the **User** under paragraph 3.22.5, the **User** may request that **The Company** revises the **Deemed HH Forecasting Performance**. Upon raising such a request, the **User** must provide information to **The Company** relating to the size of the reported **Demand** increase and the **Reported Period(s) of Increase**. Where for any **Reported Period of Increase** the resulting increase in **Demand** equates to a level that is in excess of one percent of the **Actual Amount** of **HH Charges** in respect of the previous **Financial Year**, **The Company** shall, within one month of receiving such a request, recalculate the **Deemed HH Forecasting Performance** on the basis set out in Appendix 2 Paragraph 4. A **User** shall not be entitled to raise more than one request by reference to any period or part period covered in another **Reported Period of Increase** in respect of which a request has been raised under this Paragraph.

3.22.8 Revision of **Deemed NHH Forecasting Performance**

If the **User** has experienced a significant increase in the amount of **Demand** taken by its **Customers** during the last five months of the previous **Financial Year** and believes that this has had a significant effect on their **Deemed NHH Forecasting Performance**, then no later than one month from the date of the notification given to the **User** under paragraph 3.22.6, the **User** may request that **The Company** revises the **Deemed NHH Forecasting Performance**. Upon raising such a request,

the **User** must provide information to **The Company** relating to the size of the reported **Demand** increase and the **Reported Period(s) of Increase**. Where for any **Reported Period of Increase** the resulting increase in **Demand** equates to a level that is in excess of one percent of the **Actual Amount** of **NHH Charges** in respect of the previous **Financial Year**, **The Company** shall within one month of receiving such a request, recalculate the **Deemed NHH Forecasting Performance** on the basis set out in Appendix 2 Paragraph 7. A **User** shall not be entitled to raise more than one request by reference to any period or part period covered in another **Reported Period of Increase** in respect of which a request has been raised under this Paragraph.

3.22.9 Review of Security Cover

The Company shall keep under review the **Security Cover** relating to the **User** and shall promptly advise the **User** whenever the **Security Amount** maintained by the **User** is more or less than the amount required to be maintained pursuant to this Paragraph 3.22.

3.22.10 Decrease of Security Cover

If **The Company** reasonably determines that the **User's** required **Security Cover** has decreased, it shall so notify the **User**. **The Company** shall consent to an appropriate reduction in the available amount of any outstanding **Qualifying Guarantee** or **Letter of Credit** or **Bilateral Insurance Policy** or **Insurance Performance Bond** or **Independent Security Arrangement** and/or shall repay to the **User** such part of the deposit held in the **Escrow Account** for the account of the **User** (together with all accrued interest on the part to be repaid) sufficient to reduce the **User's Security Amount** to the level of **Security Cover** applicable to it within 5 **Business Days** of the **User's** consent.

3.22.11 Notification in respect of Security Cover

The Company shall notify each **User** promptly if:-

(a) that **User** fails to provide, maintain, extend or renew a **Qualifying Guarantee** or a **Letter of Credit** or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** which it is required to provide, maintain, extend or renew pursuant to Paragraphs 3.21 or 3.22 inclusive;

(b) **The Company** shall make a demand under any such **Qualifying Guarantee** or a call under a **Letter of Credit**

or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement**; or

(c) **The Company** becomes aware that that **User**:

(i) shall cease to have an **Approved Credit Rating** or shall cease to have an **Approved Credit Rating** for an amount at least equal to the **User's Security Requirement**, or

(ii) shall be placed on a credit watch by the relevant credit rating agency (or becomes subject to an equivalent procedure) which in any case casts doubt on the **User** retaining an **Approved Credit Rating** or an **Approved Credit Rating** for an amount at least equal to the **User's Security Requirement** or maintaining the **Credit Assessment Score** given by the **User's Independent Credit Assessment**, or

(iii) shall be in default under the additional or alternative security required to be provided pursuant to this Part III; or

(d) **The Company** becomes aware that any bank that has issued a **Letter of Credit** in relation to that **User** which has not expired shall cease to have the credit rating required by this Section***;*** or

(e) **The Company** becomes aware that any entity providing a **Qualifying Guarantee** or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** in relation to that **User** which has not expired shall cease to meet the **Requirements** in the case of a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** or in the case of a **Qualifying Guarantee** cease to have an **Approved Credit Rating** for an amount at least equal to the required **Security Amount** (less its balance on the **Escrow Account**); or

(f) ~~**NGC**~~**The Company** becomes aware that the **User's Security Requirement** exceeds 85% of the **User's Allowed Credit**.

Provided always that the failure by **The Company** to notify the **User** pursuant to Paragraphs 3.22.9, 3.22.10 or 3.22.11 shall not relieve the **User** of its obligations under and in accordance with the terms of this Section 3 and the **Charging Statements.**

3.22.12 Release from Security Cover Obligations

Upon a **User** becoming a **Dormant CUSC Party** or ceasing to be a **CUSC Party** and provided that all amounts owed by the **User** in respect of **Balancing Services Use of System Charges** ~~and~~ **, Transmission Network Use of System Demand Charges, Short Term Access Products Charges,** and the local and wider components of **Transmission Network Use of System Charges** have been duly and finally paid and that it is not otherwise in default in any respect of any **Balancing Services Use of System Charges** ~~or~~ **, Transmission Network Use of System Demand Charges, Short Term Access Products Charges** or local and wider components of **Transmission Network Use of System Charges** (including in each case interest) payable under the **CUSC**, the **User** shall be released from the obligation to maintain **Security Cover** and **The Company** shall consent to the revocation of any outstanding **Qualifying Guarantee** or **Letter of Credit** or a **Bilateral Insurance Policy** or an **Insurance Performance Bond** or an **Independent Security Arrangement** and shall repay to the **User** the balance (including interest credited thereto) standing to the credit of the **User** on the **Escrow Account** at that date.

3.23 PAYMENT DEFAULT

If, by 12.30 hours on any **Use of System Payment Date**, **The Company** has been notified by a **User** or it otherwise has reason to believe that that **User** will not have remitted to it by close of banking business on the **Use of System Payment Date** all or any part ("the amount in default") of any amount which has been notified by **The Company** to the **User** as being payable by the **User** by way of either the **Balancing Services Use of System Charges** ~~and/or~~ **, Transmission Network Use of System Demand Charges, Short Term Access Products Charges** and/or local and wider components of **Transmission Network Use of System Charges** on the relevant **Use of System Payment Date**, then **The Company** shall be entitled to act in accordance with the following provisions (or whichever of them shall apply) in the order in which they appear until **The Company** is satisfied that the **User** has discharged its obligations in respect of the **Balancing Services Use of System Charges** and/or **Transmission Network Use of System Demand Charges** and/or **Short Term Access Products Charges** and/or the local and/or wider components of **Transmission Network Use of System Charges** (as appropriate) under the **CUSC** which are payable in respect of the relevant **Settlement Day** (in the case of **Balancing Services Use of System Charges, Short Term Access Products Charges**) or **Financial Year** (in the case of **Transmission Network Use of System Demand**

Charges and the local and wider components of **Transmission Network Use of System Charges**):-

(a) **The Company** may to the extent that the **User** is entitled to receive payment from **The Company** pursuant to the **CUSC** (unless it reasonably believes that such set-off shall be unlawful) set off the amount of such entitlement against the amount in default;

(b) **The Company** shall be entitled to set off the amount of funds then standing to the credit of the **Escrow Account** against **Balancing Services Use of System Charges** ~~and/or~~, **Transmission Network Use of System Demand Charges, , Short Term Access Products Charges** and the local and/or wider components of **Transmission Network Use of System Charges** (as appropriate) unpaid by the **User** and for that purpose **The Company** shall be entitled to transfer any such amount from the **Escrow Account** to any other account of **The Company** at its absolute discretion and shall notify the **User** accordingly;

(c) **The Company** may demand payment under any outstanding **Letter of Credit** supplied by the **User** in a sum not exceeding the available amount of all such **Letters of Credit**;

(d) **The Company** may demand payment under any outstanding **Qualifying Guarantee** provided for the benefit of the **User** pursuant to Paragraph 3.21.3(b);

(e) **The Company** may demand payment under any outstanding **Bilateral Insurance Policy** provided for the benefit of the **User**;

(f) **The Company** may demand payment under any outstanding **Insurance Performance Bond** provided for the benefit of the **User**;

(g) **The Company** may demand payment under any outstanding **Independent Security Arrangement** provided for the benefit of the **User**.

3.24 UTILISATION OF FUNDS

In addition to the provisions of Paragraph 3.23 above if **The Company** serves a notice of default under the terms of Paragraph 5.5 or a notice of termination under Paragraph 5.7 then **The Company** shall be entitled to demand payment of any of the **Balancing Services Use of System Charges** ~~and/or~~ **, Transmission Network Use of System Demand Charges, Short Term Access Products Charges** and local and/or wider components of **Transmission Network Use of System Charges** which are outstanding from the relevant **User** whether or not

the **Use of System Payment Date** in respect of them shall have passed and:-

(a) make demand under any outstanding **Qualifying Guarantee** or a call under any outstanding **Letter of Credit**, **Bilateral Insurance Policy**, **Insurance Performance Bond** or **Independent Security Arrangement** supplied by the **User**; and

(b) to set off the funds in the **Escrow Account** against **Balancing Services Use of System Charges** ~~and/or~~ **, Transmission Network Use of System Demand Charges, Short Term Access Products Charges** and local and/or wider components of **Transmission Network Use of System Charges** unpaid by the **User** and for that purpose **The Company** shall be entitled to transfer any such amount from the **Escrow Account** to any other account of **The Company** as it shall in its sole discretion think fit.

3.25 USER'S RIGHT TO WITHDRAW FUNDS

If a **User** is not in default in respect of any amount owed to **The Company** in respect of the **Balancing Services Use of System Charges** ~~or~~**, Transmission Network Use of System Charges, Short Term Access Products Charges** or the local and/or wider components of **Transmission Network Use of System Charges** under the terms of the **CUSC** and any **Bilateral Agreement** to which the **User** is a party:-

(a) **The Company** shall transfer to the **User** quarterly interest credited to the **Escrow Account**; and

(b) **The Company** shall transfer to such **User** within a reasonable time after such **User's** written request therefor any amount of cash provided by the **User** by way of **Security Cover** which exceeds the amount which such **User** is required to provide by way of security in accordance with this Part III.

3.26 USER'S ALLOWED CREDIT

3.26.1 Each **User** shall notify ~~**NGC**~~**The Company** promptly if:-

(a) it gains an **Approved Credit Rating**; or

(b) it ceases to have an **Approved Credit Rating**; or

(c) where the **User** holds an **Approved Credit Rating**, its specific investment grading changes; or

(d) it has reason to believe that its **Credit Assessment Score** is likely to have changed since the last **Independent Credit Assessment**.

3.26.2 The **User's Allowed Credit** extended by ~~**NGC**~~**The Company** at any time to each **User** with an **Approved Credit Rating** shall be calculated in accordance with Paragraph 1 of Appendix 1 of this Section 3 subject to a maximum value of the **Unsecured Credit Cover**.

3.26.3 The **User's Allowed Credit** extended by ~~**NGC**~~**The Company** at any time to each **User** without an **Approved Credit Rating** shall be at the choice of the **User** the **Payment Record Sum** or the **Credit Assessment Sum**.

3.26.4 Unless the **User** has notified ~~**NGC**~~**The Company** that it wishes its **User's Allowed Credit** to be to be based on the **Credit Assessment Sum** then, subject to Paragraph 3.26.5, for each successive month in which the **User** pays its **Use of System Charges** by the **Use of System Payment Date** then the **User's Allowed Credit** extended to such **User** at any time shall be calculated in accordance with Paragraph 2 of Appendix 1 of this Section 3.

3.26.5 Where a **User** fails to pay its **Use of System Charges** within 2 **Business Days** of the **Use of System Payment Date** its **Payment Record Sum** shall be reduced by 50% on the first such occasion within a twelve month period and shall be reduced to zero on the second occasion in such twelve month period. Upon any such failure to pay, the **User's Allowed Credit** (as adjusted following such failure in accordance with this clause) shall be calculated for successive months in accordance with Paragraph 3.26.4.

3.26.6 Where a **User** has notified ~~**NGC**~~**The Company** that it wishes its **User's Allowed Credit** to be based on its **Credit Assessment Sum**, the **Credit Assessment Sum** extended to a **User** at any time shall be calculated be reference to the **Credit Assessment Score** given by the **Independent Credit Assessment** in accordance with Paragraph 3 of Appendix 1 of this Section 3.

3.26.7 Where a **User** has notified ~~**NGC**~~**The Company** that its wishes its **User's Allowed Credit** to be based on the **Credit Assessment Sum** then the **User** will obtain an **Independent Credit Assessment** of that **User**. The first such **Independent Credit Assessment** will be at ~~**NGC**~~**The Company's** cost.

3.26.8 Where a **User's Allowed Credit** is based on the **Credit Assessment Sum** then where ~~**NGC**~~**The Company** has reason to believe that the **Independent Credit Assessment** last obtained is likely to have changed then ~~**NGC**~~**The Company** shall be entitled to request the **User** to obtain a further **independent Credit Assessment**. Such **Independent Credit Assessment** shall be at ~~**NGC**~~**The Company's** cost.

3.26.9 The **User** may obtain an **Independent Credit Assessment** at ~~**NGC**~~**The Company's** cost provided that ~~**NGC**~~**The Company** has not paid for an

earlier **Independent Credit Assessment** for that **User** within the previous 12 months. The **User** may obtain further **Independent Credit Assessments** within such a 12 month period at the **User's** cost.

3.27 TRANSITIONAL ARRANGEMENTS

3.27.1 Recognising the changes to the **Security Cover** and **Security Requirements** introduced by the **Security Amendment** and the consequences for **The Company** and **Users** then notwithstanding the provisions of **CUSC** Section 3 Part III the following transitional provisions shall apply:

(a) the obligation for **Users** whose **Security Requirement** will as a result of the **Security Amendment** increase at the **Security Amendment Implementation Date** shall be to provide the difference between the **Existing Security Cover** and the **Security Cover** in full by no later than the **End Date** and by increasing the **Existing Security Cover** each month by equal monthly amounts of the difference between the **existing Security Cover** and the **Security Cover**; and

(b) where a **User's Security Requirement** at the **Security Amendment Implementation Date** is less than the **Existing Security Cover** held for that **User** then **The Company** shall release the **existing Security Cover** by the appropriate amount as soon as practicable and in any event within one calendar month of the **Security Amendment Implementation Date**.

3.27.2 Recognising the changes to the **Security Cover** and **Security Requirements** introduced by the **Value At Risk Amendment** and the consequences for **The Company** and **Users** then notwithstanding the provisions of **CUSC** Section 3 Part III the following transitional provisions shall apply:

(a) Until the **Initial Demand Reconciliation Statement** has been issued for the **Financial Year** ending at least six months following the **Value At Risk Amendment Implementation Date,** and **The Company** has calculated the **Forecasting Performance Related VAR** by reference to this, each **User's Forecasting Performance Related VAR** shall be substituted by such percentage of **User's Transmission Network Use of System Demand Charges** as reflects the percentage difference between the **Actual Amount** and the **Notional Amount** of the **User's Transmission Network Use of System Demand Charges** for the previous **Financial Year**, provided that where the **Notional Amount** exceeds the **Actual Amount**, the percentage shall be zero;

(b) the obligation for **Users** whose **Security Requirement** will increase at the **Value At Risk Amendment Implementation Date** as a result of the **Value At Risk Amendment** shall be to provide the difference between the **Pre-Value At Risk**

Amendment Security Cover and the **Security Cover** in full by no later than the **Value At Risk Amendment Implementation End Date** and by increasing the **Pre-Value At Risk Amendment Security Cover** each month by equal monthly amounts of the difference between the **Pre-Value At Risk Amendment Security Cover** and the **Security Cover**; and

(c) where a **User's Security Requirement** at the **Value At Risk Amendment Implementation Date** is less than the **Pre-Value At Risk Amendment Security Cover** held for that **User** then **The Company** shall release the **Pre-Value At Risk Amendment Security Cover** by the appropriate amount as soon as practicable and in any event within one calendar month of the **Value At Risk Amendment Implementation Date**.

APPENDIX 1 CREDIT ARRANGEMENTS

1 Where the **User** meets the **Approved Credit Rating** that **User's Allowed Credit** at any given time shall be calculated as a percentage of **Unsecured Credit Cover** by reference to the specific investment grade within the **User's Approved Credit Rating** as follows:

Approved Long Term Credit Rating			**User's Allowed Credit as % of Unsecured Credit Cover**
Standard & Poor's	**Moody's**	**Fitch**	
AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	AAA AA+ AA AA-	100
A+ A A-	A1 A2 A3	A+ A A-	40
BBB+	Baa1	BBB+	20
BBB	Baa2	BBB	19
BBB-	Baa3	BBB-	18
BB+	Ba1	BB+	17
BB	Ba2	BB	16
BB-	Ba3	BB-	15

2 Where based on the **Payment Record Sum**, a **User's Allowed Credit** at any time shall be calculated on the basis of 0.4% per 12 month period (escalating on an evenly graduated basis each month) of the **Unsecured Credit Cover**, subject to a maximum of 2% after 60 months of successive payment by the **Use of System Payment Date**.

3 Where based on the **Credit Assessment Sum**, a **User's Allowed Credit** at any given time shall be calculated as a percentage of the **Unsecured Credit Cover** by reference to the **Credit Assessment Score** as follows:

Credit Assessment Score	**User's Allowed Credit as % of Unsecured Credit Cover**
10	20
9	19
8	18
7	17
6	16
5	15
4	13.33
3	10
2	6.67
1	3.33

0	0

APPENDIX 2

Base Value At Risk

1. For each **Security Period**, the **HH Base Percentage** used in determining the **User's HH Base Value at Risk** shall be determined by reference to the following:

Security Period Start Date (inclusive)	**Security Period End Date (inclusive)**	**HH Base Percentage**
1st April	30th June	-8.4%
1st July	30th September	-33.4%
1st October	31st December	-49.1%
1st January	31st March	7.0%

(a)

(b) For

2. For each **Security Period**, the **NHH Base Percentage** used in determining the **User's NHH Base Value at Risk** shall be determined by reference to the following:

Security Period Start Date (inclusive)	**Security Period End Date (inclusive)**	**(c)NHH Base Percentage**
1st April	30th June	(d)4.3%
1st July	30th September	(e)-1.5%
1st October	31st December	(f)-2.8%
1st January	31st March	(g)3.7%

Deemed HH Forecasting Performance and Revision

3. **Deemed HH Forecasting Performance**, FPP_{HH}, shall be calculated as set out in the following formula:

$$FPP_{HH} = \max\left(0, \frac{5}{1333}\sum_{m=8}^{12}\left(\frac{AA_{HH} - IA_{HH,m}}{AA_{HH}} * W_{HH,m}\right) - CA_{HH}\right)$$

Where:

AA_{HH} is the **Actual Amount** of **User's HH Charges** for the previous **Financial Year**

$IA_{HH,m}$ is the **Indicative Annual HH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during month *m* of the previous **Financial Year**.

$W_{HH,m,}$ The forecast weighting to be applied for each month, *m* by reference to the following:

m	**Invoice Month**	**Forecast weighting, $W_{HH,m}$**
8	November	33.3
9	December	33.3
10	January	33.3
11	February	66.7
12	March	100

$CA_{HH,}$ is an allowance for extreme conditions equal to 0.06.

4. The revised **Deemed HH Forecasting Performance,** shall be calculated on the basis of Paragraph 3 above, substituting the **Indicative Annual HH TNUoS Charge** for each month, *m* prior to the end of the **Reported Period of Increase** with the **Revised Indicative Annual HH TNUoS charge**, $RIA_{HH,m}$

5. The **Revised Indicative Annual HH TNUoS charge,** $RIA_{HH,m}$ shall be derived as follows:

$$RIA_{HH,m} = \min\left(\max\left(\frac{DUA_{HH,p}}{DUB_{HH,p}} - \frac{DSA_{HH,p}}{DSB_{HH,p}}, 0 \right) * RD_{HH,p} + IA_{HH,m}, IA_{HH,p} \right)$$

Where:

$DUA_{HH,p}$ is the average half-hourly metered demand taken by the **User's Customers** during the period 17:00 to 17:30 on the twenty **Business Days** prior to the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DUB_{HH,p}$ is the average half-hourly metered demand taken by the **User's Customers** during the period 17:00 to 17:30 on the twenty **Business Days** following the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DSA_{HH,p}$ is the average demand taken by **Total System Chargeable HH Demand** during the period 17:00 to 17:30 on the twenty **Business Days** prior to the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DSB_{HH,p}$ is the average demand taken by **Total System Chargeable HH Demand** during the period 17:00 to 17:30 on the twenty **Business Days** following the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$RD_{HH,p}$ is the forecast proportion of **HH Charges** remaining for the previous **Financial Year** from the first day of the month in which the **Reported Period of Increase**, *p* commences by reference to the following:

Month in which **Reported Period of Increase commences**	Remaining proportion of **HH Charges**
October	100%
November	100%
December	100%
January	66.7%
February	33.3%

$IA_{HH,m}$ is the **Indicative Annual HH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during month *m* of the previous **Financial Year**.

$IA_{HH,p}$ in the case that the the **Reported Period of Increase**, *p* ends prior to the 10th February of the previous **Financial Year**, is set equal to the **Indicative Annual HH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during the month immediately following **Reported Period of Increase** of the

previous **Financial Year,** otherwise is set to infinity.

Deemed NHH Forecasting Performance and Revision

6. **Deemed NHH Forecasting Performance**, FPP_{NHH}, shall be calculated as set out in the following formula:

$$FPP_{NHH} = \max\left(0, \frac{1}{300}\sum_{m=8}^{12}\left(\frac{AA_{NHH} - IA_{NHH,m}}{AA_{NHH}} * W_{NHH,m}\right) - CA_{NHH}\right)$$

Where:

AA_{NHH} is the **Actual Amount** of **User's NHH Charges** for the previous **Financial Year**.

$IA_{NHH,m}$ is the **Indicative Annual NHH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during month *m* of the previous **Financial Year**.

$W_{NHH,m,}$ The forecast weighting to be applied for each month, *m* by reference to the following:

m	**Invoice Month**	**Forecast weighting, $W_{NHH,m}$**
8	November	41
9	December	49
10	January	59
11	February	70
12	March	81

$CA_{NHH,}$ is an allowance for extreme conditions equal to 0.03.

7. The revised **Deemed NHH Forecasting Performance** shall be calculated on the basis of Paragraph 6 above, substituting the **Indicative Annual NHH TNUoS Charge** for each month, *m* prior to the end of the **Reported Period of Increase** with the **Revised Indicative Annual NHH TNUoS charge, $RIA_{NHH,m}$.**

8. The **Revised Indicative Annual NHH TNUoS charge,** $RIA_{NHH,m}$ shall be derived as follows:

$$RIA_{NHH,m} = \min\left(\max\left(\frac{DUA_{NHH,p}}{DUB_{NHH,p}} - \frac{DSA_{NHH,p}}{DSB_{NHH,p}}, 0 \right) * RD_{NHH,p} + IA_{NHH,m}, IA_{NHH,p} \right)$$

Where:

$DUA_{NHH,p}$ is the average non-half-hourly metered demand taken by the **User's Customers** during the period 16:00 to 19:00 on the twenty **Business Days** prior to the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DUB_{NHH,p}$ is the average non-half-hourly metered demand taken by the **User's Customers** during the period 16:00 to 19:00 on the twenty **Business Days** following the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DSA_{NHH,p}$ is the average demand taken by **Total System Chargeable NHH Demand** during the period 16:00 to 19:00 on the twenty **Business Days** prior to the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$DSB_{NHH,p}$ is the average demand taken by **Total System Chargeable NHH Demand** during the period 16:00 to 19:00 on the twenty **Business Days** following the **Reported Period of Increase,** *p*, that do not fall between the two week period commencing 22nd December.

$RD_{NHH,p}$ is the forecast proportion of **NHH Charges** remaining for the previous **Financial Year** from the first day of the month in which the **Reported Period of Increase**, *p* commences by reference to the following:

Month in which **Reported Period of Increase commences**	Remaining proportion of **NHH Charges**
October	59%
November	51%
December	41%
January	30%
February	19%

$IA_{NHH,m}$ is the **Indicative Annual NHH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during month *m* of the previous **Financial Year**.

$IA_{NHH,p}$ in the case that the the **Reported Period of Increase**, *p* ends prior to the 10th February of the previous **Financial Year**, is set equal to the **Indicative Annual NHH TNUoS charge** calculated using the **Demand Forecast** used to determine **Transmission Network Use of System Demand Charges** made during the month immediately following **Reported Period of Increase** of the previous **Financial Year,** otherwise is set to infinity.

~~**END OF SECTION 3**~~

APPENDIX 3

Ways of Using the GB Transmission System

References to "**User**" in this Appendix 3 shall be read as references to a **User** acting in the category of a **Power Station** directly connected to the **GB Transmission System** or an **Embedded Power Station** with a **Bilateral Embedded Generation Agreement**.

A **User** is entitled to **Use of System** at a **Node** up to its **LCN** and by means of the access products set out in Sections 2 to 11 in this Appendix 3.

For the avoidance of doubt, the payment provisions of Paragraph 6.6 of Section 6 of the **CUSC** shall apply to the products set out in this Appendix unless specified otherwise, in which case the payment provisions of this Appendix shall prevail.

1. LOCAL CAPACITY NOMINATION

1.1 Background

A **User's LCN** will be as set out in Appendix C of that **User's Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**.

1.2 Characteristics of Local Capacity Nomination

1.2.1 A **User's LCN** shall never exceed that **User's Connection Entry Capacity** specified in that **User's Bilateral Connection Agreement**.

1.2.2 No Use of System without LCN

A **User** without an **LCN** shall not be entitled to apply for **Use of System** by means of any **Short Term Access Products** or apply for an **Exchange Rate Request** and shall not be able to use the **GB Transmission System** prior to completion of any **Transmission Connection Asset Works** and **LCN Transmission Reinforcement Works**.

1.2.3 A **User** without an **LCN** or a **Construction Agreement** providing for **LCN** shall not be entitled to apply for **Use of System** by means of a **Long Term access Auction**, and shall not be able to use the **GB Transmission System** by such means prior to completion of any **Transmission Connection Asset Works** and **LCN Transmission Reinforcement Works**. Where the **User** has a **Construction Agreement** providing for an **LCN** it can only apply for **Transmission Entry Capacity** for **Financial Years** from and after the

Financial Year in which the **Completion Date** is expected to occur.

1.2.4 Prohibition to export above LCN

A **User** shall not request a **Use of System** access product under this Appendix 3, if such a product would result in a **User's Access Capacity** exceeding its **LCN**.

1.3 Users wishing to increase LCN after receipt of Operational Notification

Each **User** shall be entitled to request an increase in its **LCN** for a **Node** up to, in the case of a **Power Station** directly connected to the **GB Transmission System**, a maximum of the **Connection Entry Capacity** for the **Node**, and such request shall be deemed to be a **Modification** for the purposes of the **CUSC** but with the words "as soon as practicable… not more than 3 months after" being read in the context of such **Modification** as being "within 28 days where practicable and in any event not more than 3 months (save where the **Authority** consents to a longer period) after".

1.4 Users wishing to decrease LCN after receipt of Operational Notification

1.4.1 Each **User** shall be entitled to decrease the **LCN** for the **Node** upon giving **The Company** not less than 5 **Business Days** notice in writing prior to 30 March in any **Financial Year**.

1.4.2 **The Company** shall as soon as practicable after receipt of such notice issue a revised Appendix C for the purposes of the relevant **Bilateral Agreement** or **Bilateral Embedded Generation Agreement** reflecting the decrease in the **LCN**.

1.4.3 The decrease in the **LCN** shall take effect on the first of April following receipt of the notice.

2. TRANSMISSION ENTRY CAPACITY (TEC)

2.1 Background

A **User's Transmission Entry Capacity** (if any) and the **TEC Period** to which it relates shall be as allocated to that **User** under the **Long Term Access Auction**. Any **Transmission Entry Capacity** allocated to a **User** and the relevant **TEC Period** shall be specified in Appendix C to the **Bilateral**

Connection Agreement or **Bilateral Embedded Generation Agreement** as the case may be

2.2 The **Long Term Access Auction** shall be undertaken by **The Company** in accordance with the principles, processes and rules and methodologies as set out in the **SO Long Term Release Methodology**..

2.3 **SO Long Term Release Methodology**

2.3.1 **The Company** shall prepare at least 4 months prior to the **Initial Long Term Access Auction** and thereafter maintain an **SO Long Term Release Methodology** in accordance with Paragraph 2.3.2 setting out:

(a) the mechanism by which **The Company** will offer **Transmission Entry Capacity**;

(b) the description of the auction process, its timings and its rules;

(c) the information that **The Company** will publish;

(d) the mechanism by which **The Company** will establish boundaries and the baseline and incremental capacity available for each **Financial Year**;

(e) the application forms; and

(f) addressing any other matters considered by **The Company** to be necessary.

2.3.2 As soon as practicable and in any event within 3 months of **CUSC Amendment Proposal** 166 becoming an **Approved Amendment The Company** shall make an **Amendment Proposal** to provide for the **SO Long Term Release Methodology** and for it to be incorporated within the **CUSC.**

2.4 Exchange Rate Requests Effective Post Operational Notification

2.4.1 **The Company** shall establish and maintain an **LCN/TEC Register** published on **The Company Website** recording the details set out in Paragraph 2.4.2 of this Appendix 3.

2.4.2 The **LCN/TEC Register** shall set out the name of the **User**, the **Connection Site** (or in the case of an

Embedded Generator, site of connection), the **Transmission Entry Capacity** (if any) allocated under the **Long Term Access Auction** and the **TEC Period** to which it relates, the **Local Capacity Nomination**, the year of connection to (or in the case of an **Embedded Generator** the year of the use of) the **GB Transmission System** in respect of any **Bilateral Agreements** or agreements to change a **User's LCN**.

2.4.3 The details of the **Bilateral Agreement** or agreements to change a **User's LCN** shall be recorded on the **LCN/TEC Register** within 5 **Business Days** of the completion of such agreements. The details of any **Transmission Entry Capacity** and the **TEC Period** shall be recorded on the **LCN/TEC Register** as soon as practicable and in any event within 10 **Business Days** of the relevant **Auction Closure Date**.

2.4.4 Subject to the payment of the fee as outlined in the **Charging Methodology Statements**, **The Company** shall, after receipt of an **Exchange Rate Request** calculate the **Exchange Rate** as soon as practicable but in any event not more than 3 months after such request is received.

2.4.5 In the event that the parties wish to proceed with a **TEC Trade** on the basis of the **Exchange Rate** then the **User** shall notify **The Company** and effective from the following 1 April, **The Company** shall revise the **Bilateral Agreements** (as appropriate) provided.

2.4.6 Any **TEC** transferred pursuant to a **TEC Trade** under this Paragraph 2.4 of Appendix 3 shall be transferred on a permanent basis for up to the relevant **TEC Period**.

3. SHORT TERM TRANSMISSION ENTRY CAPACITY

3.1 Background

3.1.1 A **User,** who is party to a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** may, make a **STTEC Request** to **The Company** in accordance with this Paragraph 3 of Appendix 3.

3.1.2 A **User' s Access Capacity** for any part of the **STTEC Period** must not exceed its **Local Capacity Nomination**.

3.2 Form of STTEC Request

3.2.1 A **STTEC Request** must be received by **The Company** by the relevant date specified in Paragraph 3.6.5 of Appendix 3 of this Section 3 to the **CUSC**.

3.2.2 A **STTEC Request** must be made by way of email to be sent to the email address specified in the **STTEC Request Form** the and confirmed by fax and must attach the **STTEC Request Form** duly completed and signed on behalf of the **User**.

3.2.3 A **STTEC Request** shall not be deemed received by **The Company** until the non-refundable **STTEC Request Fee** has been paid to **The Company** and until the faxed copy of the **STTEC Request** is received in accordance with Paragraph 6.21.2.4 of the **CUSC**.

3.2.4 The **STTEC Request** must specify whether it is a **Request for a STTEC Authorisation** or an **Application for a STTEC Offer**.

3.2.5 Each **STTEC Request** must state one **STTEC Period** only.

3.2.6. A **STTEC Request** must be for a **STTEC Period** within a 12 month period of receipt by **The Company** of the **STTEC Request** and the **STTEC Period** must not include any days within more than one **Financial Year**. The **STTEC Request** must include the minimum and maximum level of MW for the **STTEC Period**.

3.3 Assessment by The Company of STTEC Requests

3.3.1 **The Company** may reject any **STTEC Request** that is not made in accordance with the provisions of this Paragraph 3 of this Appendix 3.

3.3.2 **The Company** will assess **STTEC Requests** and whether or not to make a **STTEC Offer** at its absolute discretion.

3.3.3 **The Company** will start assessing a **STTEC Request** no later than the relevant date specified in Paragraph 3.6.5 of this Appendix 3.

3.3.4 If **The Company** has received more than one **STTEC Request** for a **STTEC Period** with the same start date, **The Company** will:

(i) assess any **Requests for a STTEC Authorisation** before assessing any **Applications for a STTEC Offer**;

(ii) assess **Requests for a STTEC Authorisation** on a first come first served basis such that the **Request for a STTEC Authorisatio**n received earliest in time by **The Company** (as recorded by **The Company**) will be assessed first and then the **Request for a STTEC Authorisation** received next in time after that, and so on;

(iii) assess **Applications for a STTEC Offer** on a first come first served basis such that the **Application for a STTEC Offer** received earliest in time by **The Company** (as recorded by **The Company**) will be assessed first and then the **Application for a STTEC Offer** received next in time after that, and so on.

3.3.5 No priority will be given to any **Users** who have previously made successful **STTEC Requests** or **LDTEC Requests**.

3.4 Notification by The Company

3.4.1 Each **User** confirms and agrees that **The Company** shall have no liability to it for any **STTEC Request** in respect of which **The Company** makes no **STTEC Offer** in accordance with this Paragraph 3 of Appendix 3.

3.4.2 **The Company** is not obliged to make a **STTEC Offer** is respect of any **STTEC Request** submitted.

3.4.3 A **STTEC Offer** will only be made with respect to a **STTEC Request** at a level within the maximum and minimum range in MW submitted by the **User**.

3.4.4 **STTEC Offers** will be made for a uniform amount of MW for the **STTEC Period**.

3.4.5 No **STTEC Offer** will be made if the maximum figure in the **STTEC Request** would together with the **User's Transmission Entry Capacity** (plus any **Short Term**

Access Product or **Entry Overrun** previously offered for any part of the **STTEC Period**) exceeds the total station **Local Capacity Nomination**.

3.4.6 **The Company** shall notify a **User** who has made a **STTEC Request** by no later than the relevant date referred to at Paragraph 3.6.6 of this Appendix 3, whether or not **The Company** makes a **STTEC Offer** in response to the **User's STTEC Request**.

3.5 Charging, Invoicing and Payment

3.5.1 Each **User** must pay the **STTEC Charge** even if the **User** does not use the corresponding **STTEC**.

3.5.2 The provisions of Section 3 of the **CUSC** shall apply in respect of the **STTEC Charge**.

3.5.3 The provisions of Section 6.6 of the **CUSC** shall apply in respect of payment of the **STTEC Charge**.

3.6 General

3.6.1 Each **Request for a STTEC Authorisation** will constitute an unconditional and irrevocable offer by the **User** to **The Company** to buy **Short Term Capacity** (on a station basis) up to the quantity (in whole MW) stated in the **STTEC Request** for the **STTEC Period** and at the relevant price per MW set out in the **Statement of Use of System Charges** and upon the terms and conditions of **CUSC**. A **Request for a STTEC Authorisation** is capable of being accepted by **The Company**. Notification by **The Company** that it has granted the **Request for a STTEC Authorisation** in accordance with Paragraph 3.4.6 of this Appendix 3 constitutes acceptance by **The Company** of the **Request for a STTEC Authorisation**. The notification of **STTEC Authorisation** will:-

(i) state the level in MW (within the maximum and minimum range requested by the **User**) offered for the **STTEC Period**;

(ii) include a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) which will detail the **STTEC** and the **STTEC Period** for which this applies and

The Company and the **User** agree that Appendix C to the relevant **Bilateral Agreement** will be deemed to be that notified in accordance with this Paragraph 3.6 of Appendix 3 for the **STTEC Period**, unless otherwise amended in accordance with such **Bilateral Agreement** or the **CUSC**. Upon expiry of the **STTEC Period** the provisions in Appendix C that relate to such **STTEC** for that **STTEC Period** shall cease to have effect;

(iii) state the **STTEC Charge**.

3.6.2 Each **Application for a STTEC Offer** is an application for the right to buy **Short Term Capacity** (on a station basis) up to the quantity (in whole MW) stated in the **STTEC Request** for the **STTEC Period** at the relevant price per MW set out in the **Statement of Use System Charges** and upon the terms and conditions of **CUSC**. Once an **Application for a STTEC Offer** has been received by **The Company** it cannot be withdrawn without the written consent of **The Company**. Notification by **The Company** that it has granted the **Application for a STTEC Offer** in accordance with Paragraph 3.4.5 of this Appendix 3 will constitute a **STTEC Offer**.

3.6.3 A **STTEC Offer** shall:

(i) state the level in MW of **STTEC** (within the maximum and minimum range requested by the **User**) offered for the **STTEC Period**;

(ii) include a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) which will detail the **STTEC** and the **STTEC Period** for which this applies and **The Company** and the **User** agree that, if the **User** accepts the **STTEC Offer** in accordance with Paragraph 3.6.4 of this Appendix 3, Appendix C to the relevant **Bilateral Agreement** will be deemed to be that notified in accordance with this Paragraph 3 of this Appendix 3 for the **STTEC Period**, unless otherwise amended in accordance with such **Bilateral Agreement** or the **CUSC**. Upon expiry of the **STTEC Period** the provisions in

Appendix C that relate to such **STTEC** for that **STTEC Period** shall cease to have effect;

(iii) state the **STTEC Charge**.

(iv) be open for acceptance by the **User** within 24 hours of receipt of the faxed copy of the **STTEC Offer**.

3.6.4 A **User** may accept a **STTEC Offer** within 24 hours of receipt of the faxed copy of the **STTEC Offer**. Acceptance of a **STTEC Offer** shall be made by the **User** executing and faxing back the Appendix C sent to the **User** as part of the **STTEC Offer.** A **STTEC Offer** lapses if not accepted within such period.

3.6.5 The dates referred to at Paragraphs 3.2.1 and 3.3.3 of this Appendix 3 are:-

(i) in the case of a **Request for a STTEC Authorisation**, six weeks before the start date for the **STTEC Period**; and

(ii) in the case of an **Application for a STTEC Offer**, two weeks before the start date for the **STTEC Period**.

3.6.6 The date referred to at Paragraph 3.4.6 of this Appendix 3 is:-

(i) in the case of a **Request for a STTEC Authorisation**, four weeks before the start date for the **STTEC Period**;

(ii) in the case of an **Application for a STTEC Offer**, seven days before the start date for the **STTEC Period**.

3.6.7 **The Company** may publish the following information in respect of **STTEC Authorisations**, and **STTEC Offers** which are accepted:-

1. details of the **STTEC Period**;

2. maximum and minimum amount in MW requested;

3. identity of the **User**;

4. the **Connection Site** or site of **Connection**,

in such form and manner as shall be prescribed by **The Company** from time to time.

3.6.8 **The Company** may publish the following information in respect of **Requests for a STTEC Authorisation** and **Applications for a STTEC Offer** which in either case are not granted and **STTEC Offers** which are not accepted:-

1. details of the **STTEC Period**;

2. maximum and minimum amount in MW requested,

in such form and manner as shall be prescribed by **The Company** from time to time.

3.6.9 The **User** consents to the publication by **The Company** of the information referred to above.

4 LIMITED DURATION TRANSMISSION ENTRY CAPACITY

4.1 Background

4.1.1 A **User,** who is party to a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** may make an **LDTEC Request** to **The Company** in accordance with this Paragraph of this Appendix 3.

4.1.2 A **User's Access Capacity** for any part of the **LDTEC Period** must not exceed its **Local Capacity Nomination**.

4.2 Form of LDTEC Request

4.2.1 An **LDTEC Request** must be received by **The Company** no later than:

(i) in cases where the requested **LDTEC Period** is 9 months or exceeds 9 months, 7 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(ii) in cases where the requested **LDTEC Period** is 6 months or exceeds 6 months but is less than 9 months, 5 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(iii) in cases where the requested **LDTEC Period** is 3 months or exceeds 3 months but is less than 6 months, 4 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(iv) in cases where the requested **LDTEC Period** is less than 3 months, 3 weeks and one **Business Day** before the start date for the **LDTEC Period.**

4.2.2 An **LDTEC Request** must be made by way of email to be sent to the email address specified in the **LDTEC Request Form** and confirmed by fax and must attach the **LDTEC Request Form** duly completed and signed on behalf of the **User**.

4.2.3. An **LDTEC Request** shall not be deemed received by **The Company** until the **LDTEC Request Fee** has been paid to **The Company** and until the faxed copy of the **LDTEC Request** is received in accordance with Paragraph 4.2.2 of this Appendix 3.

4.2.4 Each **LDTEC Request** must state whether it is for an **LDTEC Block Offer** only, an **LDTEC Indicative Block Offer** only or for both an **LDTEC Block Offer** and an **LDTEC Indicative Block Offer** and must specify one **LDTEC Period** only.

4.2.5. An **LDTEC Request** cannot be made prior to the start of the **Financial Year** to which it relates. The **LDTEC Request** must state the **LDTEC Period** and include the minimum and maximum level of MW for the **LDTEC Period** which, for the avoidance of doubt, must be the same for any **LDTEC Block Offer** and **LDTEC Indicative Block Offer** in the same **LDTEC Request**.

4.3 Assessment by The Company of LDTEC Requests

4.3.1 **The Company** may reject any **LDTEC Request** that is not made in accordance with the provisions of this Paragraph 4 of this Appendix 3.

4.3.2 **The Company** will assess **LDTEC Requests** and whether or not to make an **LDTEC Offer** at its absolute discretion.

4.3.3 Subject to Paragraphs 4.3.4 and 4.3.5 of this Appendix 3, **The Company** will start assessing an **LDTEC Request** no later than:

(i) in cases where the requested **LDTEC Period** is 9 months or exceeds 9 months, 7 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(ii) in cases where the requested **LDTEC Period** is 6 months or exceeds 6 months but is less than 9 months, 5 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(iii) in cases where the requested **LDTEC Period** is 3 months or exceeds 3 months but is less than 6 months, 4 weeks and one **Business Day** before the start date for the **LDTEC Period;**

(iv) in cases where the requested **LDTEC Period** is less than 3 months, 3 weeks and one **Business Day** before the start date for the **LDTEC Period.**

4.3.4 If **The Company** receives more than one **LDTEC Request** for an **LDTEC Period** or a request for a **Short Term Access Product** or a **TEC Increase Request** which **The Company** believes will impact on each other, **The Company** will assess such requests and the capacity available on the **GB Transmission System** on a first come first served basis such that the request received earliest in time by **The Company** (as recorded by **The Company**) will be considered first in terms of capacity available and then the request received next in time after that, and so on.

4.3.5 Where Paragraph 4.3.4 of this Appendix 3 applies and the **TEC Increase Request** was received before the **LDTEC Request The Company** shall be entitled to suspend the assessment and making of the **LDTEC Offer** in respect of such **LDTEC Request** as necessary to enable it to make an offer in respect of the **TEC Increase Request.**

4.3.6 Where the circumstances in Paragraph 4.3.5 of this Appendix 3 apply **The Company** shall as soon as practicable advise the **User** of such suspension giving an indication of the timescale for the **LDTEC Offer**. The

User shall be entitled to withdraw its **LDTEC Request** in such circumstances.

4.3.7 No priority will be given to any **Users** who have previously made successful requests for **Short Term Access Products**.

4.4 Notification by The Company

4.4.1 Each **User** confirms and agrees that **The Company** shall have no liability to it for any **LDTEC Offer** which **The Company** does not make in respect of an **LDTEC Request** in accordance with this Paragraph 4.4 of this Appendix 3.

4.4.2 **The Company** is not obliged to make an **LDTEC Offer** in respect of any **LDTEC Request** submitted.

4.4.3 An **LDTEC Offer** will only be made within the maximum and minimum range in MW submitted by the **User**.

4.4.4 **The Company** shall no later than seven days and one **Business Day** before the start date for the **LDTEC Period**, either make an **LDTEC Offer** in response to the **User's LDTEC Request** or notify such **User** that it does not intend to make an **LDTEC Offer** in respect of the **LDTEC Request**.

4.5 Charging, Invoicing and Payment

4.5.1 Each **User** must pay the **LDTEC Charge** even if the **User** does not use the corresponding **LDTEC**.

4.5.2 The provisions of Section 3 of the **CUSC** shall apply in respect of the **LDTEC Charge**.

4.5.3 The provisions of Section 6.6 of the **CUSC** shall apply in respect of payment of the **LDTEC Charge**.

4.6 LDTEC Offers

4.6.1 An **LDTEC Block Offer** shall:

(i) state the **LDTEC Profile** ;

(ii) include a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) which will detail the **LDTEC Profile**

and the **LDTEC Period** for which this applies; and

(iii) be open for acceptance by the **User** within one **Business Day** of receipt of the faxed copy of the **LDTEC Offer**.

4.6.2 An **LDTEC Indicative Block Offer** shall:

(i) state the **LDTEC Indicative Profile**;

(ii) include a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) which will detail the **LDTEC Indicative Profile** and the **LDTEC Period** for which this applies;

(iii) state the **Available LDTEC** for the first seven **LDTEC Weeks** within the **LDTEC Indicative Profile;** and

(iv) be open for acceptance by the **User** within one **Business Day** of receipt of the faxed copy of the **LDTEC Offer**.

4.6.3 Where the **LDTEC Offer** comprises both an **LDTEC Block Offer** and an **LDTEC Indicative Block Offer** a **User** may only accept one or the other but not both.

4.6.4 A **User** may accept an **LDTEC Block Offer** within one **Business Day** of receipt of the faxed copy of the **LDTEC Block Offer**. Acceptance of an **LDTEC Block Offer** shall be made by the **User** executing and faxing back the accepted **LDTEC Block Offer** in which the **User** shall have either confirmed acceptance of the **LDTEC Profile** in full or confirmed acceptance of the **LDTEC Profile** with a cap throughout the profile at a specific MW figure (not exceeding the maximum MW figure in the **LDTEC Profile**). An **LDTEC Block Offer** lapses if not accepted within such period.

4.6.5 A **User** may accept an **LDTEC Indicative Block Offer** within one **Business Day** of receipt of the faxed copy of the **LDTEC Indicative Block Offer**. Acceptance of an **LDTEC Indicative Block Offer** shall be made by the **User** accepting the **LDTEC Indicative Block Offer** in which the **User** shall have completed the **Requested LDTEC** figure in MW (which figure shall not exceed the

maximum level of MW in the **LDTEC Request**). An **LDTEC Indicative Block Offer** lapses if not accepted within such period.

Notification of weekly available LDTEC

4.6.6 Where **The Company** has made an **LDTEC indicative Block Offer** to a **User** and this has been accepted in accordance with Paragraph 4.6.5 of this Appendix 3 **The Company** will by 17.00 on the Friday prior to the eighth **LDTEC Week** and each subsequent Friday during the **LDTEC Period** send to the **User** by email an **LDTEC Availability Notification** which will state the **Available LDTEC** up to the **Requested LDTEC** for the **LDTEC Week** eight weeks ahead.

4.6.7 If the **User** accepts the **LDTEC Offer** made in accordance with Paragraph 4.6.4 or 4.6.5 of this Appendix 3, for the **LDTEC Period** Appendix C to the relevant **Bilateral Agreement** will be that accepted by the **User** in accordance with Paragraph 4.6.4 or 4.6.5 of this Appendix 3 as appropriate unless otherwise subsequently amended in accordance with such **Bilateral Agreement** or the **CUSC**. Upon expiry of the **LDTEC Period** such Appendix C as it relates to that **LDTEC** shall cease to have effect.

4.7 LDTEC reporting provisions

4.7.1 **The Company** may publish the following information in respect of **LDTEC Requests** which are accepted:-

1. details of the **LDTEC Period**;

2. maximum and minimum amount in MW requested;

3. identity of the **User**;

4. the **Connection Site** or site of **Connection**,

in such form and manner as shall be prescribed by **The Company** from time to time.

4.7.2 **The Company** may publish the following information in respect of **LDTEC Requests** which in either case are not withdrawn and for which no **LDTEC Offers** are made and **LDTEC Offers** which are not accepted:-

1. details of the **LDTEC Period**;

2. maximum and minimum amount in MW requested,

in such form and manner as shall be prescribed by **The Company** from time to time.

4.7.3 The **User** consents to the publication by **The Company** of the information referred to above.

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10. TEMPORARY TEC EXCHANGES

10.1 Background

10.1.1 Two **Users** that are party to a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** may make a **Temporary TEC Exchange** in accordance with this Paragraph of Appendix 3.

10.1.2 **Not Used**

10.1.3 **Not Used**

10.1.4 A **User' s Access Capacity** for any part of the period for which a **User** applies for **Temporary TEC Exchange Rate Request** must not exceed its **Local Capacity Nomination**.

10.2 Form of Temporary TEC Exchange Rate Request

10.2.1 A **Temporary TEC Exchange Rate Request** must be received by **The Company** no later than:

(i) in cases where the requested **Temporary TEC Exchange Period** is 9 months or more, 10 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(ii) in cases where the requested **Temporary TEC Exchange Period** is 6 months or more but is less than 9 months, 7 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(iii) in cases where the requested **Temporary TEC Exchange Period** is 3 months or more but is less than 6 months, 6 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(iv) in cases where the requested **Temporary TEC Exchange Period** is less than 3 months, 4 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period.**

10.2.2 A **Temporary TEC Exchange Rate Request** must be made by way of email to be sent to the email address specified in the **Temporary TEC Exchange Rate Request Form** and confirmed by fax and must attach the **Temporary TEC Exchange Rate Request Form** duly completed and signed by the **Joint Temporary TEC Exchange Users**.

10.2.3 A **Temporary TEC Exchange Rate Request** shall not be deemed received by **The Company** until the **Temporary TEC Exchange Rate Request Fee** has been paid to **The Company** and until the faxed copy of the **Temporary TEC Exchange Rate Request** is received in accordance with Paragraph 10.2.2 of Appendix to this Section 3 of the **CUSC**.

10.2.4 Each **Temporary TEC Exchange Rate Request** must state one **Temporary TEC Exchange Period** only. Each **Temporary TEC Exchange Rate Request** must be by reference to whole MW only.

10.2.5 A **Temporary TEC Exchange Rate Request** cannot be made prior to the start of the **Financial Year** to which it relates.

10.2.6 A **Temporary TEC Exchange Rate Request** cannot be made unless **The Company** has published within that **Financial Year** a **Temporary TEC Exchange Notification of Interest Form** from the **Temporary TEC Exchange Donor User**.

10.2.7 A **Temporary TEC Exchange Rate Request** can be withdrawn at any time upon written notice from the **Joint Temporary TEC Exchange Users**.

10.2.8 The **Temporary Donated TEC** stated in a **Temporary TEC Exchange Rate Request** shall not exceed the **Transmission Entry Capacity** of the **Temporary TEC Exchange Donor User**.

10.3 Assessment by The Company of Temporary TEC Exchange Rate Requests

10.3.1 **The Company** may reject any **Temporary TEC Exchange Rate Request** that is not made in accordance with the provisions of this Paragraph 10 of Appendix 3.

10.3.2 **The Company** will assess **Temporary TEC Exchange Rate Requests** and whether or not to grant **Temporary TEC Exchange Rate Requests** at its absolute discretion.

10.3.3 Subject to Paragraph 10.3.4 and 10.3.5 of Appendix 3, **The Company** will start assessing a **Temporary TEC Exchange Rate Request** no later than:

(i) in cases where the requested **Temporary TEC Exchange Period** is 9 months or more, 10 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(ii) in cases where the requested **Temporary TEC Exchange Period** is 6 months or more but is less than 9 months, 7 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(iii) in cases where the requested **Temporary TEC Exchange Period** is 3 months or more but is less than 6 months, 6 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period;**

(iv) in cases where the requested **Temporary TEC Exchange Period** is less than 3 months, 4 weeks and one **Business Day** before the start date for the **Temporary TEC Exchange Period.**

10.3.4 If **The Company** receives more than one **Temporary TEC Exchange Rate Request** for a **Temporary TEC Exchange Period** or a request for a **Short Term Access Product** ~~or a **TEC Increase Request**~~ which **The Company** believes will impact on one another, **The Company** will assess such requests and the capacity available on the **GB Transmission System** on a first come first served basis such that the request received earliest in time by **The Company** (as recorded by **The Company**) will be considered first in terms of capacity available and then the request received next in time after that, and so on.

10.3.5 Where under Paragraph 10.3.4 of this Appendix 3, **The Company** shall be entitled to suspend the assessment and making of the **Temporary TEC Exchange Rate Offer** in respect of such **Temporary TEC Exchange Rate Request** or the **LDTEC Offer** in respect of such **LDTEC Request** or the **STTEC Offer** in respect of such **STTEC Request** or the **Offer** in respect of such **TEC Increase Request.**

10.3.6 Where the circumstances in Paragraph 10.3.5 of this Appendix 3 apply **The Company** shall as soon as practicable advise the **Joint Temporary TEC Exchange Users** of such suspension giving an indication of the timescale for the **Temporary Exchange Rate Offer**. Where both **Joint Temporary TEC Exchange Users** agree, the **Temporary TEC Exchange Rate Request** can be withdrawn in such circumstances.

10.3.7 No priority will be given to any **Users** who have previously made successful requests for **Short Term Access Products**.

10.4 Notification by The Company

10.4.1 Each **User** confirms and agrees that **The Company** shall have no liability to it for any **Temporary TEC Exchange Rate Request** which **The Company** does not grant in accordance with this Paragraph 10 of this Appendix 3.

10.4.2 **The Company** is not obliged to grant any **Temporary TEC Exchange Rate Request** submitted.

10.4.3 Any **Temporary TEC Exchange Rate Request** will only be granted provided that during the **Temporary TEC Exchange Period** the **User's Access Capacity** does not exceed its **LCN**.

10.4.4 **The Company** shall no later than seven days and one **Business Day** before the start date for the **Temporary TEC Exchange Period**, by 17:00 on a **Business Day** either make an **Temporary TEC Exchange Rate Offer** in response to the **Temporary TEC Exchange Rate Request** or notify the **Joint Temporary TEC Exchange Users** that it does not intend to grant a **Temporary TEC Exchange Rate Request**.

10.5 Charging, Invoicing and Payment

Each **Temporary TEC Exchange Recipient User** must pay the **LDTEC Charge** in respect of the **Temporary Received TEC** even if the **User** does not use the corresponding **Temporary Received TEC**.

10.6 Temporary TEC Exchange Rate Offers

10.6.1 A **Temporary TEC Exchange Rate Offer** shall:

(i) be made to both the **Temporary TEC Exchange Donor User** and the **Temporary TEC Exchange Recipient User** and state the **Temporary Donated TEC** and **Temporary TEC Exchange Rate**;

(ii) include in the offer sent to the **Temporary TEC Exchange Donor User** a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) of the **Temporary TEC Exchange Donor User** which will detail the **Temporary Donated TEC** and

the **Temporary TEC Exchange Period** for which this applies;

(iiii) include in the offer sent to the Te**mporary TEC Exchange Recipient User** a revised Appendix C to the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** (as appropriate) of the **Temporary TEC Exchange Recipient User** which will detail the **Temporary Received TEC** and the **Temporary TEC Exchange Period** for which this applies; and

(iv) be open for acceptance by receipt of the faxed copy of the **Temporary TEC Exchange Rate Offer** up to 17:00 the following **Business Day**.

10.6.2 A **Temporary TEC Exchange Rate Offer** must be accepted by both the **Joint Temporary TEC Exchange Users** within the timescales in Paragraph 10.6.1(iv) of this Appendix 3. Acceptance of a **Temporary TEC Exchange Rate Offer** shall be made by executing and faxing back the accepted **Temporary TEC Exchange Rate Offer**. A **Temporary TEC Exchange Rate Offer** lapses if not accepted by both **Temporary TEC Exchange Users** within such period.

10.6.3 If the **Temporary TEC Exchange Rate Offer** is accepted in accordance with Paragraph 10.6.1 of this Appendix 3, for the **Temporary TEC Exchange Period** Appendix C to the relevant **Bilateral Agreements** will be that accepted by the **Joint Temporary TEC Exchange Users**, unless otherwise subsequently amended in accordance with such **Bilateral Agreement** or the **CUSC**. Upon expiry of the **Temporary TEC Exchange Period** such Appendix C as it relates to that **Temporary TEC Exchange Period** shall cease to have effect.

10.7 Temporary TEC Exchange reporting and information provisions

10.7.1 **The Company** may publish the following information in respect of **Temporary TEC Exchange Rate Offers** which are accepted:-

1. details of the **Temporary TEC Exchange Period**;

2. details of the **Temporary Donated TEC** and **Temporary Received TEC**;

3. the identity of the **Temporary TEC Exchange Donor User** and the **Temporary TEC Exchange Recipient User**;

4. the **Connection Site** or site of **Connection**,

in such form and manner as shall be prescribed by **The Company** from time to time.

10.7.2 **The Company** may publish the following information in respect of **Temporary TEC Exchange Rate Offers** which are made are not accepted:-

1. details of the **Temporary TEC Exchange Period**;

2. details of the **Temporary Donated TEC** and **Temporary Received TEC**;

3. the identity of the **Temporary TEC Exchange Donor User**;

4. the **Connection Site** or site of **Connection**,

in such form and manner as shall be prescribed by **The Company** from time to time.

10.7.3 **The Company** may publish the following information in respect of **Temporary TEC Exchange Rate Offers** not made:-

1. details of the **Temporary TEC Exchange Period**;

2. details of the **Temporary Donated TEC**;

3. the identity of the **Temporary TEC Exchange Donor User**;

4. the **Connection Site** or site of **Connection**,

in such form and manner as shall be prescribed by **The Company** from time to time.

10.7.4 The **Temporary TEC Exchange Donor User** and the **Temporary TEC Exchange Recipient User** consent to the publication by **The Company** of the information referred to above.

10.7.5 A **User** may also from time to time request that **The Company** advise other **Users** that such **User** is interested in making a **Temporary TEC Exchange**. Such request must be sent by email and a fax copy made using the **Temporary TEC Exchange Notification of Interest Form**.

10.7.6 **The Company** shall publish such **Temporary TEC Exchange Notification of Interest Form** on its **TEC Register** within 10 **Business Days** of its receipt.

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END OF APPENDIX 3

CUSC - SECTION 5

EVENTS OF DEFAULT, DEENERGISATION, AND DISCONNECTION

CONTENTS

CUSC - Section 5

Events of Default, Deenergisation, Disconnection and Decommissioning

5.1 DURATION AND TERMINATION

5.1.1 Licensed **CUSC Parties**

Upon either:

(a) termination of all **Bilateral Agreements**, **Mandatory Services Agreements** and **Construction Agreements** entered into by a **User** and cessation of any other right to use the **GB Transmission System** pursuant to Paragraph 3.8 or Paragraph 9.23; or

(b) a **User** having a **Licence** but not yet being connected to or otherwise using the **GB Transmission System**, until such time as the **User** accepts an **Offer** to connect to or use the **GB Transmission System**,

a **User** with a **Licence** shall be or continue to be a **CUSC Party** but shall not (except in the case of Paragraph 5.1.5) have any further rights and obligations for the period of such dormancy under the **CUSC** (and shall be a "**Dormant CUSC Party**") until the execution (or other entering into) of a **Bilateral Agreement** or commencement / recommencement of its right to use the **GB Transmission System** pursuant to the **CUSC**. Termination or expiry of a particular **Bilateral Agreement**, **Mandatory Services Agreement** or **Construction Agreement** shall not, of itself, cause the relevant **User** to become a **Dormant CUSC Party**.

5.1.2 A **Dormant CUSC Party** may once it ceases to have a **Licence** which requires it to be a party to the **CUSC Framework Agreement**, by prior notice to **The Company** cease to be a **CUSC Party** from the date specified in such notice, on which date it shall cease to be a party to the **CUSC Framework Agreement**.

5.1.3 Non-Licensed **CUSC Parties**

Upon termination of all **Bilateral Agreements**, **Mandatory Services Agreements** and **Construction Agreements** entered into by a **User** and cessation of any other right to use the **GB Transmission System** pursuant to Paragraph 3.8 or Paragraph 9.23, a **User** without a **Licence** shall cease to be a

CUSC Party from the date of cessation of the last such agreement or right to use, and shall on that date cease to be a party to the **CUSC Framework Agreement**.

5.1.4 A person ceasing to be a **CUSC Party** or becoming a **Dormant CUSC Party** shall not affect any rights or obligations of any **CUSC Party** which may have accrued to the date of termination or dormancy under the **CUSC**, any **Bilateral Agreement** or **Mandatory Services Agreement** or **Construction Agreement** or the **Charging Statements** or otherwise and shall not affect any continuing obligations of any other **CUSC Party** under the **CUSC**.

5.1.5 **Embedded Exemptable Large Power Station**

A **User** in respect of an **Embedded Exemptable Large Power Station** shall (unless **The Company** agrees otherwise in writing, such agreement not to be unreasonably withheld or delayed), once it has acceded to the **CUSC Framework Agreement** continue to remain a **CUSC Party** and shall not be treated as a **Dormant CUSC Party** notwithstanding the provisions of Paragraph 5.1.1.

5.2 EMERGENCY DEENERGISATION

5.2.1 Emergency Deenergisation by The Company

If, in the reasonable opinion of **The Company**, the condition or manner of operation of the **GB Transmission System** or a **User's System** or an **Interconnector** poses an immediate threat of injury or material damage to any person or to the **Total System** or to any **User's System** or to the **GB Transmission System, The Company** shall have the right to:

(a) **Deenergise** that **User's Equipment**, or

(b) request the owner of the **Distribution System** to which that **User's Equipment** or equipment for which that **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is connected to **Deenergise** that **User's Equipment** or equipment for which that **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**),

if it is necessary or expedient to do so to avoid the occurrence of such injury or damage.

5.2.2 Emergency Deenergisation by a User

If, in the reasonable opinion of a **User**, the condition or manner of operation of the **GB Transmission System**, the **Total**

System or any other **User's System** poses an immediate threat of injury or material damage to any person or to its **User's System** or **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) that **User** shall have the right to **Deenergise** its **User's Equipment** or equipment for which that **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**), if it is necessary or expedient to do so to avoid the occurrence of such injury or damage.

5.2.3 Post Emergency Reenergisation

The Company or, as the case may be, the **User** shall **Reenergise** the **User's Equipment** at the **Connection Site** (or, in the case of the **User** the site of connection) or **The Company** shall request the owner/operator of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is connected to **Reenergise** the **User's Equipment** at the site of connection, in each case as quickly as practicable after the circumstances leading to any **Deenergisation** under this Paragraph 5.2 have ceased to exist.

5.3 GENERIC EVENTS OF DEFAULT AND DEENERGISATION

5.3.1 Generic Events of Default

It shall be an **Event of Default** if:-

(a) a **User** shall fail to pay (other than by inadvertent error in funds transmission which is discovered by **The Company**, notified to that **User** and corrected within 2 **Business Days** thereafter) any amount properly due or owing from that **User** to **The Company** pursuant to the **CUSC** or any **Bilateral Agreement** and such failure continues unremedied for 7 **Business Days** after the due date for payment; or

(b) in respect of a **User**:-

(i) an order of the High Court in England and Wales or an order of the Court of Session in Scotland is made or an effective resolution passed for its insolvent winding up or dissolution; or

(ii) a receiver (which expression shall include an administrative receiver within the meaning of section 251 Insolvency Act 1986) of the whole

or any material part of its assets or undertaking is appointed; or

(iii) an administration order under section 8 of the Insolvency Act 1986 is made or if a voluntary arrangement is proposed under section 1 of that Act; or

(iv) a **User** enters into any scheme of arrangement (other than for the purpose of reconstruction or amalgamation upon terms and within such period as may previously have been approved in writing by the **Authority**); or

(v) any of the events referred to in (i) to (iv) above has occurred and is continuing and a **User** is unable to pay its debts (within the meaning of section 123(l) or (2) of the Insolvency Act 1986 save that such sections shall have effect as if for £750 there was inserted £250,000 and a **User** shall not be deemed to be unable to pay its debts if any demand for payment is being contested in good faith by that **User** with recourse to all appropriate measures and procedures),

and in any such case within 28 days of his appointment the liquidator, receiver, administrative receiver, administrator, nominee or other similar officer has not provided to **The Company** a guarantee of future performance by the **User** of the **CUSC** and all **Bilateral Agreements, Construction Agreements** and **Mandatory Services Agreements** to which the **User** is a party in such form and amount as **The Company** may reasonably require.

5.3.2 Generic Deenergisation upon an Event of Default

Provided that at the time the failure specified in Paragraph 5.3.1(a) is still continuing or the circumstances referred to in Paragraph 5.3.1(b) still exist **The Company** may having given 48 hours notice of an **Event of Default Deenergise** all of the **User's Equipment** which is the subject of a **Bilateral Agreement** with that **User** or may as appropriate instruct the operator of a **Distribution System** to **Deenergise** such **User's Equipment** or in the case of an **Interconnector User** or **Interconnector Error Administrator** request the relevant **Interconnector Owner** to cease or procure the cessation of the transport of power across the **Interconnector** by or on behalf of that **User** provided that prior to **Deenergisation** the

User may refer the matter to the **Dispute Resolution Procedure**.

5.3.3 BSC Deenergisation

The Company shall **Deenergise** the **User's Equipment** if it is so instructed by the **BSC Panel** at any time in accordance with the provisions of the **Balancing and Settlement Code**.

5.3.4 Generic Disconnection

If the **Event of Default** under Paragraph 5.3.2 or 5.3.3 is still continuing six months after the later of **Deenergisation** and the conclusion of the **Dispute Resolution Procedure** in favour of **The Company**, **The Company** may **Disconnect** all that **User's Equipment** at each **Connection Site** where that **User's Equipment** is connected and:-

(a) the **User** shall remove any of the **User's Equipment** on, in the case of **Connection Sites** in England and Wales, **The Company's** or, in the case of **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land(as appropriate) within 6 months or such longer period as may be agreed between the **User** and **The Company** or the **Relevant Transmission Licensee** (as appropriate);

(b) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any of the **Transmission Connection Assets** on the **User's** land within 6 months or such longer period as may be agreed between the **User** and **The Company** or the **Relevant Transmission Licensee** (as appropriate);

(c) the **User** shall pay to **The Company** forthwith all **Termination Amounts** and the **TEC Cancellation Charge**; and

(d) the **User** if unlicensed shall cease to be a **CUSC Party** or if licensed shall become a **Dormant CUSC Party**, as the case may be, and Paragraph 5.1 shall apply.

5.4 SITE SPECIFIC DEENERGISATION AND DISCONNECTION

5.4.1 Site Specific Breach by the User

If a **User** shall be in breach of any of the provisions of the relevant **Bilateral Agreement**, or the provision of the **CUSC** in

relation to that particular connection to and/or use of the **GB Transmission System**, or (other than in relation to a **Supplier**, a **Small Power Station Trading Party**, an **Interconnector User** or an **Interconnector Error Administrator**) of the provisions of the **CUSC** enforcing the provisions of the **Grid Code** (but subject always to Paragraphs 6.3.3 and 6.3.4), and such breach causes or can reasonably be expected to cause a material adverse effect on the business or condition of **The Company** or other **User**s or the **GB Transmission System** or any **User Systems** then **The Company** may:-

(a) where the breach is capable of remedy, give written notice to the **User** specifying in reasonable detail the nature of the breach and requiring the **User** within 28 days after receipt of such notice, or within any longer period agreed between **The Company** and the **User** to remedy the breach, the agreement of **The Company** not to be unreasonably withheld or delayed; or

(b) where the breach is incapable of remedy, give written notice to the **User** specifying in reasonable detail the nature of the breach and the reasons why the breach is incapable of remedy and requiring the **User** within 5 **Business Days** after receipt of such notice to undertake to **The Company** not to repeat the breach.

5.4.2 Grid Code Procedures - Future Compliance

Whenever **The Company** serves a notice on a **User** pursuant to Paragraph 5.4.1, **The Company** and the **User** shall discuss in good faith and without delay the nature of the breach and each shall use all appropriate procedures available to it under the **Grid Code** (including testing rights and the procedures set out in **OC5** (Testing and Monitoring)) in an attempt to establish as quickly as reasonably practicable a mutually acceptable way of ensuring future compliance by the **User** with the relevant provision of the **Grid Code**.

5.4.3 Site Specific Deenergisation

(a) If:

(i) a **User** fails to comply with any valid notice served on it by **The Company** in accordance with Paragraph 5.4.1(a) or is in breach of any undertaking given in accordance with Paragraph 5.4.1(b) and such breach causes or can be reasonably expected to cause a material adverse effect on the business or condition of **The Company** or other **Users** or

the **GB Transmission System** or any **User System**; or

(ii) five **Business Days** have elapsed since the date of any valid notice served on the **User** in accordance with Paragraph 5.4.1(b) and no undertaking is given by the **User** in accordance with Paragraph 5.4.1(b);

The Company may:

(iii) provided **The Company** has first complied with **OC5** Monitoring and Testing if appropriate **Deenergise** the **User's Equipment**; or

(iv) provided **The Company** has first complied with **OC5** Monitoring and Testing if appropriate request the owner/operator of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is or to which the **User's Customers** are connected to **Deenergise** the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at the relevant site of connection or such **User's Customers** (as the case may be); or

(v) in the case of an **Interconnector User** or **Interconnector Error Administrator** request the relevant **Interconnector Owner** to cease or procure the cessation of the transport of power by or on behalf of that **User** across the **Interconnector**,

upon the expiry of at least 48 hours prior written notice to the **User**, provided that at the time of expiry of such notice the breach concerned remains unremedied and that neither party has referred the matter to the **Dispute Resolution Procedure**. In such event **The Company** may:

(aa) **Deenergise** the **User's Equipment**, or

(bb) request the owner of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is or to which the **User's Customers** are

connected to **Deenergise** the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at the relevant site of connection or the **User's Customers** (as the case may be), or

(cc) in the case of an **Interconnector User** or **Interconnector Error Administrator** request the relevant **Interconnector Owner** to cease or to procure the cessation of the transfer of power by or on behalf of that **User** across the **Interconnector**,

forthwith following completion of the **Dispute Resolution Procedure** and final determination of the dispute in **The Company's** favour, subject to **The Company** having given, in the case of **Deenergisation** of an **Embedded Small Power Station**, the relevant **User** not less than 24 hours prior written notice and at the expiry of such notice the breach concerned remaining unremedied.

(b) If the **User** fails to comply with the **Grid Code** (but subject always to Paragraphs 6.3.3 and 6.3.4 of the **CUSC**) and the **Authority** makes a final order or a confirmed provisional order as set out in sections 25 and 26 of the **Act** against the **User** in respect of such non-compliance which order the **User** breaches **The Company** may in respect of the relevant **Connection Site(s**) or site(s) of connection:

(i) **Deenergise** the **User's Equipment**, or

(ii) request the owner of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is connected to **Deenergise** the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**),

upon the expiry of at least 48 hours prior written notice to the **User** provided that at the time of expiry of the notice the **User** continues to fail to comply with the order.

5.4.4 Consequence on Transmission Licence

If a breach of the nature referred to in Paragraph 5.4.1 continues to the extent that it places or seriously threatens to place in the immediate future **The Company** in breach of the **Transmission Licence** and\or places or seriously threatens to place in the immediate future any **Relevant Transmission Licensee** in breach of its transmission licence **The Company** may:

(a) **Deenergise** the **User's Equipment**, at the relevant **Connection Site**,

(b) request the owner of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is or to which the **User's Customers** are connected to **Deenergise** the **User's Equipment** or equipment for which **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at the relevant site of connection or such **User's Customer** (as the case may be), or

(c) request the relevant **Interconnector Owner** to cease or procure the cessation of the transport of power by or on behalf of that **User** across the **Interconnector**,

upon the expiry of at least 12 hours, prior written notice to the **User**, provided that at the time of expiry of such notice the breach concerned remains unremedied.

5.4.5 Generic and Site Specific Reenergisation Disputes

(a) If following any **Deenergisation** or cessation of use of an **Interconnector** pursuant to this Paragraph 5.4 or Paragraph 5.3.2 the relevant **User** applies to **The Company** for the **User's Equipment** to be **Reenergised** or for **The Company** to issue instructions that the **User's Customers** be **Re-energised** or for **The Company** to issue instructions to the owner/operator of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is connected that it be **Re-energised** or to the relevant **Interconnector Owner** that transport of power across the **Interconnector** can restart, **The Company** shall notify its consent to the **User's Equipment** being **Re-energised** or transport across the **Interconnector**

restarting forthwith upon the breach of the **CUSC** or the relevant **Bilateral Agreement** which give rise to the **De-energisation** either:-

(i) being remedied; or

(ii) ceasing to be material; or

(iii) in the case of a **De-energisation** under 5.4.3 ceasing to be of a nature which can reasonably be expected to cause a material adverse effect on the business or condition of **The Company** or other **Users** of the **GB Transmission System**; or

(iv) in the case of a **De-energisation** under Paragraph 5.4.4 ceasing in **The Company's** opinion to place or seriously threaten to place in the immediate future **The Company** in material breach of the **Transmission Licence** and\or places or seriously threatens to place in the immediate future any **Relevant Transmission Licensee** in material breach of its transmission licence,

and shall forthwith **Re-energise** the **User's Equipment** or issue instructions.

(b) If **The Company** shall refuse to **Re-energise** the **Users Equipment** or to issue instructions that the **User's Customers** be **Reenergised** or to issue instructions to the owner/operator of the **Distribution System** to which the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is connected that it be **Reenergised**, or to the relevant **Interconnector Owner** that transport of power can restart, or if the **User** is offered terms by **The Company** which the **User** does not accept, this shall be recognised as a dispute over the terms for connection and use of system which may be referred by the **User** to the **Authority** for determination under Standard Condition C9 of the **Transmission Licence**. If the **User** accepts any terms offered by **The Company** or determined by the **Authority The Company** shall **Reenergise** the **Users Equipment**, or request the owner of the **Distribution System** to which either the **User's Customers** or the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) is/are connected to **Reenergise**

the same or the relevant **Interconnector Owner** to restart that transport of power, forthwith after any request from the **User** for **The Company** to do so.

5.4.6 Specific Events of Default

Events of Default

5.4.6.1 Any of the following events shall constitute an **Event of Default**:

(a) If the breach which led to any **Deenergisation** pursuant to this Paragraph 5.4 remains unremedied at the expiry of at least 6 months after the date of such **Deenergisation**, **The Company** may declare by notice in writing to the **User** that such breach has become an **Event of Default** provided that:

(i) all disputes arising out of the subject-matter of this Paragraph 5.4 which are referred to the **Dispute Resolution Procedure** have been finally determined in favour of **The Company**; and

(ii) any reference to the **Authority** pursuant to Paragraph 5.4.5(b) hereof has then been finally determined in favour of **The Company** or any terms settled pursuant to such procedure have not been accepted by the **User**.

(b) If any or all of the **Events of Default** in Paragraph 5.3.1 has or have occurred.

Security Event of Default - User Meets The Company Credit Rating

5.4.6.2 In the case where a **User** meets **The Company Credit Rating** on signing a **Bilateral Connection Agreement** any of the following events shall constitute an **Event of Default**:-

(a) If the **User** fails to provide or procure that there is provided to **The Company** within the requisite time any relevant security satisfactory to **The Company** pursuant to Part III of Section 2 or Paragraph 5.4.6.2(c) of the **CUSC**.

(b) If having provided security satisfactory to **The Company** pursuant to Part III of Section 2 and Paragraph 5.4.6.2(c) of the **CUSC**:

(i) the **User** or any shareholder (whether direct or indirect) of the **User** or any other party who may at any time be providing security to **The Company** pursuant to the requirements of the **CUSC** (or the relevant **Bilateral Connection Agreement**) takes any action whether by way of proceedings or otherwise designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount so secured whether or not there shall be a dispute between the parties;

(ii) any party who may at any time be providing security to **The Company** pursuant to the provisions of the **CUSC** (or the relevant **Bilateral Connection Agreement**) fails to pay to **The Company** any sum demanded pursuant thereto.

(c) (i) There is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any sums due or to become due to **The Company** within the next following period of 12 months, in terms of or on termination of the relevant **Bilateral Connection Agreements**; or

(ii) an event of default has occurred under any banking arrangements (as may be more particularly described in the relevant **Bilateral Connection Agreement**) (an event of default being for these purposes anything defined as such in such banking arrangements) put in place by the **User** in connection with a project for which security under this **CUSC** is required by **The Company** and as a result the banks

who are party to such banking arrangement have taken steps to declare the principal of the advances under such arrangement immediately due and payable; or

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal outstanding amount of not less than £1,000,000 (pounds sterling one million) or such greater figure specified in any **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or re-financed by the **User** within a period of 28 days following the date upon which it was so declared due and payable,

and in any of (i) or (ii) or (iii) the **User** fails, within a period of 7 (seven) days following the date on which **The Company** gives the **User** notice in writing of one or other of the above events occurring to provide **The Company** with such security as **The Company** shall require to cover the **User's** payment obligations to **The Company** arising in the event of or which have arisen prior to termination of the relevant **Bilateral Connection Agreement** and which arise under the **CUSC**. The security to be provided shall be in a form satisfactory to **The Company** in accordance with its then current policy and procedures and in such amount as **The Company** shall specify to the **User** in the aforesaid notice.

Provided that (in relation to Paragraphs (i) or (ii) or (iii) above) if at any time after the putting in place of security under this Paragraph the **User** shall produce to **The Company** evidence to **The Company's** reasonable satisfaction that there is not a substantial probability of the **User** not being able to make payment to **The Company** of such sums within the next following period of twelve (12) months, **The Company** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to require security at any time thereafter in the event of

any of the circumstances set out in Paragraph (i) and/or (ii) and/or (iii) subsequently occurring.

Security Event of Default - User Does Not Meet The Company Credit Rating

5.4.6.3 In the case where a **User** does not meet **The Company Credit Rating** on signing a **Bilateral Connection Agreement** any of the following events shall constitute an **Event of Default**:-

(a) (i) There is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any unsecured sums due or to become due to **The Company** within the next period of 12 months, in terms of or on termination of the relevant **Bilateral Connection Agreements**; or

(ii) an event of default has occurred under any banking arrangements (as may be more particularly described in the relevant **Bilateral Connection Agreement**), (an event of default being for these purposes anything defined as such in such banking arrangements) put in place by the **User** in connection with a project for which security under this **CUSC** is required by **The Company** and as a result the banks who are party to such banking arrangement have taken steps to declare the principal of the advances under such arrangement immediately due and payable; or

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal outstanding amount of not less than £1,000,000 (pounds sterling one million) or such greater amount specified in any **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the

User and the amount in question has not been paid by the **User** or refinanced by the **User** within a period of 28 days following the date upon which it was so declared due and payable.

And in any one of (i) or (ii) or (iii) the **User** fails:-

(aa) within a period of 14 (fourteen) days following the date on which **The Company** gives notice of such circumstances to provide to **The Company** a cash deposit in a **Bank Account**, a **Performance Bond** or a **Letter of Credit** in favour of **The Company** and **Valid** at least up to the last day of the **Financial Year** in which the event occurs for such amount representing **The Company's** reasonable estimate of all unsecured sums to become due to **The Company** in the period up to the end of the **Financial Year** in which the event occurs such sum to be specified in the said notice; or

(bb) to subsequently provide such cash deposit or renew such **Performance Bond** or **Letter of Credit** (or such renewed **Performance Bond** or **Letter of Credit** provided under this paragraph) not less than 45 days prior to its stated expiry date for such amount representing **The Company's** reasonable estimate of the unsecured sums to become due to **The Company** in the next following **Financial Year** valid at least up to the last day of the next following **Financial Year** and to continue the provision of cash deposit, a **Performance Bond** or **Letter of Credit** in a similar manner, to such estimate of unsecured sums.

Provided that regarding any one of (i) or (ii) or (iii) if at any time after the putting in place of security under this Paragraph 5.4.6.3(a) the **User** shall provide to **The Company** evidence to **The Company's** reasonable satisfaction that

there is not a substantial probability of the **User** being unable to make payment to **The Company** of any unsecured sums within the next following period of twelve (12) months, **The Company** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to require security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii) and/or (iii) in this Paragraph 5.4.6.3(a) subsequently occurring.

(b) If the **User** fails to provide or procure that there is provided to **The Company** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required under Part III of Section 2 or Paragraph 5.4.6.3(a) or to renew or revise such security or to substitute any security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required or if the **User** is otherwise in breach of any of its obligations under Paragraph 2.22.

(c) If the **User** or any shareholder (whether direct or indirect) of the **User** takes any action whether by way of proceedings or otherwise designed or calculated to prevent restrict or interfere with the payment to **The Company** of any amount so secured or seeks or permits or assists others to do so, whether or not there shall be a dispute between the parties.

(d) If any party who may at any time be providing or holding security in favour of **The Company** pursuant to Part III of Section 2 or Paragraph 5.4.6.3(a) fails to pay **The Company** any sum demanded in any **Notice of Drawing** pursuant thereto.

5.4.7 Specific Event of Default Disconnection

Once **The Company** has given a valid notice of an event of default pursuant to Paragraph 5.4.6 provided that the **Event of Default** is continuing **The Company** may give notice of termination to that **User** whereupon the relevant **Bilateral Agreement** or right to use the system shall terminate and:

(a) **The Company** shall in relation to such an **Event of Default** of a **User** in relation to a **Connection Site:**

(i) **Disconnect** all the **User's Equipment** at the **Connection Site;** and

(ii) the **User** concerned shall remove any of the **User's Equipment** on, in the case of **Connection Sites** in England and Wales, **The Company's** or, in the case of **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land (as appropriate) within six (6) months of the date of termination or such longer period as may be agreed between **The Company** or the **Relevant Transmission Licensee** (as appropriate) and the relevant **User;** and

(iii) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any of the **Transmission Connection Assets** on the land of the **User** concerned within 6 months or such longer period as may be agreed between the **User** and **The Company** or the **Relevant Transmission Licensee** (as appropriate).

Such **User** shall (notwithstanding any longer time for payment which but for such termination the **User** may have for payment pursuant to the **CUSC** or the relevant **Bilateral Agreement**) within 14 days from the date of termination pay to **The Company** all amounts due and owing on the date of such termination and be liable to pay to **The Company Termination Amounts** and the **TEC Cancellation Charge** applicable to the **Connection Site**, such payments to be made within 14 days of the date of **The Company's** invoice(s) in respect thereof;

(b) (i) **The Company** shall request the owner of any **Distribution System** to which the **User** is connected to **Disconnect** all the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at the site of connection;

(ii) **The Company** shall in relation to such an event of default of a **User** acting as a **Supplier** request the owner of the **Distribution System** to which any of that **User's Customer's** are connected to **Disconnect** such **User's Customer's**;

(iii) **The Company** shall in relation to such an **Event of Default** of a **User** acting as an **Interconnector User** or **Interconnector Error Administrator** request the relevant **Interconnector Owner** to cease or procure the cessation of the transfer of power across the **Interconnector** by or on behalf of that **Interconnector User**; and

the **User** shall be obliged to pay to **The Company** forthwith the **Use of System Charges** due under the **CUSC** or the relevant **Bilateral Agreement** up to the end of the **Financial Year** in which **Termination** occurs and also, in the case of a **Bilateral Embedded Generation Agreement,** the **TEC Cancellation Charge**.

5.5 BALANCING SERVICES USE OF SYSTEM CHARGES: EVENTS OF DEFAULT

5.5.1 Breaches

Notwithstanding any other provisions of this Paragraph 5.5 and/or Paragraph 5.3 of the **CUSC**, in relation to the payment of the **Balancing Services Use of System Charges** the following shall constitute breaches under the **CUSC** and/or the relevant **Bilateral Agreement**:-

(a) the **User** in question shall fail to provide or maintain or renew in accordance with Paragraph 3.21 or Paragraph 9.22.3 (as appropriate) the requisite amount of **Security Cover**; or

(b) the **User** shall fail to pay any sum payable by the **User** in respect of **Balancing Services Use of System Charges** to **The Company** within 3 **Business Days** of its due date; or

(c) an event of default under Paragraph 5.3.1(b) of the **CUSC** has occurred provided always that the final Paragraph of Paragraph 5.3.1(b) of the **CUSC** referring to the provision of guarantees shall not apply.

5.5.2 Events of Default

Forthwith upon the occurrence of any of the breaches specified in Paragraph 5.5.1 then notwithstanding any other provisions of the **CUSC** or of any **Bilateral Agreement** to which the **User** is a party, and in addition to any rights it may have under the terms of the **CUSC**, **The Company** may upon reaching a bona fide conclusion that the reason for the failure by the **User** under Paragraph 5.5.1 is other than an administrative or banking error (having taken into account representations if any of the **User** made within 24 hours after the request therefor is made to the **User** by **The Company**, which request **The Company** shall be obliged to make) by notice to the **User** declare such breach an event of default.

5.5.3 Deenergisation by User

If **The Company** declares an **Event of Default** under Paragraph 5.5.2 the **User** shall forthwith and in compliance with the instructions of **The Company** or (in the case of any connection to a **User System**) the owner of the **User System** to which the **User's Customers** are connected, **Deenergise** itself and/or its **Customers** or in the case of a **User** acting as an **Interconnector User** or **Interconnector Error Administrator** cease or procure the cessation of the transport of power by or on behalf of that **User** across the **Interconnector** as the case may be.

5.5.4 Deenergisation by The Company/User System Owner

If the **User** shall fail to take such action as is referred to in Paragraph 5.5.3 within 48 hours after the date of any such notice referred to therein **The Company** shall be entitled to:-

(a) request the owner of the **User System** to which the **User's Customers** and/or the **User** are connected, to **Deenergise** the **User's Customers** and/or the **User** (as the case may be) and to use all reasonable endeavours to effect or (as the case may be) give instructions to give effect to such **De-energisation** as quickly as practicable having regard to all the circumstances affecting such **De-energisation** (including any operational difficulties and relevant **Licence** duties); and/or

(b) **Deenergise** the **User's Equipment** or equipment for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**) at any **Connection Site(s)** which serves only the **User** or a customer of the **User**; and/or

(c) where the **User** is an **Interconnector User** request the relevant **Interconnector Owner** to cease or procure the cessation of the transfer of power by or on behalf of the **User** across the **Interconnector**.

5.5.5 BSUoS Event of Default

5.5.5.1 **The Company** may terminate the relevant **Bilateral Agreement** and all others to which the **User** is a party and revoke the **Use of System Supply Confirmation Notice** and **Use of System Interconnector Confirmation Notice** forthwith by notice to the **User** if:-

(a) **The Company** has given a valid notice of default pursuant to Paragraph 5.5.2; and

(b) such event of default remains unremedied at the expiry of the later of:-

(i) the period of 6 months from the date of such notice; and

(ii) where the **User** disputes bona fide the event of default and has promptly brought and is actively pursuing proceedings against **The Company** to determine the dispute, the date on which the dispute is resolved or determined.

Upon termination pursuant to this Paragraph the **User** shall pay to **The Company** the **Termination Amounts** calculated in accordance with the **Charging Statements** and the **TEC Cancellation Charge** and shall disconnect all the **User's Equipment** at the **Connection Site** and:

aa) the **User** concerned shall remove any of the **User's Equipment** on, in the case of **Connection Sites** in England and Wales, **The Company's** or, in the case of **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land (as appropriate) within 6 months of the date of termination or such longer period as may be agreed between **The**

Company or the **Relevant Transmission Licensee** (as appropriate) and the **User**; and

bb) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any of the **Transmission Connection Assets** on the land of the **User** concerned within 6 months or such longer period as may be agreed between the **User** and **The Company** or the **Relevant Transmission Licensee** (as appropriate); and

cc) the provisions of Paragraph 5.4.7 shall apply *mutatis mutandis*.

5.5.5.2 The service of a notice under Paragraph 5.5.5.1 and/or the expiry of a notice given under Paragraph 5.6 shall not relieve the **User** of its obligation under Paragraph 3.9.3 or Paragraph 9.10 or any **Bilateral Agreement** to which the **User** is a party to pay any outstanding **Balancing Services Use of System Charges** in respect of any **Settlement Day** which fell prior to the issue or expiry of (as the case may be) such a notice but for which the **Payment Date** fell after the date of the termination of the relevant **Bilateral Agreement** (or use of system not subject to a **Bilateral Agreement**).

5.6 NOTICE TO DISCONNECT

Without prejudice to Paragraph 5.2.2, each **User** shall, as between **The Company** and that **User**, give to **The Company** not less than 6 months written notice of any intention of the **User** to **Disconnect** the **User's Equipment**.

5.7 DISCONNECTION

5.7.1 If notice to **Disconnect** is given by the **User** under Paragraph 5.6 hereof the **User** may upon expiry of the period specified in such notice and not before **Disconnect** the **User's Equipment.** At the expiry of such period the relevant **Bilateral Agreement** shall terminate and the following provisions shall apply.

5.7.2 The **User** shall be liable forthwith on the date the relevant **Bilateral Agreement** so terminates to pay to **The Company**:-

(a) **Connection Charges** and/or **Use of System Charges** to the end of the **Financial Year** in which termination occurs all such charges becoming immediately due and

payable upon the termination of the relevant **Bilateral Agreement**; and

(b) **Termination Amounts** applicable to the **Connection Site**; and

(c) the **TEC Cancellation Charge**

such payments to be made within 28 (twenty eight) days of the date of **The Company 's** invoice in respect thereof.

5.7.3 Within 6 months of the date of such termination or such longer period as may be agreed between **The Company** and the **User** in the case of **Connection Sites** in England and Wales, and\or between the **Relevant Transmission Licensee** and the **User** in the case of **Connection Sites** in Scotland:

(a) the **User** shall remove any of the **User's Equipment** on, in the case of **Connection Sites** in England and Wales, **The Company's** or, in the case of **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land (as appropriate); and

(b) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any of the **Transmission Connection Assets** on the land of the **User** concerned.

5.8 Not Used

5.9 NON-EMBEDDED CUSTOMERS

5.9.1 This Paragraph 5.9 provides for additional **Deenergisation** provisions which only apply in relation to **Users** acting in their category of connection and/or use as **Non-Embedded Customers**.

5.9.2 If the following condition ceases to be satisfied in respect of the **Supplier** supplying the **Connection Site The Company** may give written notice of that fact to the **User** and unless within 5 days of receipt of such notice the **User** advises **The Company** that it has contracted with an alternative **Supplier**, **The Company** shall be entitled to **Deenergise** the **Non-Embedded Customer's User's Equipment**:-

"the **Supplier** being authorised by a current **Supply Licence** to supply electricity to the premises to be supplied with electricity through the **Connection Site**."

5.9.3 If there ceases to be a subsisting right of **Use of System** by a **Supplier** at the **Connection Site** who is liable to **The Company** for **Use of System Charges** in respect of **Demand** attributable to the **Connection Site**, **The Company** shall be entitled to **Deenergise** the **User's Equipment.**

5.9.4 Where:

(a) the **Supplier** is in breach of the **CUSC** relating to the supply to the **Connection Site** and accordingly **The Company** is permitted under the **CUSC** to **Deenergise** the **User's Equipment**; or

(b) an **Event of Default** under Paragraph 5.6 has occurred in relation to the **Supplier** with whom the **User** has a **Supply Agreement** and the relevant event is still continuing or the relevant circumstances still exist,

The Company may **Deenergise** the **User's Equipment** upon the expiry of at least 48 hours prior written notice to the **User** provided that at the time of expiry of such notice the breach concerned remains unremedied or (as the case may be) the reason permitting **Deenergisation** continues or the relevant **Event of Default** is still continuing and neither **The Company** nor the **Supplier** has referred the matter to the **Dispute Resolution Procedure**. In such event, **The Company** may **Deenergise** the **User's Equipment** forthwith following completion of the **Dispute Resolution Procedure** and final determination of the dispute in **The Company 's** favour.

5.9.5 If a breach of the nature referred to in Paragraph 5.9.4 continues to the extent that it places or seriously threatens to place in the immediate future **The Company** in breach of the **Transmission Licence** and\or places or seriously threatens to place in the immediate future any **Relevant Transmission Licensee** in breach of its transmission licence, **The Company** may **Deenergise** the **Non-Embedded Customer's Equipment** at the **Connection Site** upon the expiry of at least five (5) **Business Days** prior written notice to the **User**, provided that at the time of expiry of such notice the breach concerned remains unremedied.

5.10 RELEVANT INTERRUPTIONS

5.10.1 In the event of a **Relevant Interruption** where the **Affected User** has not otherwise received compensation under the **Balancing and Settlement Code The Company** shall be liable to pay the **Affected User** upon request the **Interruption Payment** for the **Interruption Period**.

5.10.2 The **Interruption Payment** shall be paid by **The Company** to the **Affected User** within 28 days of the date of agreement as to the amount of the **Interruption Payment**.

5.10.3 The **Affected User** will take all reasonable steps to minimise the effect (and therefore the amount of the **Interruption Payment** sought as a consequence) of the **Relevant Interruption** on the operation of its business.

5.10.4 **The Company** shall as soon as reasonably practicable after the end of the **Interruption Period** notify the **Affected User** where the **Relevant Interruption** was in accordance with an **Emergency Deenergisation Instruction.**

END OF SECTION 5

Proposed Amendments to CUSC Section 6 under CAP 166 (Long Term Entry Capacity Auctions)

Please note that the numbering of the respective paragraphs is given in the heading above each section of text (rather than given next to the paragraph text).

Paragraphs 6.30 (Transmission Entry Capacity)

Paragraphs 6.30.1 and 6.30.2 are deleted and the remaining Paragraphs have been moved out of Section 6 and inserted in Appendix 3 to Section 3 as Paragraph 2 of the CUSC. This Appendix now deals with the different types of access products. The moved text itself has not changed other than to update any references or where specifically highlighted within that text.

General - Renumbering

Please note that as a result of the proposed amendments the clause numbering has been changed in some instances (as identified in the paragraph headings, above). This has meant that cross-references throughout the document have changed, those changes have not been shown here, unless they appear in paragraphs with more substantial amendments.

Proposed Amendments to CUSC Section 9 under CAP 166 (Long Term Entry Capacity Auctions)

Please note that the numbering of the respective paragraphs is given in the heading above each section of text (rather than given next to the paragraph text).

Paragraph 9.4 (Export of Power from the Interconnector Connection Site)

9.4 EXPORT OF POWER FROM THE INTERCONNECTOR CONNECTION SITE

Subject to the other provisions of the **CUSC**, the relevant **Bilateral Connection Agreement** and the **Grid Code** and any **Operating Agreement**, **The Company** shall**, as between The Company and a User acting in the category of an Interconnector,** accept into the **GB Transmission System** at the ~~**Connection Site** of an **Interconnector** power up to the **Transmission Entry Capacity** and (if any) **STTEC** and\or **LDTEC** and\or any **Temporary Received TEC** less any **Temporary Donated TEC** for the relevant **Period**~~**specified Node power generated by such User up to that User's LCN** as specified in Appendix C to the relevant **Bilateral Connection Agreement** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints which could not be avoided by the exercise of **Good Industry Practice**.

Paragraph 9.6

9.6 The **User** shall not permit the transfer of any amount of electricity onto the **GB Transmission System** in excess of ~~the **Transmission Entry Capacity** and (if any) **STTEC** and\or **LDTEC** and\or any **Temporary Received TEC** less any **Temporary Donated TEC** for the relevant **Period**~~ **its LCN** specified in Appendix C to the relevant **Bilateral Connection Agreement** or permit the taking of any amounts of electricity off the **GB Transmission System** in excess of the value as specified in Appendix C to the relevant **Bilateral Connection Agreement** save as expressly permitted or instructed pursuant to an **Emergency Instruction** under the **Grid Code** or save as expressly permitted pursuant to any **Operating Agreement** or the **Fuel Security Code** or as may be necessary or expedient in accordance with **Good Industry Practice**.

Paragraph 9.10.1 (Use of System Charges - Transmission Network Use of System Charges)

9.10.1 Subject to the provisions of the **CUSC**, and any relevant **Bilateral Agreement,** together with the relevant **Charging Statements**, the **User** shall with effect from the relevant date set out in the relevant **Bilateral Agreement**, be liable to pay to **The Company** the **Transmission Network Use of System Charges**~~ and (if appropriate) the **STTEC Charge** and **LDTEC Charge**~~ in accordance with the **CUSC** calculated in accordance with the **Statement of Use of System Charges** and the **Statement of the Use of System Charging Methodology. The Company** shall apply and calculate the **Use of System Charges** in accordance with the **Statement of Use of System Charges** and the **Statement of the Use of System Charging Methodology**.

Paragraph 9.22.3 (Use of System Charges - Balancing Services Use of System Charges)

9.22.3 Each **User** shall as between **The Company** and that **User** provide **The Company** with **Security Cover** in respect of **Transmission Services Use of System** **Charges, Short Term Access Products Charges,** and **Balancing Services Use of System Charges** in accordance with the provisions of Part III of Section ~~3.~~ **3, the provisions of Appendix 3 to Section 3 of the CUSC.**

Paragraph 9.22.4 (Use of System Charges - Balancing Services Use of System Charges)

9.22.4 Paragraphs 3.21 to 3.24 (Credit Requirements) **and Appendix 3 to Section 3 of the CUSC** as they relate to **Transmission Services Use of System** **Charges, Short Term Access Products** **Charges** and **Balancing Services Use of System Charges** shall apply as if set out herein in full and as if references to **Generators** were references to **Interconnector Users** and to **Interconnector Error Administrators** (as the case may be).

Renumbering

Please note that as a result of the proposed amendments the clause numbering has been changed in some instances (as identified in the paragraph headings, above). This has meant that cross-references throughout the document have changed, those changes have not been shown here, unless they appear in paragraphs with more substantial amendments.

CUSC - SECTION 10

TRANSITION ISSUES

~~Not used, removed on 15th February 2007, dedicated to Transitional Issues~~

CONTENTS

Part 4

10.1 INTRODUCTION

10.1.1 This Section 10 deals with issues arising out of the transition associated with the approval and implementation of **CUSC Amendment Proposal** 166 (Long Term Entry Capacity Auctions) which introduces the concept of a **Local Capacity Nomination** which forms the basis of a **User's** right to **Use of System** and provides for **Transmission Entry Capacity** to be allocated by auctions to be held annually by **The Company**.

10.1.2 The **Access Amendment Proposal** affects **User's** in the categories of **Power Stations** directly connected to the **GB Transmission System**, **Embedded Generators** with a **Bilateral Embedded Generation Agreement** and **Interconnector Owners** and references to **User** or **Applicant** in this Section 10 shall be construed accordingly.

10.1.3 The Section sets out the arrangements such that by the **LCN Date**:

(a) **User's** have **Bilateral Connection Agreements** and/or **Bilateral Embedded Generation Agreements** that provide for **Use of System** by reference to **Local Capacity Nomination**; and

(b) that **Users** have **Construction Agreements** that provide a programme for and identify the works required for the **Local Capacity Nomination**;

so that **User's** can take part in the **Initial Long Term Access Auction**.

10.1.4 The Section sets out the arrangements such that **The Company** is in a position to and has held and allocated **Transmission Entry Capacity** under the **Initial Long Term Access Auction** prior to the **Access Implementation Date**:

10.15 With effect from the **Access Implementation Date** a **User's** rights to **Use of System** by reference to **Transmission Entry Capacity** as they applied the day prior to the **Access Implementation Date** shall be extinguished and shall cease to have effect and a **User's** rights to **Use of System** shall apply only by reference to the **Local Capacity Nomination** and **Transmission Entry Capacity** as provided for in their **Bilateral Connection Agreements** and/or **Bilateral Embedded**

Generation Agreements as amended or created under this **CUSC** Section 10.

10.1.6 In this Section 10:

(a) the term "**Access Amendment Proposal**", shall mean **CUSC Amendment Proposal** 166 (Long Term Entry Capacity Auctions);

(b) the term "**Agreed LCN**", shall mean a **Local Capacity Nomination** which is lower than the **Default LCN** and which has been agreed by **The Company** and the **User** pursuant to Paragraph 10.2.3;

(c) the term "**LCN Date**" shall be the date specified as such in the **Detailed Transition Process and Timeline** being the date by which a **User** has to satisfy the entry criteria for **LCN** in order to enter the Initial **Long Term Access Auction**;

(d) the term "**Applicants**"; shall mean **Users** (or prospective **Users**) who apply during the **Access Transition Period** for connection to and/or use of the **GB Transmission System**;

(e) the term "**Application and Offer Amendments**", shall mean those amendments to **CUSC** Exhibits B, C, D and E proposed by the **Access Amendment Proposal**;

(f) the term "**Bilateral Agreement Amendments**", shall mean those amendments to **CUSC** Schedule 2 Exhibit 1 (Bilateral Connection Agreement) and Exhibit 2 (Bilateral Embedded Generation Agreement) and the new Exhibit 3 (Construction Agreement) proposed by the **Access Amendment Proposal**;

(g) the term "**Default LCN**" shall mean a **Local Capacity Nomination** at the same MW volume and subject to the same restrictions (unless **The Company** agrees otherwise) as the **Transmission Entry Capacity** within the relevant **Existing CUSC Agreement** or **New CUSC Agreement**;

(i) (h)

(i) the term "**Existing CUSC Agreement**" shall mean a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** pursuant to which a **User** is by the **Relevant Date** connected to and/or using the **GB Transmission System**;

(j) the term" **Initial Long Term Access Auction**" shall mean the **Long Term Access Auction** to be held during the **Access Transition Period** pursuant to this **Section 10**;

(k) the term" **Initial Long Term Access Invitation Date**" shall mean the date invitations are invited for the **Initial Long Term Access Auction**;

(l) the term "**Access Implementation Date**" shall mean the **Implementation Date** for the **Access Amendment Proposal** (unless it is provided to be different in relation to a particular provision),

(m) the term "**Access Transition Period**", means the period from the **Relevant Date** and ending on and including the day before the **Access Implementation Date** (unless it is provided to be different in relation to a particular provision) and is the period with which this Section 10 deals;

(n) the term "**New CUSC Agreements**", shall mean a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** or any agreement to vary the same and the associated **Construction Agreement** but pursuant to which the **User** is not yet connected to and/or using the **GB Transmission System** at the **Relevant Date**;

(o) the term "**Outstanding Applications**", shall mean an offer yet to be made to a **User** or prospective **User** of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** or any agreement to vary the same and the associated **Construction Agreement** at the **Relevant**

Date but where the application was made prior to the **Relevant Date**;

(p) the term "**Outstanding Offers**", shall mean an offer to a **User** or prospective **User** of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** or any agreement to vary the same and the associated **Construction Agreement** which has not been accepted at the **Relevant Date** but is still capable of being accepted;

(q) the term "**Relevant Date**" means the day on which the **Access Amendment Proposal** becomes an **Approved Amendment**;

(r) the term "**Transition Application**" shall mean an application made under the **Transition Application Process**

(s) the term "**Transition Application Process**" shall mean the detailed process to be published by **The Company** within 1 month or the **Relevant Date** setting out the timeline and processes to prepare the (a) necessary amendments to or preparation of new **Bilateral Connection Agreements** and **Bilateral Embedded Generation Agreements** and **Construction Agreements** with regard to **LCN** such that these are agreed prior to the **Initial Long Term Access Application Date** and (b) hold the **Initial Long Term Access** Auction .

(t) the term "**Detailed Transition Process and Timeline**" necessary amendments to or preparation of new **Bilateral Connection Agreements** and **Bilateral Embedded Generation Agreements** and **Construction Agreements** with regard to **LCN** such that these are agreed prior to the **Initial Long Term Access Application Date** and (b) hold the **Initial Long Term Access** Auction

10.1.4 Without prejudice to any specific provision under this Section 10 as to the time within which or the manner in which **The Company** or a **User** should perform its obligations under this Section 10, where **The Company** or a **User** is required to take any step or measure under this Section 10, such requirement shall be construed as including any obligation to:

(a) take such step or measure as quickly as reasonably practicable; and

(c) do such associated or ancillary things as may be necessary to complete such step or measure as quickly as reasonably practicable.

10.1.5 As soon as practicable after the **Relevant Date** and in any event (unless the Authority) agrees otherwise within 3 months of the same **The Company** shall publish a plan identifying in detail the processes and timelines required in connection with the amendment of the **Existing CUSC Agreements** and **New CUSC Agreements** such that a **User** has arrangements for **LCN** in place to meet the criteria for entry into the **Initial Long Term Access Auction** and for the holding of the **Initial Long Term Access Auction**.

10.2 LCN TRANSITION

Existing CUSC Agreements

10.2.1 Each **User** shall advise **The Company** as soon as practicable and in any event within one month (or such longer period as **The Company** and that **User** agree) of the **Relevant Date** of those **Existing CUSC Agreements** where it wants the **Local Capacity Nomination** to be at a higher or lower MW volume than the **Default LCN**.

10.2.2 Where the MW volume is higher than the **Default LCN** the **User** shall as soon as practicable and any event by the date specified in the **Transition Application Process Timeline** make a **Transition Application** to **The Company** in respect of the relevant **Existing CUSC Agreement**.

10.2.3 Where the MW volume is lower than the **Default LCN** that lower MW volume shall be as agreed between **The Company** and the **User**.

10.2.4 Where a **Transition Application** is made **The Company** shall make an offer to amend the **Existing CUSC Agreements** to provide for a **Local Capacity Nomination** at the level proposed and on the same basis as if such **Transition Application** had been a **Modification Application** made after the **Access Implementation Date** including where necessary, a **Construction Agreement**, in respect of any **Construction Works** required. The **Construction Agreement** will identify both the earliest date by which the **Construction Works** could

be completed and a **backstop date** by which they could be completed.

10.2.5 Except as specifically otherwise provided for in an agreement to vary between **The Company** and the **User** each **Existing CUSC Agreement** shall be read and construed with effect from the **Access Implementation Date** in substitution for the **Existing CUSC Agreements**, such that:

(a) the defined terms within it, and the effect of those defined terms, shall, in place of their respective meanings immediately before the **Access Implementation Date**, be deemed to have the meanings they would have had if those agreements had been entered into after the **Access Implementation Date**.

(b) the right to use the **GB Transmission System** is by reference to "**Local Capacity Nomination**" instead of **"Transmission Entry Capacity**" and the clauses within the **Existing CUSC Agreement** are amended in the manner provided for by the **Bilateral Agreement Amendments**.

(c) Appendix C to the **Existing CUSC Agreement** includes reference to the "**Local Capacity Nomination**" in the manner provided for in the **Bilateral Agreement Amendments**;

(d) the **Local Capacity Nomination** is the **Default LCN** or **Agreed LCN** as appropriate;

(e) the **TEC Period** is zero and **TEC** is zero unless allocated otherwise under the **Initial Long Term Access Auction**;

(f) the completion date in the **Construction Agreement** is the earliest date identified where the **User** has been allocated **Transmission Entry Capacity** in the Initial **Long Term Access Auction** but is otherwise the completion date identified as the backstop date.;

10.2.6 The **Existing CUSC Agreements** as amended shall be deemed to be in effect at the **LCN Date** solely for the purposes of the criteria foe entry into the **Initial Long Term Access Auction.**

New Agreements

10.2.7 Each **User** shall advise **The Company** as soon as practicable and in any event within one month (or such longer period as **The Company** and that **User** agree) of the **Relevant Date** of those **New CUSC Agreements** where it wants the **Local Capacity Nomination** to be at a higher or lower MW volume than the **Default LCN** and where it wants a **Completion Date** earlier that the date in its **New CUSC Agreements**.

10.2.8 Where the circumstances in 10.2.6 apply the **User** shall as soon as practicable and in any event by the date specified in the **Transition Application Process Timeline** make a **Transition Application** to **The Company** in respect of the relevant **Existing CUSC Agreement**

10.2.9 Where a **Transition Application** is made **The Company** shall make an offer to amend the **New CUSC Agreements** to provide for a **Local Capacity Nomination** at the level proposed and a revised **Construction Programme** on the same basis as if such **Transition Application** had been a **Modification Application** made after the **Access Implementation Date** identifying the earliest date by which the **Construction Works** could be completed and a backstop date by which they could be completed.

10.2.10 Except as specifically agreed otherwise between **The Company** and the **User** each **New CUSC Agreement** shall be read and construed, with effect from the **Access Implementation Date**, such that:

(a) the defined terms within it, and the effect of those defined terms, shall, in place of their respective meanings immediately before the **Access Implementation Date**, be deemed to have the meanings they would have had if those agreements had been entered into after the **Access Implementation Date**.

(b) the right to use the **GB Transmission System** is by reference to "**Local Capacity Nomination**" instead of **"Transmission Entry Capacity**" and the clauses within the **New CUSC Agreement** are amended in the manner

provided for by the **Bilateral Agreement Amendments**.

(c) Appendix C to the **New CUSC Agreement** includes reference to the "**Local Capacity Nomination**" in the manner provided for in the **Bilateral Agreement Amendments**;

(d) the **Local Capacity Nomination** is the **Default LCN** or **Agreed LCN** as appropriate;

(e) and the relevant Clauses and Appendices within the **Construction Agreement** are amended in the manner provided for (and in the case of the existing **Construction Agreement**, so that it is consistent with the new Exhibit) in the **Bilateral Agreement Amendments**;

(g) the **TEC Period** is zero and **TEC** is zero unless allocated otherwise under the **Initial Long Term Access Auction**;

(h) the completion date in the **Construction Agreement** is the earliest date identified where the **User** has been allocated **Transmission Entry Capacity** in the Initial **Long Term Access Auction** but is otherwise the completion date identified as the backstop date;

(i) The **Existing CUSC Agreements** as amended shall be deemed to be in effect at the **LCN Date** solely for the purposes of the criteria for entry into the **Initial Long Term Access Auction.**

Outstanding Applications

10.2.11 Each **User** shall advise **The Company** as soon as practicable after the **Relevant Date** as to whether, in respect of any **Outstanding Applications,** it wants the **Local Capacity Nomination** to be at a higher or lower MW volume than the **Transmission Entry Capacity** as stated in its application.

10.2.12 **The Company** shall consider the application in light of any such revisions and make the offer on the same basis as if such **Outstanding Application** had been made after the **Access Implementation Date** and consistent with the **Application and Offer Amendments** and **Bilateral Agreement Amendments** and to the extent practicable within the original timescales.

Outstanding Offers

10.2.13 Each **User** shall advise **The Company** as soon as practicable after the **Relevant Date** as to whether, in respect of any **Outstanding Offers**, it wants the **Local Capacity Nomination** to be at a higher or lower MW volume than the **Transmission Entry Capacity** as stated in its application.

10.2.14 In any event **The Company** shall as soon as practicable make such amendments to the **Outstanding Offers** as necessary to make such **Outstanding Application** consistent with the form and contents of **Offers** made after the **Access Implementation Date**.

Applicants

10.2.15 Each **Applicant** shall submit a **Connection Application** or **Use of System Application** in a form consistent with the **Application and Offer Amendments**.

10.2.16 **The Company** shall prepare the **Offers** in a form and manner consistent with the **Application and Offer Amendments and Bilateral Agreement Amendments**.

10.3 Initial Long Term Access Auction

10.3.1 **The Company** shall undertake the **Initial Long Term Access Auction** in the timescales and manner provided for in the **Detailed Transition Process and Timeline** and as if the **Access Amendment Proposal** and the **SO Long Term Release Methodology** had been implemented and was in effect.

10.3.2 **User's** who wish to enter the **Initial Long Term Access Auction** shall do so on the same basis and with the same rights and obligations as if the **Access Amendment Proposal** was in effect.

END OF SECTION 10

Sec 11 Proposed New Defined Terms (WGAA2)

"**Access Capacity**"	the sum of a **User's TEC** and **Short Term Access Products** (if any);
"**Auction Closure Date**"	in respect of each **Long Term Access Auction**, the point in time as defined in the **SO Long Term Release Methodology**;
"**Cancellation Charge**"	the charge payable on termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** or **Construction Agreement** as calculated in accordance with the **User Commitment Principles**;
"**Cancellation Period(s)**"	the period(s) as set out in a **User's Construction Agreement** by reference to which the **Pre Commissioning Cancellation Charge** payable is identified.
"**CAP 166 Transition Period**"	as defined in **CUSC** Section 10;
"**Capacity Reduction Charge**"	the charge payable on a reduction in **LCN** as calculated in accordance with Part 2 of the **User Commitment Principles**;
"**Effective LCN Decrease Date**"	the date as defined in Paragraph 1.4.3 of Appendix 3 of Section 3 of the **CUSC**;
"**First FS Security Period**"	means the period from and including a) the day of signing of the **Construction Agreement** or b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** 5 **Business Days** after the **Auction Closure Date** until in each case the next following 31st March or 30th September (whichever shall first occur);
"**First PC Security Period**"	means the period from and including a) the day of signing of the **Construction Agreement** or b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** 5 **Business Days** after the **Auction Closure Date** until the end of that **Cancellation Period**;
"**FS Security End Date**"	the **Completion Date** as defined in the relevant **Construction Agreement**.
"**FS Security Period**"	means the **First FS Security Period** and the **Subsequent FS Security Periods**.
"**Initial Long Term Access Auction**"	the annual auction held by **The Company** in accordance with the **SO Long Term Release Methodology** during the **CAP 166 Transition Period;**
"**LCN Transmission Reinforcement Works**"	those **Transmission Reinforcement Works** that are required from the **Node** to connect into a **MITS Substation**, inclusive of substation works, a substation with more than 4 **Transmission Circuits**

	connecting at the substation and in relation to a particular **User** as defined in its **Construction Agreement**.
"**LCN/TEC Register**"	the register set up by **The Company** pursuant to Section 3 Appendix 3 Paragraph 2.4;
"**Local Capacity Nomination**" **or** "**LCN**"	the station capacity (in whole MW) being the maximum figure at which a **User** can export power onto the **GB Transmission System** at a **Node**, and which, in relation to a **User** acting in the category of a **Power Station** directly connected to the **GB Transmission System**, must never exceed it's **Connection Entry Capacity**;
"**Long Term Access Auction**"	the annual auction held by **The Company** in accordance with the **SO Long Term Release Methodology;**
"**MITS Substation**"	means a substation at a **Grid Supply Point** with 2 or more **Transmission Circuits** connecting at the substation.
"**Node**"	Shall mean: (a) in the case of a **User** acting in the category of a **Power Station** directly connected to the **GB Transmission System**, the **Connection Site** specified in a **User's Bilateral Connection Agreement**; and (b) in the case of a **User** acting in the category of an **Embedded Power Station**, the **Grid Supply Point** that can be reasonably associated with the **Embedded** generation site specified in a **User's Bilateral Embedded Generation Agreement**;
"**PC Security End Date**"	shall mean the end of the last **Financial Year** in the **TEC Period**.
"**PC Security Period**"	means the relevant **Cancellation Period**.
"**PC Security Period**"	**First PC Security Period** and the **Subsequent PC Security Periods**.
"**Pre Commissioning Cancellation Charge**"	that element of the **Cancellation Charge** payable in the event of termination of a **Construction Agreement** and associated **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** prior to the **Completion Date** within such **Construction Agreement** as calculated in accordance with Part 1 of the **User Commitment Principles** and in relation to a particular **User** as defined in its **Construction Agreement**;
"**Short Term Access Products Charge**":	the element of **Use of System Charges** payable by a **User** arising out of a **User's Use of System** by means of a **Short Term Access Product**;
"**Short Term Access Products**"	any of the following products: the **STTEC**, **LDTEC** and **Temporary TEC**;
"**SO Long Term Release Methodology**"	the methodology prepared and maintained by **The Company** pursuant to **CUSC** Section 10 and Section 3 Appendix 3 Paragraph 2 respectively;

"**Subsequent FS Security Period**"	means each subsequent period of six calendar months commencing on the last day of the **First FS Security Period** and continuing until the **Construction Agreement** is terminated and the **Final Sums** shall have been paid;
"**Subsequent PC Security Period**"	means each subsequent **Cancellation Period** commencing on the last day of the **First FS Security Period** and continuing until the **Construction Agreement** is terminated and the **Pre Commissioning Cancellation Charge** shall have been paid;
"**TEC Cancellation Charge**"	that element of the **Cancellation Charge** payable in the event of termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** after a **User** has been allocated, or acquired by **TEC Trade, Transmission Entry Capacity** and prior to the end of the **TEC Period** relating to such **Transmission Entry Capacity** as calculated in accordance with **CUSC** the **User Commitment Principles**;
"**TEC Period**"	a period in whole **Financial Years** allocated to a **User** under the **Long Term Access Auction** and during which the **User** can export onto the **GB Transmission System** utilising **TEC**;
"**Transmission Circuit**"	as defined in the **GBSQSS**;

Proposed Amendments to Existing Defined Terms

"Transmission Entry Capacity"	[Previous term deleted and replaced by the following text:] the figure allocated as such to a **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and set out in Appendix C of the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**;
"TEC Register"	shall be deleted
"Operational Notification":	the notice of that name given to the **User** by **The Company** under Paragraphs 1.5.5 or 3.2.6 7 of the **CUSC** or under a **Construction Agreement**;
Various – **"Exchange rate Requests", "LDTEC", "STECC", "TEC Increase Request" and "Temporary TEC Exchanges"**	the references to Section 3 and Paragraphs within Section 3 where used in the definitions of and Exhibits relating to these shall be replaced with the corresponding references in Section 3 Appendix 3.
"Use of System Payment Date":	the date for payment of **Use of System Charges**, **Short Term Access Products Charges;**
Definitions of "Bi annual Estimate" and **"Secured Amount Statement"**	Amend to include reference to Schedule 4

SCHEDULE 2 - EXHIBIT 1

DATED [ ]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

BILATERAL CONNECTION AGREEMENT

[FOR A DIRECTLY CONNECTED POWER STATION]

[FOR A DIRECTLY CONNECTED DISTRIBUTION SYSTEM]

[FOR A NON-EMBEDDED CUSTOMER SITE]

[FOR AN INTERCONNECTOR OWNER]

At [ ]

Reference: [ ]

CONTENTS

Appendix F4 **Site Specific Technical Conditions - Protection and Control Relay Settings - Fault Clearance Times**

Appendix F5 **Site Specific Technical Conditions - Load Shedding Frequency Sensitive Relays**

THIS **BILATERAL CONNECTION AGREEMENT** is made on the [ ] day of [ ] 200[ ]

BETWEEN

(1) **National Grid Electricity Transmission plc** a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** is required to prepare a Connection and Use of System Code **(CUSC)** setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for [**Connection** to] [and use of] [**Modification** of its existing **Connection** to [and use of]] the **GB Transmission System** and pursuant to the **Transmission Licence The Company** is required to offer terms in this respect.

(C) The **User** has applied for connection [and use] in the capacity of a [ ] as set out in Paragraph 1.2.4 of the **CUSC**.

(D) **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between **CUSC Parties**).

(E) This **Bilateral Connection Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.

[(F) The parties are also on even date herewith entering into a **Construction Agreement**.]

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** have the same meanings, interpretations or constructions in

this **Bilateral Connection Agreement** [and the following terms and expressions shall have the meaning set out below:-

"Construction Agreement"	the agreement made between the parties of even date herewith for the carrying out of construction works;
"Charging Date"	as defined in the **Construction Agreement**.

]

["**Circuit [ ]**" [insert detailed description of circuit(s) affected by the **Design Variation**] *(power station with **Design Variation** and\or **Non Standard Boundary** only)*;]

["**Outage Conditions [ ]**" the unavailability of **Circuit [ ]** as a result of

(a) a [planned]/[unplanned]/[planned or unplanned] incident occurring directly on **Circuit [ ]**; or

(b) **Circuit [ ]** requiring to be **Deenergised** for health and safety reasons to allow for the planned or unplanned availability of a circuit in the immediate vicinity of **Circuit [ ]**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

["**Outage Period**" the period of time during which the **Outage Conditions** and/or reduced circuit capability apply; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Circuit Restrictions**" means the notification issued by **The Company** to the **User** in accordance with Clause [10.8] of this **Bilateral Connection Agreement**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Outage Conditions**" means the notification issued by **The Company** to the **User** in accordance with Clause [10.4] of this **Bilateral Connection Agreement**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Restrictions on Availability**" means a **Notification of Outage Conditions** and\or a **Notification of Circuit Restrictions** as

applicable; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Relevant Circuits**" means [**Circuit [ ]**]; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

["**Transmission Related Agreement**" means the agreement of even date entered into between the parties for the provision of and payment for **Balancing Services** in respect of **Bid-Offer Acceptances**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

2. COMMENCEMENT

This **Bilateral Connection Agreement** shall commence on [ ].

3. THE CONNECTION SITE ~~AND~~, TRANSMISSION CONNECTION ASSETS AND NODE

3.1 The **[Connection Site/Node]** and **Transmission Connection Assets** to which **the Connection rights granted pursuant to** this **Bilateral Connection Agreement** ~~relates is~~**relate are** more particularly described in Appendix A.

4. CONNECTION CHARGES

The **Connection Charges** payable by the **User** in accordance with the **CUSC** in respect of the **Transmission Connection Assets** set out in Appendix A [(including the **One-Off Charge**)] are set out in Appendix B. These **Connection Charges** shall be payable by the **User** from the ~~[**CUSC Implementation Date**] [or] [~~ **Charging Date.**~~]~~

5. [USE OF SYSTEM *(power station only)*

5.1 The right to use the **GB Transmission System** at the **Node** by means of the access products (other than **Transmission Entry Capacity**) in **CUSC** Section 3, Appendix 3, up to the **User's Local Capacity Nomination**, shall commence on and **Use of System Charges** shall be payable by the **User** in respect of these from the ~~[**CUSC Implementation Date**] [or] [~~**Charging Date**.~~]~~

5.2 The right to use the **GB Transmission System** at the **Node** by means of **Transmission Entry Capacity** shall only apply where such right has been allocated to the **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and in such circumstances shall commence on and continue for the duration of the **TEC Period**.

5.3 **Transmission Network Use of System Charges** in respect of **Transmission Entry Capacity** shall be payable from and for the duration of the **TEC Period.**

6. CREDIT REQUIREMENTS

The amount to be secured by the **User** from [date] is set out in the **Secured Amount Statement** issued from time to time and as varied from time to time in accordance with Section 2 of the **CUSC**.

7. CONNECTION ENTRY CAPACITY, LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

7.1 The **Connection Entry Capacity** in relation to the **Generating Units** and the **[Connection Site/ Node] and the Local Capacity Nomination** and the **Transmission Entry Capacity and TEC Period** in relation to the **[Connection Site / Node]**, are specified in Appendix C.

7.2 Appendix C Part ~~3~~4 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **[Connection Site/Node]** under the **Balancing and Settlement Code**. The **User** will provide **The Company** with the information needed to complete details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Local Capacity Nomination** ~~**Transmission Entry Capacity**~~ and **The Company** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **The Company** prior to any alteration in the **BM Unit Identifiers** and **The Company** shall ~~prepared~~**prepare** and issue a revised Appendix C incorporating this information.

7.3 **The Company** shall monitor the **Users** compliance with its obligation relating to ~~**Transmission Entry Capacity**~~**Local Capacity Nomination in relation to the [Connection Site/Node]** against the sum of metered volumes of the **BM Units** set out in Part ~~3~~4 of Appendix C submitted by the **User** for each **Settlement Period**.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The site specific technical conditions applying to the **Connection Site** are set out in Appendices F1 to F5 to this **Bilateral Connection Agreement** as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

9. [ELECTRICAL BOUNDARY *(Non Standard Boundary only)*

The division of ownership of **Plant** and **Apparatus** shall be at [define ownership boundary]. For the avoidance of doubt, nothing in this Clause 9 shall effect any transfer of ownership in any **Plant** or **Apparatus**.]

10. [RESTRICTIONS ON AVAILABILITY *(power station with* ***Design Variation*** *and\or* ***Non Standard Boundary*** *only)*

10.1 [The division of ownership of **Plant** and **Apparatus** in Clause 9 above is contrary to the principles of ownership set out in **CUSC** Paragraph 2.12.]

10.2 [In addition the] [The] **User** acknowledges that the connection design which provides for connection to the **GB Transmission System** is a variation to the connection design as provided for in Chapter 2 of the **GB SQSS**.

10.3 It is a condition of the **GB SQSS** that any **Design Variation** satisfies the criteria set out in paragraphs 2.15 to 2.18 (inclusive) of the **GB SQSS** and on that basis [and in light of the non standard principles of ownership] the following provisions will apply.

10.4 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of the **Outage Conditions** and where practicable the expected **Outage Period**. Such notice shall be issued:

10.4.1 In the event that the **Notification of Circuit Outage** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, be in accordance with **Grid Code** OC2 requirements; or

10.4.2 In the event that the **Notification of Circuit Outage** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the method of such notification.

10.4.3 **The Company** shall promptly notify the **User** when the **Outage Period** will or has ceased.

10.5 **The Company** shall be entitled to revise the **Notification of Circuit Outage** given under Clause 10.4 above at any time.

10.6 The **User** will acknowledge receipt of such **Notification of Circuit Outage** and where practicable shall revise its **Output Useable** forecast for the affected **BM Unit** accordingly.

10.7 Following such **Notification of Circuit Outage** in accordance with Clause 10.4:

10.7.1 [(i) In respect of the **Outage Conditions [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the outage of the **Relevant**

Circuits and (ii) operate its **Power Station** to reflect the outage of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

10.7.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

10.8 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of an event leading to a reduced circuit capability of **Circuit [ ]** and where practicable the expected **Outage Period**. Such notice (including any revision) shall be issued:

10.8.1 In the event that the **Notification of Circuit Restriction** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, be in accordance with **Grid Code** OC2 requirements; or

10.8.2 In the event that the **Notification of Circuit Restriction** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, such notice shall be given as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the means of such notification.

10.8.4 **The Company** shall promptly notify the **User** when the period of reduced circuit capability will or has ceased.

10.9 **The Company** shall be entitled to revise the **Notification of Circuit Restriction** given under Clause 10.8 above at any time.

10.10 Following such **Notification of Circuit Restriction** in accordance with Clause 10.8:

10.10.1 [(i) In respect of the reduction in capability of **Circuit [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the reduction in capability of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the reduction in capability of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

10.10.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

10.11 Where the **User** becomes aware or is notified by **The Company** of any breach of Clauses 10.7 or 10.10 above the **User** shall forthwith take all reasonable steps to comply with the provisions of that Clause.

10.12 Where the **User** breaches in whole or in part the provisions of Clause 10.7 or Clause 10.10 above, the **User** shall at **The Company's** request

explain to **The Company's** satisfaction (acting reasonably) the reason for the breach and demonstrate to **The Company's** satisfaction that appropriate steps have been taken to ensure that such breach will not reoccur. In the event that the **User** does not do this **The Company** may give notice to the **User** reducing the ~~**Transmission Entry Capacity**~~**Local Capacity Nomination** of the **Connection Site** and Appendix C of this **Bilateral Connection Agreement** shall be varied accordingly. This ~~**Transmission Entry Capacity**~~**Local Capacity Nomination** shall apply until such time as the **User** has explained to **The Company's** reasonable satisfaction the reason for the breach and has demonstrated that appropriate steps have been taken to ensure that such breach will not reoccur and Appendix C shall be automatically amended thereafter to reflect the reinstatement of the ~~**Transmission Entry Capacity**~~**Local Capacity Nomination**.

10.13 If within 3 months of a breach of Clause 10.7 or Clause 10.10 above which entitled **The Company** to take action under Clause 10.12 above, the **User** has still failed to provide the explanation and\or demonstration required by **The Company** under Clause 10.12 then **The Company** may treat such breach as an **Event of Default** for the purposes of Section 5 of the **CUSC** and following such breach may give notice of termination to the **User** whereupon this **Bilateral Connection Agreement** shall terminate and the provisions of **CUSC** Paragraph 5.4.7 shall apply.

10.14 For the avoidance of doubt any **Deenergisation** resulting from the **Outage Conditions** as set out in the relevant **Notification of Restrictions on Availability** constitutes an **Allowed Interruption**.

10.15.1 **The Company** and the **User** shall act in accordance with **Good Industry Practice** to minimise so far as reasonably practicable the occurrence and duration of (i) the **Outage Conditions** and (ii) an **Event** leading to reduced circuit capability of the **Relevant Circuits**. **The Company** and the **User** will, recognising the effect of the **Outage Conditions** and the reduced circuit capability on the **User's** operations, coordinate the **Outage Conditions** and the reduced circuit capability on the **GB Transmission System** (where they occur as a result of a **Planned Outage**) and the **User's Plant** and **Apparatus** in accordance with **Good Industry Practice** and to the extent practicable. **The Company** and the **User** acknowledge however that even where **Planned Outages** are coordinated and agreed that **The Company** and\or the **User** may need to cancel or change such **Planned Outage**.

10.15.2 **The Company** and the **User** hereby acknowledge and agree that, where reasonably practicable, alternative operating arrangements shall be implemented to minimise the effect of **Outage Conditions** and reduced circuit capability [, including, but not limited to [describe potential arrangements]]. In the event that **The Company** and the **User** implement alternative operating arrangements in respect of an **Outage Condition** and reduced circuit capability, the provisions of Clauses 10.7 and 10.10 shall not apply to the extent that the alternative operating arrangements mitigate the restrictions (whether in whole or in part) that would otherwise

apply to the **User** under this Clause 10 for all **Settlement Periods** or parts thereof falling within the **Outage Period** or period of reduced circuit capability.

10.17 In the event that the **GB Transmission System** conditions subsequently change such that the conditions required for a design variation under the **GB SQSS** are no longer met then **The Company** shall be entitled to revise Clause 1, this Clause 10 and the **Outage Conditions** as necessary to ensure that such **GB SQSS** conditions continue to be met.]

11. TERM

11. Subject to the provisions for earlier termination set out in the **CUSC** this **Bilateral Connection Agreement** shall continue until the **User's Equipment** is **Disconnected** from the **GB Transmission System** at the **Connection Site** in accordance with Section 5 of the **CUSC**.

12. VARIATIONS

12.1.1 Subject to Clause ~~10.2, 10.3~~12.2, 12.3, 12.4 **and** ~~**10.4**~~12.5 below, no variation to this **Bilateral Connection Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

12.2 **The Company** and the **User** shall effect any amendment required to be made to this **Bilateral Connection Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence,** an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

12.3 **The Company** has the right to vary Appendices A and B in accordance with this **Bilateral Connection Agreement** and the **CUSC** including any variation necessary to enable **The Company** to charge in accordance with the **Charging Statements**, or upon any change to the **Charging Statements**.

12.4 Appendices A and B shall be varied automatically to reflect any change to the **Construction Works or Transmission Connection Assets** as provided for in the **Construction Agreement**.

12.5 **The Company** has the right after each **Auction Closure Date** to vary Appendix C as necessary to record any **Transmission**

Entry Capacity and the **TEC Period** and £/MW figure as allocated to the **User** under the **Long Term Access Auction**.

13. GENERAL PROVISIONS

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Connection Agreement** *mutatis mutandis*.

14. TEC CANCELLATION CHARGE

In the event of termination of this **Bilateral Connection Agreement** the **User** shall be liable to pay **The Company** the **TEC Cancellation Charge** (if any) due in accordance with **CUSC** Schedule 4, payment in each case to be made within [14 days] of the date of **The Company's** invoice in respect of the same.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission plc)

SIGNED BY)
[name])
for and on behalf of)
[User])

APPENDIX A

TRANSMISSION CONNECTION ASSET/CONNECTION SITE/NODE

Company: [ ]

Connection Site: [ ]

Node: [ ]

Type: [ ]

Part 1 - Pre-Vesting Assets

Allocation	Description	Age (As at [ ])	Year

Part 2 - Post-Vesting Assets

Allocation	Description	Age (As at [ ])	Year

Part 3 - Energy Metering Systems (*)

Allocation	Description	Age (As at [ ])	Year

(*) FMS, Energy Metering Systems - The Electronics components have a 15 year replacement period. The Non-Electronics components have a 40 year replacement period.

All the above are inclusive of civil engineering works. At double busbar type substations, ownership ofmain and reserve busbars follows ownership of section switches.

Diagram Reference: [ ]

Appendix Reference: [ ]

Agreement Reference: [ ]

APPENDIX B

CONNECTION CHARGES/PAYMENT

Company: [ ]

Connection Site: [ ]

Type: [ ]

(1) Connection Charges

The Connection Charges set out below may be revised in accordance with the terms of this Bilateral Connection Agreement and/or the Construction Agreement and/or the CUSC and/or the Charging Statements

Part 1 - Pre-Vesting Assets

The Connection Charge for those assets extant at 31st March 1990 and specified in Appendix A Part 1 will be at an annual rate for the period [ ] to [ ] of £[ ] where

Rate of Return = [ ]%

Transmission Costs

Part A Site specific maintenance element = £[ ]
Part B Other transmission costs element = £[ ]

Part 2 - Post-Vesting Assets

The Connection Charge for those assets installed for this agreement after 31st March 1990
and specified in Appendix A Part 2 will be at an annual rate for the period [ ]
to [ ] of £[ ] where

Rate of Return = [ ]%

Transmission Costs

Part A Site specific maintenance element = £[ ]
Part B Other transmission costs element = £[ ]

Part 3 - Energy Metering Systems

For FMS, Energy Metering Systems assets, installed for this agreement as specified in Appendix A Part 3 the Connection Charge will be at an annual rate for the period from [ ] to [ ] of £[ ]

Part 4 - Miscellaneous Charges

The miscellaneous charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

Part 5 - One-off / Transmission Charges

The transmission charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

(2) Payment

The Connection Charges for Parts 1 to 6 shall be payable in equal monthly instalments as specified in Paragraph 6.6 of the CUSC

Appendix Reference: [ ]

APPENDIX C (Power Stations)

CONNECTION ENTRY CAPACITY, LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY

Company:

Grid Supply Point/Connection Site/**Node**:

Part 1 Connection Entry Capacity

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Power Station	[ ]
Generating Unit	
Genset 1	[ ]
Genset 2	[ ]
Genset 3	[ ]
Genset 4	[ ]

Part 2 Local Capacity Nomination

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)
Power Station

Part 3 Transmission Entry Capacity

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

~~TEC(MW)~~	
Power Station	[ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial Year	TEC MW	£/MW	TOTAL CHARGE

Part ~~3~~4 BM Units comprising Power Station

T_BMU 1	(Associated with Genset 1)
T_BMU 2	(Associated with Genset 2)
T_BMU 3	(Associated with Genset 3)
T_BMU 4	(Associated with Genset 4)
T_BMU SD-1	(Station Demand)
T_BMU AD-1	(Additional Trading Site Demand)

APPENDIX C (Interconnector Owners)

CONNECTION ENTRY CAPACITY AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

Company:

Connection Site:

Part 1 Connection Entry Capacity

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Interconnector	[ ]

Part 2 Local Capacity Nomination

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)	
Interconnector	

Part 3 Transmission Entry Capacity

Transmission Entry Capacity (**TEC**) expressed in average MW taken over a half hour settlement period

Interconnector	[ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial Year	TEC MW	£/MW	TOTAL CHARGE

Part ~~3~~4 BM Units comprising Interconnector

All BMU's starting with an identifier [I_FRA for example]. No need to list all individual BMU's

Part 45 Figure for the Purposes of CUSC Paragraph 9.6

APPENDIX FI

SITE SPECIFIC TECHNICAL CONDITIONS:

AGREED BALANCING SERVICES

APPENDIX F2

[NOT USED]

APPENDIX F3

SITE SPECIFIC TECHNICAL CONDITIONS:

SPECIAL AUTOMATIC FACILITIES

APPENDIX F4

SITE SPECIFIC TECHNICAL CONDITIONS:

PROTECTION AND CONTROL RELAY SETTINGS

FAULT CLEARANCE TIMES

APPENDIX F5

SITE SPECIFIC TECHNICAL CONDITIONS:

LOAD SHEDDING FREQUENCY SENSITIVE RELAYS

END OF SCHEDULE 2 - EXHIBIT 1

SCHEDULE 2 - EXHIBIT 2

DATED [ ]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

BILATERAL EMBEDDED GENERATION AGREEMENT

[USE OF SYSTEM FOR AN EMBEDDED POWER STATION]

[USE OF SYSTEM FOR A SMALL POWER STATION TRADING PARTY]

[DISTRIBUTION INTERCONNECTOR OWNER]

At [ ]

Reference: [ ]

CONTENTS

THIS **BILATERAL EMBEDDED GENERATION AGREEMENT** is made on the [ ] day of [ ] 200[ ].

BETWEEN

(1) National Grid Electricity Transmission plc a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns).

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** is required to prepare a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for use of the **GB Transmission System** and pursuant to the **Transmission Licence The Company** is required to offer terms for use of system.

(C) The **User** has applied for use of the **GB Transmission System** in the capacity of [ ] as set out in Paragraph 1.2.4 of the **CUSC**.

(D) As at the date hereof, **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties). This **Bilateral Embedded Generation Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section ~~9~~**11** of the **CUSC** have the same meanings, interpretations or constructions in this **Bilateral Embedded Generation Agreement**. [and the following terms and expressions shall have the meaning set out below:-

["**Circuit [ ]**" [insert detailed description of circuit(s) affected by the design variation] *(power station with **Design Variation** only)*;]

["**Outage Conditions [ ]**" the unavailability of **Circuit [ ]** as a result of

(a) a [planned]/ [unplanned]/ [planned or unplanned] incident occurring directly on **Circuit [ ]**; or

(b) **Circuit [ ]** requiring to be **Deenergised** for health and safety reasons to allow for the planned or unplanned availability of a circuit in the immediate vicinity of **Circuit [ ]** *(power station with **Design Variation** only);*]

["**Outage Period**" the period of time during which the **Outage Conditions** and/or reduced circuit capability apply *(power station with **Design Variation** only).*]]

["**Notification of Circuit Restrictions**" means the notification issued by **The Company** to the **User** in accordance with Clause [9.2] of this **Bilateral Embedded Generation Agreement**; *(power station with **Design Variation** only)*]

["**Notification of Outage Conditions**" means the notification issued by **The Company** to the **User** in accordance with Clause [9.4] of this **Bilateral Embedded Generation Agreement**; *(power station with **Design Variation** only)*]

["**Notification of Restrictions on Availability**" means a **Notification of Outage Conditions** and\or a **Notification of Circuit Restrictions** as applicable; *(power station with **Design Variation** only)*]

["**Relevant Circuits**" means [**Circuit [ ]**]; *(power station with **Design Variation** only)]*

["**Transmission Related Agreement**" means the agreement of even date entered into between the parties for the provision of and payment for **Balancing Services** in respect of **Bid-Offer Acceptances**; *(power station with **Design Variation** only)]*

2. COMMENCEMENT

This **Bilateral Embedded Generation Agreement** shall commence on [ ].

3. THE SITE OF CONNECTION TO THE DISTRIBUTION SYSTEM AND NODES

The [site of **Connection/Node]** of the **Embedded Power Station** [**Distribution Interconnector]** to the **Distribution System** to which **the Use of System rights granted pursuant to** this **Bilateral Embedded Generation Agreement** relates is more particularly described in Appendix A.

[The sites of **Connection** of the **Embedded Power Stations** [**Distribution Interconnector**] to the relevant **Distribution Systems** to which this **Bilateral Embedded Generation Agreement** relates are more particularly described in Appendix A.]

4. CHARGING DATE

The date from which **Use of System Charges** shall be payable by the **User** (including **One-Off Charges** where applicable) shall be **the Charging Date**].

5. USE OF SYSTEM

5.1 The right to use the **GB Transmission System** **at the Node** by means of the access products (other than **Transmission Entry Capacity**) in **CUSC** Section 3, Appendix 3, up to the **User's Local Capacity Nomination** shall commence on and **Use of System Charges** shall be payable by the **User** in respect of these from the date hereof.

5.1 The right to use the **GB Transmission System** at the **Node** by means of **Transmission Entry Capacity** shall only apply where such right has been allocated to the **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and in such circumstances shall commence on and continue for the duration of the **TEC Period**.

5.2 **Transmission Network Use of System Charges** in respect of the **Transmission Entry Capacity** shall be payable from and for the duration of the **TEC Period.**

6. CREDIT REQUIREMENTS

[The amount to be secured by the **User** from [date] is set out in the **Secured Amount Statement** issued from time to time and as varied from time to time in accordance with Section 3 of the **CUSC**.]

7. TRANSMISSION ENTRY CAPACITY

7.1 The **Local Capacity Nomination and Transmission Entry Capacity and TEC Period** ~~of [~~**at** each ~~of the] site[s] of **Connection**~~**Node** is [are] and the[ir] value[s] for the purposes of Paragraph 3.2 of the **CUSC** are specified in Appendix C.

7.2 Appendix C Part 3 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **Connection Site** under the **Balancing and Settlement Code**. The **User** will provide **The Company** with the information needed to complete

details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Local Capacity Nomination** ~~**Transmission Entry Capacity**~~ and **The Company** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **The Company** prior to any alteration in **the BM Unit Identifiers** and **The Company** shall prepare and issue a revised Appendix C incorporating this information.

7.3 **The Company** shall monitor the **Users** compliance with its obligation relating to ~~**Transmission Entry Capacity**~~**Local Capacity Nomination in relation to the [site of Connection]** against the sum of metered volumes of the **BM Units** set out in Part 3 of Appendix C and submitted by the **User** for each **Settlement Period**.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The site specific technical conditions applying to [each of] the site[s] of **Connection** are set out in Appendices F1 to F5 to this **Bilateral Embedded Generation Agreement** as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

9. [RESTRICTIONS ON AVAILABILITY *(power stations with Design Variation only)*

9.1 The design of the connection of the **Distribution System** (to which the **User** is to connect) to the **GB Transmission System** is when studied under Chapter 2 of the **GB SQSS** a variation to the connection design as provided for in that chapter. It is a condition of the **GB SQSS** that any variation to the connection design satisfies the criteria set out in paragraphs 2.15 to 2.18 (inclusive) of the **GB SQSS** and on that basis the following provisions shall apply.

9.2 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of the **Outage Conditions** and where practicable the expected **Outage Period**. Such notice shall be issued:

9.2.1 In the event that the **Notification of Circuit Outage** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, in accordance with **Grid Code** OC2 requirements; or

9.2.2 In the event that the **Notification of Circuit Outage** relates to something other than a **Planned Outage** on the **GB Transmission System** or it relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** 0C2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the method of such notification.

9.2.4 **The Company** shall promptly notify the **User** when the **Outage Period** will or has ceased.

9.3 **The Company** shall be entitled to revise the **Notification of Circuit Outage** given under Clause 9.2 above at any time.

9.4 The **User** will acknowledge receipt of such **Notification of Circuit Outage** and where practicable shall revise its **Output Useable** forecast for the affected **BM Unit** accordingly.

9.5 Following such **Notification of Circuit Outage** in accordance with Clause 9.2:

9.5.1 [(i) In respect of the **Outage Conditions [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the outage of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the outage of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

9.5.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

9.6 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of an event leading to a reduced circuit capability of **Circuit [ ]** and where practicable the expected **Outage Period**. Such notice (including any revision) shall be issued:

9.6.1 In the event that the **Notification of Circuit Restriction** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, in accordance with **Grid Code** OC2 requirements; or

9.6.2 In the event that the **Notification of Circuit Restriction** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the means of such notification.

9.6.3 **The Company** shall promptly notify the **User** when the period of reduced circuit capability will or has ceased.

9.7 **The Company** shall be entitled to revise the **Notification of Circuit Restriction** given under Clause 9.6 above at any time.

9.8 Following such **Notification of Circuit Restriction** in accordance with Clause 9.6:

9.8.1 [(i) In respect of the reduction in capability of **Circuit [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the reduction in capability of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the reduction in capability of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

9.8.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

9.9 Where the **User** becomes aware or is notified by **The Company** of any breach of Clause 9.5 or Clause 9.8 above the **User** shall forthwith take all reasonable steps to comply with the provisions of that Clause.

9.10 Where the **User** breaches in whole or in part the provisions of Clause 9.5 or Clause 9.8 above, the **User** shall at **The Company's** request explain to **The Company's** satisfaction (acting reasonably) the reason for the breach and demonstrate to **The Company's** satisfaction that appropriate steps have been taken to ensure that such breach will not reoccur. In the event that the **User** does not do this **The Company** may give notice to the **User** reducing the ~~**Transmission Entry Capacity**~~ **Local Capacity Nomination** of the **Connection Site** and Appendix C of this **Bilateral Embedded Generation Agreement** shall be varied accordingly. This ~~**Transmission Entry Capacity**~~**Local Capacity Nomination** shall apply until such time as the **User** has explained to **The Company's** reasonable satisfaction the reason for the breach and has demonstrated that appropriate steps have been taken to ensure that such breach will not reoccur and Appendix C shall be automatically amended thereafter to reflect the reinstatement of the ~~**Transmission Entry Capacity**~~**Local Capacity Nomination**.

9.11 If within 3 months of a breach of Clause 9.5 or Clause 9.8 above which entitled **The Company** to take action under Clause 9.10 above, the **User** has still failed to provide the explanation and\or demonstration required by **The Company** under Clause 9.10 then **The Company** may treat such breach as an **Event of Default** for the purposes of Section 5 of the **CUSC** and following such breach may give notice of termination to the **User** whereupon this **Bilateral Embedded Generation Agreement** shall terminate and the provisions of **CUSC** Paragraph 5.4.7 shall apply.

9.12 For the avoidance of doubt any **Deenergisation** resulting from the **Outage Conditions** as set out in the relevant **Notification of Restrictions on Availability** constitutes an **Allowed Interruption**.

9.13.1 **The Company** and the **User** shall act in accordance with **Good Industry Practice** to minimise so far as reasonably practicable the occurrence and duration of (i) the **Outage Conditions and (ii) an Event leading to reduced circuit capability of the relevant circuits**. **The Company** and the **User** will, recognising the effect of the **Outage Conditions** and the reduced circuit capability on the **User's** operations, coordinate the **Outage Conditions** and the reduced circuit capability on the **GB Transmission System** (where they occur as a result of a Planned Outage) and the **User's Plant** and **Apparatus** in accordance with **Good Industry Practice** and to the extent practicable. **Company** and the **User** acknowledge however that even where **Planned Outages** are coordinated and agreed that **The Company** and\or the **User** may need to cancel or change such **Planned Outage**.

9.13.2 **The Company** and the **User** hereby acknowledge and agree that, where practicable, alternative operating arrangements shall be implemented to minimise the effect of **Outage Conditions** [, including, but not limited to [describe potential arrangements]]. In the event that **The Company** and the **User** implement alternative operating arrangements in respect of an **Outage Condition**, the provisions of Clause 9.5 and Clause 9.8 shall not apply to the extent that the alternative operating arrangements mitigate the restrictions (whether in whole or in part) that would otherwise apply to the **User** under this Clause 9 for all **Settlement Periods** or parts thereof falling within the **Outage Period**.

9.14 In the event that the **GB Transmission System** conditions subsequently change such that the conditions required for a design variation under the **GB SQSS** are no longer met then **The Company** shall be entitled to revise Clause 1, this Clause 9 and the **Outage Conditions** as necessary to ensure that such **GB SQSS** conditions continue to be met.]

10. TERM

Subject to the provisions for earlier termination set out in the **CUSC**, this **Bilateral Embedded Generation Agreement** shall continue until all of the **User's** equipment [or **Equipment** for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**] is **Disconnected** from the relevant **Distribution System** at the site[s] of **Connection** as provided in Section 5 of the **CUSC**.

11. VARIATIONS

11.1 Subject to 11.2 and 11.3 and 11.4, no variation to this **Bilateral Embedded Generation Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

11.2 **The Company** and the **User** shall effect any amendment required to be made to this **Bilateral Embedded Generation Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence,** an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

11.3 **The Company** has the right to vary Appendix B in accordance with this **Bilateral Embedded Generation Agreement** and the **CUSC** including any variation necessary to enable **The Company** to charge in accordance with the **Charging Statements** or upon any change to the **Charging Statements**.

11.4 **The Company** has the right after each **Auction Closure Date** to vary Appendix C as necessary to record any **Transmission Entry Capacity** and the **TEC Period** and £/MW figure as allocated to the **User** under the **Long Term Access Auction**.

12. GENERAL PROVISIONS

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Embedded Generation Agreement** *mutatis mutandis*.

13. TEC CANCELLATION CHARGE

In the event of termination of this **Bilateral Connection Agreement** the **User** shall be liable to pay **The Company** the **TEC Cancellation Charge** (if any) due in accordance with **CUSC** Schedule 4, payment in each case to be made within [14 days] of the date of **The Company's** invoice in respect of the same.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission plc)

SIGNED BY)
[name])
for and on behalf of)
[User])

APPENDIX A

THE SITE OF CONNECTION / NODE

1. SITE[s] OF CONNECTION

Company :

Site[s] of Connection :

Node :

Owner[s] / Operator[s] of Distribution System:

APPENDIX B

CHARGES AND PAYMENT

Company :

Site of Connection:

1. PART 1: ONE-OFF CHARGES

2. PART 2: MISCELLANEOUS CHARGE(S)

APPENDIX C

LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

Part 1 Local Capacity Nomination (LCN)

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)
Power Station

Part 2 Transmission Entry Capacity

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

	~~TEC(MW)~~
Power Station	[ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial Year	TEC MW	£/MW	TOTAL CHARGE

Part ~~2~~3 BM Units comprising Power Station

E_BMU 1	(Associated with Genset 1)
E_BMU 2	(Associated with Genset 2)
E_BMU 3	(Associated with Genset 3)
E_BMU 4	(Associated with Genset 4)
E_BMU SD-1	(Station Demand) if applicable
E_BMU AD-1	(Additional Trading Site Demand) if applicable

APPENDIX FI

SITE SPECIFIC TECHNICAL CONDITIONS:

AGREED BALANCING SERVICES

APPENDIX F2

[NOT USED]

APPENDIX F2

SITE SPECIFIC TECHNICAL CONDITIONS:

SPECIAL AUTOMATIC FACILITIES

APPENDIX F3

SITE SPECIFIC TECHNICAL CONDITIONS: PROTECTION AND CONTROL RELAY SETTINGS FAULT CLEARANCE TIMES

APPENDIX F4

SITE SPECIFIC TECHNICAL CONDITIONS:

OTHER

END OF SCHEDULE 2 - EXHIBIT 2

SCHEDULE 2 EXHIBIT 3 PART [x]

INDICATIVE

DATED [ ] 200[1]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

CONSTRUCTION AGREEMENT

Proforma for Power Station Directly Connected to the GB Transmission System and Embedded Power Stations which are the subject of a BEGA

CONTENTS

Appendix N Third Party Works

Appendix R Pre Commissioning Cancellation Charge

[*this will set out the Pre Commissioning Cancellation Charges as calculated in accordance with User Commitment Principles, the profile of the charge and from that the cancellation (and so security) periods*.]

THIS CONSTRUCTION AGREEMENT is made on the [ ] day of [ ] 200[1]

BETWEEN

(1) National Grid Electricity Transmission plc a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** has prepared a Connection and Use of System Code **(CUSC)** setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for [connection to] [and use of] [modification to its connection to] [or use of] the **GB Transmission System** and pursuant to Standard Condition C8 of the **Transmission Licence**, **The Company** is required to offer terms in accordance with the **CUSC** in this respect **or** [specific recital to reflect that the **Construction Agreement** is an amendment of an existing signed offer pursuant to the **CUSC** amending documents]

(C) **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties).

(D) Certain works are required as part of this offer as set out in this **Construction Agreement.** These works are required for the purposes of the **Local Capacity Nomination**.

(E) This **Construction Agreement** is entered into pursuant to the terms of the **CUSC**.

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

1.1 Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** and in the Bilateral Connection Agreement have the same meanings, interpretations or constructions in this **Construction Agreement**.

“Bilateral Connection Agreement”	the **Bilateral Connection Agreement** entered into between the parties on even date herewith.
“Backstop Date”	the date specified as such in the **Construction Programme**.
“Pre Commissioning Cancellation Charge”	the sum calculated in accordance with the **User Commitment Principles** payable by the **User** on termination of this **Construction Agreement** prior to the **Completion Date** such sum being that specified in the Table in Appendix R by reference to the **Cancellation Period** in which this **Construction Agreement** is terminated.
"Bilateral Embedded Generation Agreement"	the **Bilateral Embedded Generation Agreement** entered into between the parties on even date herewith.
Cancellation Period(s)”	the [periods] [**Financial Years**] identified within the **Cancellation Charge** profile and specified in Appendix R.
“Capacity Reduction Charge”	the sum calculated in accordance with the **User Commitment Principles** payable by the **User** under Clause 2.17 and Clause 7 in respect of a reduction in **LCN** prior to the **Completion Date**.
"Charging Date"	the date upon which the **Construction Works** are first **Commissioned** and available for use by the **User** or if the **Independent Engineer** before, on or after the **Commissioning Programme Commencement Date** shall have certified in writing that the **Transmission Connection Assets**, are completed to a stage where **The Company** could commence commissioning and by such date the **User’s Works** shall not have been so certified then the date falling **[ ]** days after the date of such certification, provided that the **LCN Transmission Reinforcement Works** are **Commissioned** and **Seven Year Statement Works** are completed as at

	that date. In the event that the **LCN Transmission Reinforcement Works** are not so **Commissioned** and/or the **Seven Year Statement Works** are not so completed the **Charging Date** shall be the date on which they are **Commissioned** and/or completed as appropriate.
"Commissioning Programme Commencement Date"	the date specified in the **Construction Programme** for the commencement of the **Commissioning Programme** or any substituted date fixed under the terms of this **Construction Agreement**
"Commissioning Programme"	the sequence of operations/tests necessary to connect the **User's Works** and the **Transmission Connection Asset Works/LCN Transmission Reinforcement Works** to the **GB Transmission System** for the purpose of making the **User's Works** available for operation to be determined pursuant to Clause 2.10 of this **Construction Agreement**.
"Completion Date"	[ ] or such other date as may be agreed in terms of this **Construction Agreement**.
"Connected Planning Data"	data required pursuant to the **Planning Code** which replaces data containing estimated values assumed for planning purposes by validated actual values and updated estimates for the future and by updated forecasts for forecast data items.
"Consents"	in relation to any **Works**:- (a) all such planning and other statutory consents; and (b) all wayleaves, easements, rights over or interests in land or any other consent; or (c) permission of any kind as shall be necessary for the construction of the **Works** and for commencement and carrying on of any activity proposed to be

	undertaken at or from such **Works** when completed.
“Construction Programme”	the agreed programme for the **Works** to be carried out by **The Company** and the **User** set out in detail in Appendix [J] to this **Construction Agreement** or as amended from time to time pursuant to Clauses 2.3 and 3.2 of this **Construction Agreement**.
"Construction Site"	the site where the **Transmission Connection Asset Works** are being undertaken by or on behalf of **The Company**;
“Construction Works”	the **Transmission Connection Asset Works**, **LCN Transmission Reinforcement Works**, **Seven Year Statement Works** and **One Off Works** and such additional works as are required in order to comply with any relevant **Consents** relating to any such works but excluding for the avoidance of doubt any **Third Party Works**.
"Dispute Resolution Procedure”	the procedure for referral to arbitration set out in Paragraph 7.4 of the **CUSC**.
“Event of Default”	any of the events set out in Clause 10 of this **Construction Agreement** as constituting an event of default.
“Final Sums”	the amount payable by the **User** on termination of this **Construction Agreement** being the aggregate from time to time and for the time being of:-
	(1) all **The Company Engineering Charges** arisen prior to the date of termination;
	(2) fees, expenses and costs (excluding costs on account of interest charges incurred by **The Company**) of whatever nature reasonably and properly incurred or due by **The Company** in respect of any part of the **One Off**

Works carried out prior to the date of termination of this **Construction Agreement**;

(3) fees, expenses and costs properly payable by **The Company** in respect of, or arising from the termination by it or any third party of any contract for or relating to the carrying out of any **One Off Works** provided it is negotiated on an arms length basis (including any such arising under the **STC**);

(4) fees, expenses and costs due in accordance with Clause 2.4.1; and

(5) interest on any such amounts from the date they were paid by The Company to the date of The Company's invoice at 2% over **Base Rate** from time to time and for the time being.

Any dispute as to the amount of **Final Sums** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.

"Independent Engineer" the engineer specified in Appendix L to this **Construction Agreement.** Provided that:-

(a) where the parties fail to agree on a suitable engineer within 120 days of the date of this **Construction Agreement**; or

(b) where any **Independent Engineer** appointed from time to time shall fail, refuse or cease to act in the capacity set out herein and no substitute engineer of suitable standing and qualification can be agreed by the parties within 30 days;

then such engineer as the President of

	the Institution of Engineering and Technology shall, on the application of either party, nominate shall be the **Independent Engineer**.
"Late Delivery Arrangements"	the arrangements as set out in the **SO Long Term Release Methodology**, to apply in the event that the circumstances provided for in Clause 4.5 arise.
"Liquidated Damages"	the sums specified in or calculated pursuant to Appendix K to this **Construction Agreement.**
"LCN Transmission Reinforcement Works"	those works other than the **Transmission Connection Asset Works**, **Seven Year Statement Works** and **One Off Works**, which in the reasonable opinion of **The Company** are necessary to extend or reinforce the **GB Transmission System** in relation to and prior to the operation of the **User's Equipment** at the **Connection Site** for the purposes of its **Local Capacity Nomination** and which are specified in Appendix H to this **Construction Agreement**.
"Notice of Intent"	the notice issued by **The Company** pursuant to Clause 7.4.4
"Notice of Reduction"	the notice issued by **The Company** pursuant to Clause 7.4.7 including a revised Appendix C specifying the revised **Local Capacity Nomination**.
"One Off Works"	the works described in Appendix B1 to this **Construction Agreement**.
"Preliminary Request"	the request issued by **The Company** pursuant to Clause 7.4.1.
"Reduction Fee"	the fee payable by the **User** to **The Company** in respect of the agreement to vary issued pursuant to Clause 7.4.9 such fee being calculated on the same basis as that set out in the **Charging Statements** as payable on a payment of actual costs basis in respect of a

	Modification Application.
“Term”	the term of this **Construction Agreement** commencing on the date hereof and ending in accordance with Clause 12.
“Third Party Works”	the works to be undertaken on assets belonging to a party other than **The Company** and the **User** to enable it to provide or as a consequence of the connection to and\or use of the **GB Transmission System** by the **User** as specified in Appendix N.
"Transmission Connection Assets"	the assets specified in Appendix A to the **Bilateral Connection Agreement**.
“Transmission Connection Asset Works”	the works necessary for construction and installation of the **Transmission Connection Assets** at the **Connection Site** specified in Appendix G to this **Construction Agreement**.
“User Commitment Principles”	the methodology relating to the application and calculation of the **Pre Commissioning Cancellation Charge** and **Capacity Reduction Charge** set out in **CUSC** Schedule 4 as it may be amended from time to time.
“User’s Works”	those works necessary for installation of the **User’s Equipment** which are specified in Appendix I to this **Construction Agreement**.
“Works”	the **Construction Works** and the **User’s Works**.

[1.2 The **User** does not wish to proceed on the basis of this **Construction Agreement** [or the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**] until the outcome of the **Long Term Access Auction** to be held in [ ] is known.

1.2.1 The rights and obligations of the **User** and **The Company** under this **Construction Agreement** (with the exception of those rights and obligations under or referred to in this clause 1.2) are therefore subject to (and neither

party shall have any rights or obligations under any other provisions of this **Construction Agreement**) the **User** being allocated **Transmission Entry Capacity** under the **Long Term Access Auction** or the **User** otherwise confirming to **The Company** in writing within [5] **Business Days** of **Auction Closure Date** that it wishes this **Construction Agreement** [and the **Bilateral Connection Agreement** or **Embedded Generation Agreement**] to become effective notwithstanding that it has not been allocated any **Transmission Entry Capacity**.

1.2.2 In the event that the **User** is not allocated **Transmission Entry Capacity** and does not confirm to **The Company** within the timescales in accordance with Clause 1.2.1 then **The Company** shall be entitled to terminate this **Construction Agreement** by notice in writing.

2. CARRYING OUT OF THE WORKS

2.1 Forthwith following the date of this **Construction Agreement** (i) in respect of **Connection Sites** in England and Wales **The Company** and the **User** shall agree the **Safety Rules** and **Local Safety Instructions** to apply during the **Construction Programme** and **Commissioning Programme**; and (ii) in respect of **Connection Sites** in Scotland the **User** shall agree with the **Relevant Transmission Licensee** the **Safety Rules** and **Local Safety Instructions** to apply during the **Construction Programme** and **Commissioning Programme**. Failing agreement within three months of the date of this **Construction Agreement** the matter shall be referred to the **Independent Engineer** for determination in accordance with Clause 6 of the **Construction Agreement**.

2.2 Subject to Clauses 2.3 and 2.4 of this **Construction Agreement** forthwith following the date of this **Construction Agreement The Company** shall use its best endeavours to obtain in relation to the **Construction Works**, and the **User** shall use its best endeavours to obtain in relation to the **User's Works**, all **Consents**. Each shall give advice and assistance to the other to the extent reasonably required by the other in the furtherance of these obligations. Further, each party shall, so far as it is legally able to do so, grant to, in relation to **Connection Sites** in England and Wales, the other, or in relation to **Connection Sites** in Scotland, the **Relevant Transmission Licensee,** all such wayleaves, easements, servitude rights, rights over or interests (but not estates as regards land in England and Wales and not heritable or leasehold interests as regards land in Scotland) in land or any other consents reasonably required by the other or the **Relevant Transmission Licensee** in order to enable the **Works** to be expeditiously completed and to enable that other to carry out its obligations to the other under this **Construction Agreement** and in all cases subject to such terms and conditions as are reasonable.

2.3 The following additional provisions shall apply in respect of the **Consents** and **Construction Works**:-

2.3.1 All dates specified in this **Construction Agreement** are subject to **The Company** obtaining **Consents** for the **Construction Works** in a form acceptable to it within the time required to carry out the **Construction Works** in accordance with the **Construction Programme**.

2.3.2 In the event of:-

(a) the **Consents** not being obtained by the required date; or

(b) the **Consents** being subject to conditions which affect the dates; or

(c) **The Company** wishing to amend the **Construction Works** to facilitate the granting of the **Consents**,

The Company shall be entitled to revise the **Construction Works** (and as a consequence Appendix A to the **Bilateral Connection Agreement**) and Appendix R to and all dates specified in this **Construction Agreement** and the charges specified in Appendix B to the **Bilateral Connection Agreement**. For the avoidance of doubt such revisions shall be at **The Company's** absolute discretion and the consent of the **User** is not required.

2.3.3 The **User** shall be regularly updated by **The Company** in writing or by such other means as the parties may agree as to progress made by **The Company** from time to time in the obtaining of relevant **Consents** pursuant to its obligations under Clause 2.2 or 2.3 of this **Construction Agreement**.

2.4.1 The **User** shall be liable to pay to **The Company** as part of any **Final Sums** due:-

(a) all **The Company 's Engineering Charges** accrued; and

(b) proper and reasonable out-of-pocket expenses incurred and/or paid or which **The Company** is legally bound to incur or pay

in seeking and obtaining the **Consents** the subject of Clause 2.2 of this **Construction Agreement** in respect of the **One off Works**.

The **User** acknowledges these out of pocket ancillary expenses may include planning inquiries or appeals. **The Company** shall keep the **User** informed of the level of such charges and expenses being incurred.

2.4.2 Paragraphs 11.2.3 to 11.2.5 of the **CUSC** relating to **Consents** shall apply to the **Construction Agreement** as if set out here in full.

2.5 The **User** shall have the right to terminate this **Construction Agreement** at any time upon giving not less than 7 (seven) days notice in writing to **The Company**. Upon such termination the provisions of Clause 11 shall apply.

2.6 If the **User** fails to obtain all **Consents** for the **User's Works** having complied with the obligations in Clause 2.2 of this **Construction Agreement** the obligation on the **User** to complete the **User's Works** shall cease and the **User** may by written notice to **The Company** terminate this **Construction Agreement**. Upon such termination the provisions of Clause 11 shall apply.

2.7 Both parties shall be entitled to contract or sub-contract for the carrying out of their respective parts of the **Works** (which in the case of **The Company** shall include work carried out by a **Relevant Transmission Licensee** or its contractors or sub-contractors). The **User** or any contractor on its behalf shall be responsible for commencing and for carrying out the **User's Works** to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme** and **The Company** or any contractor on its behalf shall be responsible for commencing and carrying out the **Construction Works** to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme**.

2.8 The parties shall continuously liaise throughout the **Construction Programme** and **Commissioning Programme** and each shall provide to the other all information relating to its own **Works** reasonably necessary to assist the other in performance of that other's part of the **Works**, and shall use all reasonable endeavours to coordinate and integrate their respective part of the **Works**. There shall be on-site meetings between representatives of the parties at intervals to be agreed between the parties. Each party shall deliver to the other party a written report of progress during each calendar quarter within 7 days of the end of that quarter.

2.9 During the period of and at the times and otherwise as provided in the **Construction Programme** and the **Commissioning Programme The Company** shall allow the **User**, its employees, agents, suppliers, contractors and sub-contractors necessary access to the **Construction Site** and the **User** shall allow **The Company** or, in the case of **Connection Sites** in Scotland, the **Relevant Transmission Licensee** and in either case their employees, agents, suppliers, contractors and sub-contractors necessary access to its site to enable each to carry out the **Transmission Connection Asset Works** and **One Off Works** or **User's Works** but not so as to disrupt or delay the construction and completion of the other's **Works** on the said sites or the operation of the other's **Plant** and **Apparatus** located thereon, such access to be in accordance with any reasonable regulations relating thereto made by the site owner or occupier.

2.10 Not later than six months prior to the **Commissioning Programme Commencement Date The Company** shall provide the **User** with a draft **Commissioning Programme** for the **Commissioning** of the **Transmission Connection Assets**, and the **User's Equipment**. The **User** shall, as quickly

as practicable and in any event within three months of receipt thereof, determine whether or not to approve the proposed **Commissioning Programme** (which approval shall not be unreasonably withheld or delayed) and shall within such three month period either notify **The Company** of its approval or, in the event that the **User** reasonably withholds its approval, notify **The Company** of any changes or variations to the proposed commissioning programme recommended by the **User**. If **The Company** does not accept such changes or variations submitted by the **User** any dispute shall be referred to the **Independent Engineer** for determination. The **Commissioning Programme** agreed between the parties or determined by the **Independent Engineer** as the case may be shall be implemented by the parties and their sub-contractors in accordance with its terms.

2.11 If at any time prior to the **Completion Date** it is necessary for **The Company** or **The Company** in its reasonable discretion wishes to make any addition to or omission from or amendment to the **Transmission Connection Asset Works** and/or **LCN Transmission Reinforcement Works** and/or the **One Off Works** and/or the **Third Party Works The Company** shall notify the **User** in writing of such addition, omission or amendment and Appendices [B1 (One Off Works), G (**Transmission Connection Asset Works**) H (**LCN Transmission Reinforcement Works**) and N (**Third Party Works**)] to this **Construction Agreement** and consequently Appendix R hereto and Appendices [A (**Transmission Connection Assets**) and B (**Connection Charges** and **One Off Charges**)] to the associated **Bilateral Connection Agreement** shall be automatically amended to reflect the change.

2.12 [The **User** shall apply to the Secretary of State for the Department of Energy and Climate Change as part of its application under Section 36 of the Act for its generating station, for deemed planning permission in relation to the substation forming part of the **Transmission Connection Asset Works**. The **User** shall use its best endeavours to procure that the said deemed planning permission is so obtained. **The Company's** obligations under Clause 2.2 of this **Construction Agreement** shall not require it to obtain planning consent for the said substation unless and until the Secretary of State for the Department of Energy and Climate Change shall for whatever reason refuse to deem the grant of planning permission in respect of the same. The **User** shall liaise with **The Company** as to its construction and operational requirements and shall ensure that the said application meets **The Company's** requirements. **The Company** shall provide the **User** with all information reasonably required by it in relation to the application and the **User** shall ensure that all requirements of **The Company** are incorporated in the application for deemed planning consent.]

2.13 [The **LCN Transmission Reinforcement Works** are conditional on British Energy Generation Limited and/or Magnox Electric plc (as the case may be)granting approval to the carrying out of the **Construction Works** in terms of the Nuclear Site Licence Provisions Agreement being an agreement dated 30 March 1990 between **The Company** and Nuclear Electric plc (now called Magnox Electric plc) and an agreement dated 31 March 1996 between **The Company** and British Energy Generation Limited (and described as such). In

the event of British Energy Generation Limited and/or Magnox Electric plc (as the case may be) not granting approval **The Company** shall be entitled to change the **Construction Works**, the **Construction Programme** and all dates specified in and Appendix R to this **Construction Agreement**.]

2.14 [It is hereby agreed and declared for the purposes of the Construction (Design and Management) Regulations 2007 that the **User** is the only client in respect of the **User's Works** and **The Company** is the only client in respect of the **Construction Works** and each of the **User** and **The Company** shall accordingly discharge all the duties of clients under the said **Regulations**.]

2.15 [**The Company** and the **User** hereby agree and acknowledge that this **Construction Agreement** is not to be treated as a construction contract within the meaning of section 104 of the Housing Grants, Construction and Re-generation Act 1996 and sections 104 to 113 of the said Act shall have no application either to the **Construction** Works or the **User's Works** and the parties' rights and obligations with regard to matters of dispute resolution and payment procedures are as expressly set out herein.]

2.16 **Third Party Works**

2.16.1 The **User** shall be responsible for carrying out or procuring that the **Third Party Works** are carried out and shall carry them out or procure that they are carried out in accordance with the timescales specified in the **Construction Programme**. The **User** shall confirm to **The Company** or, where requested to do so by **The Company**, provide confirmation from the third party that the **Third Party Works** have been completed.

2.16.2 Given the nature of these works it may not be possible to fully identify the works required or the third parties they relate to at the date hereof. Where this is the case **The Company** shall, subject to 2.16.3 below, advise the **User** as soon as practicable and in any event by [ ] of the **Third Party Works** and shall be entitled to revise Appendix N and as a consequence the **Construction Programme** and as a consequence Appendix R as necessary to reflect this.

2.16.3 Where **Third Party Works** are likely to be **Modifications** required to be made by another user(s) ("the "**First User(s)**") as a consequence of **Modifications** to the **GB Transmission System** to be undertaken by **The Company** under this **Construction Agreement** **The Company** shall as soon as practicable after the date hereof issue the notification to such **First User's** in accordance with **CUSC** Paragraph 6.9.3.1. The **User** should note its obligations under **CUSC** Paragraph 6.10.3 in respect of the costs of any **Modifications** required by the **First User(s**).

2.16.4 In the event that the **Third Party Works** have not been completed by the date specified in the **Construction Programme** or, in **The Company's** reasonable opinion are unlikely to be completed by

such date, **The Company** shall be entitled to revise the **Construction Programme** as necessary to reflect such delay and also, where **The Company** considers it necessary to do so, shall be entitled to revise the **Construction Works** (and as a consequence Appendices R hereto and A and B to the **Bilateral Connection Agreement**). For the avoidance of doubt such revisions shall be at **The Company's** absolute discretion and the consent of the **User** is not required. Further, in the event that the **Third Party Works** have not been completed by [ ] **The Company** shall have the right to terminate this **Construction Agreement** upon giving notice in writing to the **User** and in this event the provisions of Clause 11 of this **Construction Agreement** shall apply.

2.17 If at anytime prior to the **Completion Date** the **User** makes a **Modification Application** to reduce it's **Local Capacity Nomination** then on acceptance by the **User** of the resulting **Modification Offer** the **User** shall forthwith be liable to pay to **The Company** the **Capacity Reduction Charge** such payment to be made within 14 days of the date of **The Company's** invoice in respect thereof.

3. DELAYS

3.1 If either party shall have reason to believe that it is being delayed or will be delayed in carrying out that party's **Works** for any reason (whether it is one entitling it to the fixing of a new date under Clause 3.2 of this **Construction Agreement** or not) it shall forthwith notify the other party in writing of the circumstances giving rise to the delay and of the extent of the actual and/or anticipated delay.

3.2 If prior to the **Completion Date** a party (in this Clause 3.2 "the **Affected Party**") shall be delayed in carrying out any of the **Affected Party's Works** (including their commissioning) by reason of any act, default or omission on the part of the other Party (in this Clause the "**Defaulting Party**") or the **Defaulting Party's** employees, agents, contractors or sub-contractors or by reason of an event of **Force Majeure**, the **Affected Party** shall be entitled to have such later date or dates fixed as the **Commissioning Programme Commencement Date** and/or (as the case may be) the **Completion Date** as may be fair and reasonable in the circumstances provided that it shall have notified the **Defaulting Party** in writing of such act, default or omission or event of **Force Majeure** within 28 days of it becoming aware of the occurrence giving rise to the delay together with an estimate of the proposed delay which it will cause the **Affected Party**. In the event of a dispute between the parties over what is or are any fair and reasonable new date or dates to be fixed in the circumstances this shall be promptly referred to and determined by the **Independent Engineer**. Once the new date or dates are fixed the **Construction Programme** and/or **Commissioning Programme** shall be deemed automatically amended as appropriate and The Company shall be entitled to amend Appendix R as necessary to reflect this.

4. COMMISSIONING PROGRAMME AND LIQUIDATED DAMAGES AND LATE DELIVERY

4.1 Each party shall give written notice to the other declaring its readiness to commence the **Commissioning Programme** when this is the case.

4.2 The **Commissioning Programme** shall commence forthwith once both parties have given written notice to the other under Clause 4.1.

4.3 The **Works** shall be deemed to have been **Commissioned** on the date that the **Independent Engineer** certifies in writing to that effect.

4.4 In the event that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme Commencement Date The Company** (if and to the extent that it is responsible for delayed commissioning beyond the **Commissioning Programme Commencement Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable to pay to the **User Liquidated Damages** for each day that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme Commencement Date**. It is declared and agreed that such **Liquidated Damages** shall cease to be payable in respect of any period after the date of actual commencement of the **Commissioning Programme**.

4.5 In the event that the actual date on which the **Construction Works** are **Commissioned** is later than the **Completion Date The Company** (if and to the extent that it is responsible for delayed completion beyond the **Completion Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable:

(a) to pay to the **User Liquidated Damages** for each day that the actual date on which the **Construction Works** are **Commissioned** is later than the **Completion Date**. It is hereby agreed and declared that such **Liquidated Damages** shall cease to be payable in respect of any period after completion of the **Construction Works**; and

(b) to take the steps with regard to the **Transmission Entry Capacity** (if any) allocated to the **User** under the **Long Term Access Auction** which it is unable to utilise as a result of the delayed completion of the Construction Works beyond the **Completion Date** in the manner set out in the **Late Delivery Arrangements**.

4.6 **Liquidated Damages** payable under Clauses 4.4 and 4.5 of this **Construction Agreement** shall accumulate on a daily basis but shall be payable calendar monthly. On or before the 15th day of each month the party entitled to receive the payment of **Liquidated Damages** shall send to the other party a statement of the **Liquidated Damages** which have accrued due

in the previous calendar month. The party receiving such statement shall in the absence of manifest error pay the **Liquidated Damages** shown on the statement within 28 days of the date upon which the statement is received.

4.7 The payment or allowance of **Liquidated Damages** and the arrangements under the **Late Delivery Arrangements** pursuant to this Clause 4 shall be in full satisfaction of **The Company's** liability for failure to perform its obligations by the **Commissioning Programme Commencement Date** and/or the **Completion Date** as appropriate.

4.8 In the event that the **User** shall have failed, in circumstances not entitling it to the fixing of a new date as the **Commissioning Programme Commencement Date** pursuant to Clause 3.2, to complete the **User's Works** by the **Backstop Date** to a stage where the **User** is ready to commence the **Commissioning Programme**, **The Company** shall have the right to terminate this **Construction Agreement** upon giving notice in writing to the **User**. Upon such termination the provisions of Clause 11 shall apply. .

5. APPROVAL TO CONNECT/ENERGISE/BECOME OPERATIONAL

5.1 Not later than 4 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under CC 7.4.7 and 7.4.10 and likewise the **Site Common Drawings** required under CC 7.5.2 and 7.5.4 and, if necessary, **Gas Zone Diagrams** referred to in CC 7.4.9 and 7.4.12.

5.2 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under CC 7.4.8 and 7.4.11 and likewise the Site **Common Drawings** required under CC 7.5.3 and 7.5.5.

5.3 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties:-

5.3.1 each party shall submit to the other data within its possession needed to enable the completion of Appendices F3 and F4 to the **Bilateral Connection Agreement**; and

5.3.2 the **User** shall submit to **The Company** evidence satisfactory to **The Company** that the **User's Equipment** complies or will on completion of the **User's Works** comply with Clause 8 of this **Construction Agreement** and Paragraphs [1.3.3(b), 2.9 and 6.7] of the **CUSC**.

5.4 Not later than 8 weeks prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties each party shall submit to the other:

5.4.1 for the **Connection Site** information to enable preparation of **Site Responsibility Schedules** complying with the provisions of Appendix 1 to the **Connection Conditions** together with a list of managers who have been duly authorised by the **User** to sign such **Site Responsibility Schedules** on the **User's** behalf;

5.4.2 written confirmation as required under CC.5.2.1(g) that the list of **Safety Co-ordinators** are authorised and competent [and a list of persons appointed pursuant to **Grid Code** CC5.2(m)];

5.4.3 a list of the telephone numbers for the facsimile machines referred to in CC6.5.9.

5.5 If directly connected to the **GB Transmission System** not later than 3 months prior to the expected **Commissioning Programme Commencement Date** each party shall submit to the other a statement of readiness to complete the **Commissioning Programme** in respect of the **Works** and the statement submitted by the **User** shall in addition contain relevant **Connected Planning Data** and a report certifying to **The Company** that, to the best of the information, knowledge and belief of the **User**, all relevant **Connection Conditions** applicable to the **User** have been considered and complied with. If **The Company** considers that it is necessary, it will require this latter report to be prepared by the **Independent Engineer**. The report shall incorporate if requested by **The Company** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria specified in CC6.

5.6 If embedded not later than 3 months prior to the **Charging Date** or by such other time as may be agreed between the **Parties** the **User** shall submit to **The Company** a statement of readiness to use the **GB Transmission System** together with **Connected Planning Data** and a report certifying to **The Company** that, to the best of the information, knowledge and belief of the **User**:-

(i) all relevant **Connection Conditions** applicable to the **User** have been considered;

(ii) CC 6 insofar as it is applicable to the **User** has been complied with; and

(iii) the site-specific conditions set out in Appendices [F1, F3, F4] and [F5] to the **Bilateral Embedded Generation Agreement** have been complied with.

If **The Company** considers that it is necessary, it will require this report to be prepared by the **Independent Engineer**. The report shall incorporate if

requested by **The Company** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria.

6. INDEPENDENT ENGINEER

The parties agree and shall procure that the **Independent Engineer** shall act as an expert and not as an arbitrator and shall decide those matters referred or reserved to him under this **Construction Agreement** by reference to **Good Industry Practice** using his skill, experience and knowledge and with regard to such other matters as the **Independent Engineer** in his sole discretion considers appropriate. All references to the **Independent Engineer** shall be made in writing by either party with notice to the other being given contemporaneously as soon as reasonably practicable and in any event within 14 days of the occurrence of the dispute to be referred to the **Independent Engineer**. The parties shall promptly supply the **Independent Engineer** with such documents and information as he may request when considering such question. The **Independent Engineer** shall use his best endeavours to give his decision upon the question before him as soon as possible following its referral to him. The parties shall share equally the fees and expenses of the **Independent Engineer**. The parties expressly acknowledge that submission of disputes for resolution by the **Independent Engineer** does not preclude subsequent submission of disputes for resolution by arbitration as provided for in the **Dispute Resolution Procedure**. Pending any such submission the parties shall treat the **Independent Engineer's** decision as final and binding.

7. BECOMING OPERATIONAL

7.1 If directly connected to the **GB Transmission System The Company** shall connect and **Energise** the **User's Equipment** at the **Connection Site** during the course of and in accordance with the **Commissioning Programme** and thereafter upon compliance by the **User** with the provisions of Clause 5 and provided (1) the **Construction Works** excluding the **Seven Year Statement Works** shall be **Commissioned** and (2) the **Seven Year Statement Works** and **Third Party Works** shall be completed **The Company** shall forthwith notify the **User** in writing that the **Connection Site** shall become **Operational** for the purposes of its **Local Capacity Nomination**.

7.2 If **Embedded** upon compliance by the **User** with the provisions of Clauses 5.1, 5.2 and 5.3 and subject, if **The Company** so requires, to the **LCN Transmission Reinforcement Works** [and/or works for the **Modification**] being carried out and/or the [**New] Connection Site** being **Operational** (any or all as appropriate) **The Company** shall forthwith notify the **User** ("**Operational Notification**") in writing that it has the right to use the **GB Transmission System** for the purposes of its **Local Capacity Nomination**. It is an express condition of this **Construction Agreement** that in no circumstances, will the **User** use or operate the **User's Equipment** without receiving the **Operational Notification** from **The Company**.

7.3 Not Used

7.4 **Local Capacity Nomination Reduction**

7.4.1 If, at any time prior to the **Completion Date The Company** reasonably believes from data provided by the **User** to **The Company**, the reports provided by the **User** pursuant to Clause 2.8 and Clause 5 of this **Construction Agreement**, the commissioning process under the **Construction Agreement** or otherwise that the **User's Equipment** will be such that it will not be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall advise the **User** accordingly in writing setting out its reasons for this belief, the source of the information giving rise to the concern and seeking clarification from the **User**.

7.4.2 The **User** shall respond to **The Company** within 15 **Business Days** of the date of the **Preliminary Request** providing such information or data as is necessary to satisfy **The Company's** concerns set out in the **Preliminary Request** and making any amendments necessary to the report provided by the **User** pursuant to Clause 2.8 and / or data provided by the **User** to **The Company** to reflect this.

7.4.3 In the event that **The Company** is satisfied from the information provided in accordance with Clause 7.4.2 by the **User** that the **User's Equipment** will be such that it will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall notify the **User** accordingly.

7.4.4 In the event that the **User** does not respond to the **Preliminary Request** or, notwithstanding the **User's** response, **The Company** remains of the view that the **User's Equipment** will be such that it will not reasonably be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall inform the **User** in writing that it intends to amend Clause 7 and Appendix C to the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] to reflect the **Local Capacity Nomination** that it reasonably believes to be the level of power that the **User's Equipment** will be capable of exporting .

7.4.5 The **User** shall respond to the **Notice of Intent** within 15 **Business Days** of the date of the **Notice of Intent** explaining why it still reasonably believes that its **User's Equipment** will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination** or at more than the MW figure proposed by **The Company** in the **Notice of Intent** or providing a reasonable explanation as to why this is not the case.

7.4.6 In the event that **The Company** is satisfied from the information provided in accordance with Clause 7.4.5 by the **User** that the **User's Equipment** will be such that it will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall notify the **User** accordingly.

7.4.7 Where notwithstanding the **User's** response to the **Notice of Intent The Company** remains of the view that the **User's Equipment** will be such that it will not reasonably be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination** or at more than the MW figure proposed by **The Company** in the **Notice of Intent** or the **User** does not provide a response that is satisfactory to **The Company** within the timescale specified in 7.4.5 above **The Company** will issue the **Notice of Reduction** to the **User** and will send a copy of the same to the **Authority**.

7.4.8 Unless during such period the matter has been referred by the **User** to the **Authority** for determination by the **Authority** under the provisions of Standard Condition C9 Paragraph 4 of the **Transmission Licence**, the **Notice of Reduction** shall take effect on the day 15 **Business Days** after the date of the **Notice of Reduction** and Appendix C of the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] shall be amended on that date in the manner set out in the **Notice of Reduction**. Where the matter has been referred the amendments to Appendix C of the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] and the date they take effect shall be as set out in the Authority's determination.

7.4.9 After a **Notice of Reduction** has taken effect **The Company** shall be entitled to make such amendments to this **Construction Agreement** as it requires as a result of the reduction in the **Local Capacity Nomination** effected by the **Notice of Reduction** and as a consequence to the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**]. **The Company** shall advise the **User** as soon as practicable and in any event within 3 months of the date of the **Notice of Reduction** (or if the matter has been referred by the **User** to the **Authority** for determination, the date of determination) of such amendments by way of offer of an agreement to vary the **Construction Agreement** and [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**]. This agreement to vary will also provide for payment by the **User** of the **Reduction Fee** where applicable. The parties acknowledge that any dispute regarding this variation shall be referable to and determined by the **Authority** under the provisions of Standard Condition C9 Paragraph 4 of the **Transmission Licence**.

7.4.10 On the date that the **Notice of Reduction** takes effect the **User** shall be liable to pay to **The Company** the **Capacity Reduction Charge**

such payment to be made within 14 days of the date of **The Company's** invoice therefor.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The **User** shall ensure that on the **Completion Date** the **User's Equipment** complies with the site specific technical conditions set out in Appendices F1 to F5 to the **Bilateral Connection Agreement**.

9. SECURITY REQUIREMENTS and FINAL SUMS RECONCILIATION

9.1 Security

The **User** shall provide security to **The Company** in accordance with **CUSC** Schedule 4 in respect of the **User's** obligations to pay the **Final Sums** and **Pre Commissioning Cancellation Charge** to **The Company** on termination of this **Construction Agreement**.

9.2 Final Sums Reconciliation

9.2.1 Within 60 days of the date of termination of this **Construction Agreement The Company** shall:

(a) furnish **the User** with a statement showing a revised estimate of **Final Sums** and will provide as soon as practicable evidence of such costs having been incurred; and

(b) by written notice to **the User** inform **the User** of all capital items which cost **The Company** in excess of £10,000 and in relation to which an amount on account of **Final Sums** shall have been paid and whether **The Company** (1) wishes to retain the said capital items or (2) dispose of them.

9.2.2 In respect of all capital items which **The Company** wishes to retain (other than those which have been, or are proposed to be installed as a replacement for **Transmission Plant** and **Transmission Apparatus**) **The Company** shall forthwith reimburse to the **User** the amount paid by the **User** on account of **Final Sums** in respect of the said capital items (including without limitation the amount paid on account of the design, purchase, installation and testing of the said capital item and also associated construction works and interest charges) together with interest calculated thereon on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time provided that in the event that **The Company** wishes to retain any capital item which has been installed but wishes to remove it to

storage or to another site then it shall only reimburse to the **User** the cost of the capital item and not the costs of such installation and shall deduct from any reimbursement due to the **User** the costs of removal and/or storage.

9.2.3 In respect of all capital items which **The Company** wishes to dispose (other than those which have been, or are proposed to be installed as a replacement for **Transmission Plant** and **Transmission Apparatus**) it shall forthwith (and subject to **The Company** obtaining the consent of the **Authority** under Standard Condition B3 of the **Transmission Licence** if required and\or subject to any **Relevant Transmission Licensee** obtaining the consent of the **Authority** under Standard Condition B3 of its transmission licence) sell or procure the sale of the said capital item on an arms-length basis as soon as reasonably practicable. Forthwith upon receipt of the sale proceeds **The Company** shall pay to the **User** the proceeds received from any such sale together with interest thereon calculated on a daily basis from the date of termination to the date of payment at **Base Rate** for the time being and from time to time less any reasonable costs associated with the sale including the costs and expenses reasonably incurred and/or paid and/or which **The Company** is legally bound to pay on removing the capital item, any storage charges and any costs reasonably incurred by **The Company** in respect of reinstatement associated with removal of the capital item. **The Company** shall provide the **User** with reasonably sufficient evidence of all such costs and expenses having been incurred. If the **Authority** does not agree to the disposal of the capital item the capital item shall be retained by **The Company** and **The Company** shall reimburse the **User** the notional current market value in situ of the said capital item as between a willing buyer and a willing seller as agreed between the parties and failing agreement as determined by reference to arbitration in accordance with the **Dispute Resolution Procedure** together with interest thereon calculated on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time.

9.2.4 As soon as reasonably practicable after termination of this **Construction Agreement The Company** shall provide the **User** with a statement of and invoice for **Final Sums** together with evidence of such costs having been incurred and/or paid and/or having been committed to be incurred. If the **Final Sums** are greater than the payments made by the **User** in respect of **The Company's** estimate(s) of **Final Sums** the **User** shall within 28 days of the said statement and invoice prepared by **The Company** pay to **The Company** the additional payments due by the **User** together with interest calculated thereon on a daily basis at **Base Rate** for the time being and from time to time from the date of previous payment(s) sums equal to **The Company's** estimate of **Final Sums** to the date of the statement of and invoice for **Final Sums**.

If the **Final Sums** is less than the payments made by the **User** in respect of **The Company's** estimate of **Final Sums** paid by the **User** following termination of this **Construction Agreement The Company** shall forthwith pay to the **User** the excess paid together with interest on a daily basis at **Base Rate** for the time being and from time to time from the date of payment of the fair and reasonable estimate of **Final Sums** to the date of reimbursement by **The Company** of the said excess paid.

10. EVENT OF DEFAULT

Alternate provisions apply depending whether or not the **User** does (10A) or does not (10B) meet **The Company's** required credit rating on signing this **Construction Agreement**.

10A. Event of Default

Any of the following events shall constitute an **Event of Default**:-

10A.1 If the **User** fails to provide or procure that there is provided to **The Company** within the requisite time any relevant security satisfactory to **The Company**, pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

10A.2 If having provided security satisfactory to **The Company** pursuant to pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

(a) The **User** thereafter fails to provide or procure that there is provided to **The Company** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required by **CUSC** Schedule 4 Part Three or to revise or renew such security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required, or if the User shall otherwise be in breach of any of its obligations in respect of security under to this **Construction Agreement** and **CUSC** Schedule 4 Part Three**;**

(b) The **User** or any shareholder (whether direct or indirect) of the **User** or any other party who may at any time be providing security to **The Company** pursuant to the requirements of this **Construction Agreement** and **CUSC** Schedule 4 Part Threetakes any action whether by way of proceedings or otherwise designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount so secured whether or not there shall be a dispute between the parties;

(c) Any party who may at any time be providing security to **The Company** pursuant to the provisions of this **Construction Agreement** and **CUSC** Schedule 4 Part Three fails to pay to **The Company** any sum demanded pursuant thereto.

10A.3 If

(i) There is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any sums due or to become due to **The Company** within the next following period of twelve (12) months in terms of or on termination of this **Construction Agreement**; or

(ii) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements)] put in place by the **User** in connection with a project for which security under this Clause 10A is required by **The Company** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal outstanding amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreemen**t) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in (i) or (ii) or (iii) the **User** fails, within a period of 7 (seven) days following the date on which **The Company** gives the **User** notice in writing of one or other of the above events occurring to provide **The Company** with such security as **The Company** shall require to cover the **User's** payment obligations to **The Company** arising in the event of or which have arisen prior to termination of this **Construction Agreement** and which arise under this **Construction Agreement**. The security to be provided shall be in a form satisfactory to **The Company** in accordance with this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

Provided that (in relation to paragraphs (i) or (ii) or (iii) above) if at anytime after the putting in place of security under Clause 10A.3 the **User** shall produce to **The Company** evidence to **The Company's** reasonable satisfaction that there is not a substantial probability of the **User** not being able to make payment to **The Company** of such sums within the next following period of twelve (12) months, **The Company** shall not require the

User to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to require security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii), and/or (iii) subsequently occurring.

10A.4 Where any of the **Events of Default** in Paragraph 5.3.1of the **CUSC** have occurred and are occurring it shall be an **Event of Default** for the purposes of Clause 11 of this **Construction Agreement**.

10B **Event of Default**

10B.1 If

(i) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements) put in place by the **User** in connection with a project for which security under this Clause 10B is required by **The Company** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or

(ii) there is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any unsecured sum due or to become due to **The Company** within the next following period of 12 (twelve) months in terms of or on termination of this **Construction Agreement**;

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in either (i) or (ii) or (iii) the **User** fails:-

(1) within a period of 14 (fourteen) days following the date on which **The Company** gives notice of such circumstances to provide to **The Company** a cash deposit in a **Bank Account**, a **Performance Bond** or **Letter of Credit** in favour of **The Company** and **Valid** at least up to the last day of the **Financial Year** in which the event occurs for such amount representing **The Company's** reasonable

estimate of all unsecured sums to become due to **The Company** in the period up to the end of the **Financial Year** in which the event occurs such sum to be specified in the said notice; or

(2) to subsequently provide such cash deposit or renew such **Performance Bond** or **Letter of Credit** (or such renewed **Performance Bond** or **Letter of Credit** provided under this paragraph) not less than 45 days prior to its stated expiry date for such amount representing **The Company's** reasonable estimate of the unsecured sums to become due to **The Company** in the next following **Financial Year** valid at least up to the last day of the next following **Financial Year** and to continue the provision of cash deposit a **Performance Bond** or **Letter of Credit** in a similar manner, to such estimate of unsecured sums.

Provided that regarding (i) or (ii) or (iii) if at any time after the putting in place of security under this Clause 10B.1 the **User** shall provide to **The Company** evidence to **The Company's** reasonable satisfaction that there is not a substantial probability of the **User** being unable to make payment to **The Company** of any unsecured sums within the next following period of twelve (12) months, **The Company** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to return security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii) and/or (iii) in this Clause 10B.1 subsequently occurring.

10B.2 If the **User** fails to provide or procure that there is provided to **The Company** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required under this **Construction Agreement** and **CUSC** Schedule 4 Part Threeor to renew or revise such security or to substitute any security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required or if the **User** is otherwise in breach of any of its obligations under this **Construction Agreement** and **CUSC** Schedule 4 Part Three**.**

10B.3 If the **User** or any shareholder (whether direct of indirect) of the **User** takes any action whether by way of proceedings or otherwise designed or calculated to prevent restrict or interfere with the payment to **The Company** of any amount so secured or seeks or permits or assists others to do so, whether or not there shall be a dispute between the parties.

10B.4 If any party who may at any time be providing or holding security in favour of **The Company** in respect of this **Construction Agreement** pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three fails to pay **The Company** any sum demanded in any **Notice of Drawing** pursuant thereto.

10B.5 Where any of the **Events of Default** in Paragraph 5.3.1 of the **CUSC** have occurred and are occurring it shall be an **Event of Default** for the purposes of Clause 11 of this **Construction Agreement**.

10A.4/
10B.6 Once an **Event of Default** has occurred and is continuing **The Company** may give notice of termination to the **User** whereupon this **Construction Agreement** shall forthwith terminate and **The Company** shall disconnect all the **User's Equipment** at the **Connection Site** and the provisions of Clause 11 shall apply:

11. TERMINATION

11.1 On termination of this **Construction Agreement The Company** shall disconnect all the **User's Equipment** at the **Connection Site** and:

(a) the **User** shall remove any of the **User's Equipment** on, in relation to **Connection Sites** in England and Wales, **The Company's** or, in relation to **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land within 6 months of the date of termination or such longer period as may be agreed between **The Company** or the **Relevant Transmission Licensee** (as appropriate) and the **User**; and

(b) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any **Transmission Connection Assets** on the **User's** land within 6 months of the date of termination or such longer period as may be agreed between **The Company** or the **Relevant Transmission Licensee** (as appropriate) and the **User**.

11.3 The **User** shall where this **Construction Agreement** terminates prior to the [**Charging] [Completion Date]** be liable forthwith on the date this **Construction Agreement** so terminates to pay to **The Company**:-

(1) the **Pre Commissioning Cancellation Charge**; and

(2) **Final Sums** and on such termination shall be liable to pay a sum equal to **The Company**'s fair and reasonable estimate of **Final Sums**,

such payments in each case to be made within 14 days of the date of **The Company's** invoice(s) in respect thereof and subject to adjustment in respect of **The Company's** estimate of **Final Sums** in accordance with Clause 9.2.

12. TERM

12.1 Subject to the provisions for earlier termination set out in the **CUSC** this **Construction Agreement** shall continue until terminated in accordance with Clause 2.5, 2.6, 2.16, 4.8 or 10 hereof.

12.2 In addition this **Construction Agreement** shall terminate upon termination of the associated **Bilateral Connection Agreement** and in the event that this is prior to the **Charging Date** the provisions of Clause 11 shall apply.

12.3 The associated [**Bilateral Connection Agreement** or **Agreement to Vary** the **Bilateral Connection Agreement**] will automatically terminate upon termination of this **Construction Agreement** prior to the **Charging Date**.

12.4 Any provisions for payment shall survive termination of this **Construction Agreement**.

13. CUSC

The provisions of Sections 6.6 (Payment), 6.14 (Transfer and Subcontracting), 6.15 (Confidentiality), 6.18 (Intellectual Property), 6.19 (Force Majeure), 6.20 (Waiver), 6.21 (Notices), 6.22 (Third party Rights), 6.23 (Jurisdiction), 6.24 (Counterparts), 6.25 (Governing Law), 6.26 (Severance of Terms), 6.27 (Language) inclusive of the **CUSC** shall apply to this **Construction Agreement** as if set out in this **Construction Agreement**.

14. DISPUTES

Except as specifically provided for in this **Construction Agreement** any dispute arising under the terms of this **Construction Agreement** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.

15. VARIATIONS

15.1 Subject to Clause 15.2 and 15.3 below, no variation to this **Construction Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

15.2 **The Company** and the **User** shall effect any amendment required to be made to this **Construction Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

15.3 **The Company** has the right to vary Appendices in accordance with Clauses 2.3, 2.11, 2.13, 2.16 and 7.4 and Paragraph 6.9 of the **CUSC**.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission)
plc)

SIGNED BY)
[name])
for and on behalf of)
[User])

APPENDIX [B]
[Part 1]

ONE OFF WORKS

APPENDIX [G]

TRANSMISSION CONNECTION ASSET WORKS

APPENDIX [H]

LCN TRANSMISSION REINFORCEMENT WORKS

APPENDIX [I]
USER'S WORKS

APPENDIX [J]

CONSTRUCTION PROGRAMME

APPENDIX [K]

LIQUIDATED DAMAGES

Company:

Connection site:

Type:

The amount of Liquidated Damages payable by The Company to the User pursuant to this Construction Agreement shall be:

Liquidated Damages under Clause [4] of this Construction Agreement shall be calculated on a daily basis at a rate of £XXXXX per week subject to the limit that the total Liquidated Damages payable by The Company to the User under this Clause shall not exceed £XXXXX.

APPENDIX [L]

INDEPENDENT ENGINEER

Company:

Connection site:

Type:

The Independent Engineer will be a Member of the Association of Consulting Engineers (ACE) and shall be agreed between the parties within 120 days of execution of this Construction Agreement or such other period as may be agreed between the parties. Failing agreement it shall be referred to the President of the Institution of Electrical Engineers who shall nominate the Independent Engineer.

1.

APPENDIX [N]

THIRD PARTY WORKS

APPENDIX [R]
PRE COMMISSIONING CANCELLATION CHARGE AND PROFILE

END OF SCHEDULE 2 EXHIBIT 3 PART [X]

SCHEDULE 4

USER COMMITMENT PRINCIPLES

Introduction

The purpose of this Schedule 4 is to specify the principles and set out the methodology used to calculate the **Cancellation Charge** and **Capacity Reduction Charge** payable by **Users** in the categories of **Power Stations** directly connected to the **GB Transmission System** who are parties to a **Bilateral Connection Agreement** with **The Company** and **Users** in the category of **Embedded Power Stations** who are parties to a **Bilateral Embedded Generation Agreement** with **The Company** and reference to **User** in this section shall be interpreted accordingly.

It also sets out in PART THREE and PART FOUR the requirements and arrangements for security in respect of the **Pre Commissioning Cancellation Charge** and **Final Sums** for the **One Off Charge**.

For the avoidance of doubt this schedule does not apply to **Users** other than those described above.

PART ONE

1 CANCELLATION CHARGE

1.1 Where a **Construction Agreement** and/or a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** between a **User** and **The Company** is terminated such **User** shall be liable to pay to **The Company** the **Cancellation Charge**.

Please note for information, that such **User** shall on termination of a **Construction Agreement** prior to the **Completion Date** (as defined in such **Construction Agreement**) be liable in addition to the **Cancellation Charge** for **Final Sums** (as defined in its **Construction Agreement**) in respect of any **One Off Works** in such **Construction Agreement**.

1.2 The **Cancellation Charge** to be payable in such circumstances and the level of security to be provided in respect of this shall be calculated in accordance with this Schedule 4 which also sets out the process for the types of security required.

1.3 The **Cancellation Charge** varies throughout the term of the **User's Construction Agreement** and **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**.

1.4 On termination of a **Construction Agreement** prior to the **Completion Date** (as defined in the relevant **Construction Agreement**) the **User** shall be liable for the **Pre Commissioning Cancellation Charge**. The liabilities and levels of security required in respect of the **Pre Commissioning Calculation Charge** shall be calculated in accordance with this Schedule 4 Paragraph 2 and detailed in that **User's Construction Agreement**.

1.5 Where a User has been allocated **Transmission Entry Capacity** under the **Long Term Access Auction** for a **TEC Period**, on termination of the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** the **User** shall be liable for the **TEC Cancellation Charge** as calculated in accordance with this Schedule 4 Paragraph 3.

1.6 Value Added Tax will be payable on any **Cancellation Charge**.

2 PRE COMMISSIONING CANCELLATION CHARGE

Completion Date

2.1 In making an **Offer** to a **User The Company** will consider the **Construction Works** and **Construction Programme** associated with that **Offer** and taking into account the nature and programming of the **Construction Works** and the **Consents** associated with this will identify dates in the **Construction Agreement** as the **Completion Date** for the works.

2.2 The **Pre Commissioning Cancellation Charge** liability will start four [calendar] [**Financial Years**] years prior to the **Completion Date** or the date of the **Construction Agreement** if this is less than four calendar years prior to the **Completion Date**.

2.3 Using the above principles **The Company** will identify a profile of the **Pre Commissioning Cancellation Charge** showing the **Pre Commissioning Cancellation Charge** due by reference to termination of the **Construction Agreement** within specified periods (the "**Cancellation Periods**"). This profile will assume a start on the last day that a **User** could accept the **Offer** (or where the **User** the **Construction Agreement** to be conditional on the outcome of the **Long Term Access Auction**, the expected **Auction Closure Date**) and will be set out in the **Construction Agreement**.

Changes to Construction Programme or Construction Works

2.4 Where the **Construction Programme** or the **Construction Works** subsequently change from that in the original **Construction Agreement** the following principles will apply in respect of reassesing the **Pre Commissioning Cancellation Charge**.

2.5 Where such change is as a result of **The Company's** exercise of its rights under the **Construction Agreement** then:

(i) Where there is a delay to the **Completion Date** the **Pre Commissioning Cancellation Charge** shall be revised accordingly on the basis of the above principles by reference to the number of full 12 month periods [**Financial Years**] from the new **Completion Date**.

2.6 Where such change is as a result of the **User's** request a revised **Pre Commissioning Cancellation Charge** profile will be issued by the **Company** to the **User** but notwithstanding any change in the **Construction Works** or **Completion Date**:

(i) The **Pre Commissioning Cancellation Charge**will be frozen at the prevailing level and remain at that level for the period of the slippage.

Local Component of TNUoS Tariffs

2.7 Where any **Pre Commissioning Cancellation Charges** are calculated by reference to the local component of TNUoS tariffs these tariffs will be calculated and fixed as the TNUoS tariff as on the last day that the offer for such **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** and any associated **Construction Agreement** could have been accepted (or where the **User** the **Construction Agreement** to be conditional on the outcome of the **Long Term Access Auction**, the expected **Auction Closure Date**). If such a tariff is not currently published, then the appropriate tariff will be calculated by **The Company** as part of the application process, in accordance with the **Statement of the Use of Charging Methodology**.

2.8 On termination of a **Construction Agreement** prior to the **Completion Date** the **User** shall be liable to pay the **Pre Commissioning Cancellation Charge** calculated as follows:

Pre Commissioning Cancellation Charge

$LCN \times LCAM_t$

Where:

- *LCN* is expressed in MW.
- $LCAM_t$ which varies according to the number of full years from the Completion Date:
  - In the year prior to the Completion Date (t=0) *LCAM = TA x 100%*,
  - where TA= $Max\ (0, (LocGenTNUoS_n \times X))$,
  - Where *X* is a multiplier, initially taking the value 8, although it may be appropriate that this be amended in subsequent price control periods.
  - Where $LocGenTNUoS_n$ is the relevant nodal local generation TNUoS tariff applicable as published in the Statement of use of System

Charges for the financial year in which the last day the offer of the Bilateral Connection Agreement or Bilateral Embedded Generation Agreement and associated construction Agreement could be accepted falls (or where the User the Construction Agreement to be conditional on the outcome of the Long Term Access Auction, the expected Auction Closure Date*)*;

- Where t=-1, *LCAM = LTA x 75%*;
- Where t=-2, *LCAM = LTA x 50%*; and
- Where t=-3, *LCAM = LTA x 25%*.

3 TEC Cancellation Charge

3.1 On termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** the **User** shall be liable to pay the wider component of **Transmission Network Use of System Charges** due and/or payable for any **TEC Period(s)** allocated to the **User** and in addition the local component of **Transmission Network Use of System Charges** due or payable to end of the **Financial Year** in which such termination occurs.

3.2 All such charges shall become immediately due and payable upon the termination of the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Agreement**.

PART TWO

1. CAPACITY REDUCTION CHARGE

1.1 In the event that the **LCN** value in Appendix C of its **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** is reduced prior to the **Completion Date** by the User or as a result of a Notice in Reduction (as defined in the Construction Agreement), the **User** shall be liable to pay a **Capacity Reduction Charge** to **The Company** calculated as follows.

$$LCAM_t \times (LCN - LCN_r)$$

- Where $LCAM_t$ is calculated in accordance with paragraph 2.8above
- LCN is the LCN figure (expressed in MW) stated in Appendix C to the Users Bilateral Connection Agreement or Bilateral Embedded Generation Agreement effective immediately prior to the requested reduction in LCN
- LCN_r is the revised LCN figure (expressed in MW) following the LCN reduction

1.2 Following a reduction in **LCN** and after payment of the **Capacity Reduction Charge** **The Company** shall adjust the **Pre Commissioning Cancellation Charge** liabilities and associated security obligations to reflect the reduced **LCN**.

1.3 There is no **Capacity Reduction Charge** payable in respect of a reduction in **LCN** on or after the **Completion Date** for the **Construction Works**.

1.4 Valued added tax will be payable on any **Capacity Reduction Charge**.

1.5 There is no provision for a charge in respect of a reduction in **Transmission Entry Capacity**. A **User** remains liable for the level of **Transmission Entry Capacity** as allocated under the **Long Term Access Auction**. **Users** should note however the limitation in **CUSC** Section 3, Paragraph 3.2.3 regarding the export of power in excess of **LCN**.

PART THREE

1. CREDIT REQUIREMENTS

Where a **User** has a **Construction Agreement** it shall provide security for the **Pre Commissioning Cancellation Charge** in accordance with this Schedule 4 Part Three.

2. Each **User** which has a **Construction Agreement** shall provide security in respect of each of its **Construction Agreement**:

2.1 in the case of a **User** which meets **The Company Credit Rating** at the date of the **Construction Agreement** in accordance with Paragraph 3; and

2.2 in the case of a **User** which does not meet **The Company Credit Rating** at the date of the **Construction Agreement** or thereafter ceases to meet it, in accordance with Paragraph 4.

3. PROVISION OF SECURITY FOR PRE COMMISSIONING CANCELLATION CHARGE WHERE USER MEETS THE COMPANY CREDIT RATING

3.1 The **User** shall (a) as soon as possible after entering into a **Construction Agreement** and in any event no later than one (1) month after the date of the same or (b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** as soon as possible and in any event within 5 **Business Days** of the **Auction Closure Date** confirm to **The Company** whether it meets **The Company Credit Rating**. Thereafter not less than 75 days before the relevant **PC Security Period** until 28 days after the **PC Security Period End Date** the **User** shall confirm to **The Company** whether it meets **The Company Credit Rating** (which in the case of a long term private credit rating shall be confirmed by Standard and Poor's or Moody's within a period of 45 days prior to the date of confirmation). The **User** shall inform **The Company** in writing forthwith if it becomes aware of no longer meeting **The Company Credit Rating** or if it is or is likely to be put on credit watch or any similar credit surveillance procedure which may give **The Company** reasonable cause to believe that the **User** may not be able to sustain meeting **The Company Credit Rating** for at least 6 months 12 months.

3.2 In the event that the **User** has elected to provide **The Company** with an indicative credit rating and **The Company** is of the reasonable opinion that the **User** has ceased to comply with the requirements of Paragraph 3.1 then **The Company** may require the **User** forthwith:

(i) to apply to Standard and Poor's and/or Moody's for a further indicative long term private credit rating; or

(ii) to confirm to **The Company** that it shall provide the security referred to in Paragraph 3.4 below.

3.3 In the event of the **User**:

(i) not meeting **The Company Credit Rating**; or

(ii) having a credit rating below **The Company Credit Rating**; or

(iii) not having obtained from Standard and Poor's or Moody's within 30 days of the written notification under Paragraph 3.2(i) above an indicative long term private credit rating,

or if **The Company** becomes aware that:

(iv) the **User** ceases to meet **The Company Credit Rating**; or

(v) the **User** is put on credit watch or other similar credit surveillance procedure as specified above which may give **The Company** reasonable cause to believe that the User may not be able to maintain **The Company Credit Rating** for at least 6 months; or

(vi) the **User** has not obtained from Standard and Poor's within 30 days of the written notification by **The Company** under Paragraph 3.2(i) above a further indicative long term private credit rating,

the **User** shall (where appropriate on receipt of written notification from **The Company**) comply with the terms of Paragraph 3.4.

3.4 The **User** shall within 21 days of the giving of a notice under Paragraph 3.3 or within 30 days of the **User** confirming to **The Company** under Paragraph 3.2(ii) that it will provide the security specified below (whichever is the earlier), provide **The Company** with the security specified below to cover the **User's** obligations to pay the **Pre Commissioning Cancellation Charge** arising in the event of, or which have arisen prior to, termination of this **Construction Agreement**. The security to be provided shall be in the amount of the **Pre Commissioning Cancellation Charge** as set out in the **Construction Agreement** for the relevant **PC Security Period**.

3.5 The form of security provided shall be of a type set out in Paragraph 5.

3.6 Until the facts or circumstances giving rise to the obligations of the **User** to provide the security have ceased, then **The Company** provisions of Paragraph 4 shall apply in the Amending Agreement.

3.7 If the facts of circumstances giving rise to the obligation of the **User** to provide the security have ceased, then **The Company** shall release the security.

4. PROVISION OF SECURITY FOR THE PRE COMMISSIONING CANCELLATION CHARGE WHERE USER DOES NOT MEET OR CEASES TO MEET THE COMPANY CREDIT RATING

4.1 Each **User** hereby agrees that it shall at the start of the **First PC Security Period** provide to **The Company** or procure the provision to **The Company** of, and the **User** shall until 28 days after the **PC Security End Date** (unless and until this **Construction Agreement** shall be terminated (and the **Pre Commissioning Cancellation Charge** shall have been paid) maintain or procure that there is maintained in full force and effect (including by renewal or replacement) a security arrangement from time to time and for the time being as set out in Paragraph 5 to provide security for the **User's** obligation to pay the **Pre Commissioning Cancellation Charge** to **The Company** on **Termination** of the **Construction Agreement**

4.2 **Demands not Affected by Disputes**

It is hereby agreed between **The Company** and the **User** that if there shall be any dispute between the **User** and **The Company** as to:-

4.2.1 whether the amount as required at any time to be secured has been calculated in accordance with the **User Commitment Principles**; or

4.2.2 whether there has been an **Event of Default** (under the **Construction Agreement** or the **CUSC**), or

4.2.3 the lawfulness or otherwise of any termination or purported termination of the **Construction Agreement**

such dispute shall not affect the ability of **The Company** to make demands pursuant to the security arrangement to be provided pursuant to this Schedule 4 and the **Construction Agreement** and to recover the amount or amounts payable thereunder, it being acknowledged by the **User** that but for such being the case **The Company's**

security would be illusory by reason of the period of validity of the relevant security being likely to expire or capable of expiring before the final resolution of such dispute. The **User** accordingly covenants with **The Company** that it will not take any action, whether by way of proceedings or otherwise, designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount secured under the security arrangement nor seek nor permit nor assist others to do so.

4.3 If there shall be any dispute as mentioned in Paragraph 4.2 above the same shall, whether **The Company** shall have terminated the **Construction Agreement** and recovered or sought to recover payment under the security arrangement or not, and without prejudice to **The Company's** right to recover or seek to recover such payment be dealt with by referral to arbitration in accordance with the **Dispute Resolution Procedure**.

5. TIMINGS FOR AND TYPES OF SECURITY

5.1 The **User's** obligation to pay the **Pre Commissioning Cancellation Charge** shall be secured by any one of the following:-

5.1.1 A **Performance Bond** or **Letter of Credit** from a **Qualified Bank** for the **Pre Commissioning Cancellation Charge** for a given **PC Security Period**, such **Performance Bond** or **Letter of Credit** to be **Valid** for at least that given **PC Security Period** and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3; or

5.1.2 A cash deposit in a **Bank Account** at least for the amount of the **Pre Commissioning Cancellation Charge** to be secured for a given **PC Security Period**, such cash deposit to be increased or reduced periodically where applicable in the manner stated in paragraph 5.2.4; or

5.1.3 A **Performance Bond** from a **Qualified Company** for the amount of the for the **Pre Commissioning Cancellation Charge** to be secured for a given **PC Security Period**, such **Performance Bond** to be **Valid** for at least that **PC Security Period** and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3.

5.2. **GENERAL PROVISIONS**

5.2.1 Any **Notice of Drawing** to be delivered to Barclays Bank PLC or any other bank at which the **Bank Account** shall have been opened or a **Qualified Bank**

or a **Qualified Company** may be delivered by hand, by post or by facsimile transmission.

5.2.2 If the **User** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, the **User** shall so notify **The Company** in writing as soon as it becomes so aware. If **The Company** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, **The Company** may notify the **User** to that effect in writing. Where the bank or the company so ceases to be either a **Qualified Bank** or a **Qualified Company** (as the case may be) as a consequence of **The Company** having reasonable cause to doubt the continued rating of the said bank or company, such notice shall be accompanied by a statement setting out **The Company's** reasons for having such doubt. The **User** shall within 21 days of the giving of such notice by **The Company** or the **User** whichever is the earlier provide a replacement **Performance Bond** and/or **Letter of Credit** from a **Qualified Bank** or **Qualified Company**, as the case may be, and/or provide a cash deposit in the required amount in a **Bank Account**. From the date the replacement **Performance Bond** or **Letter of Credit** or **Bank Account** cash deposit is effectively and unconditionally provided and **Valid**, **The Company** will consent in writing to the security which it replaces being released.

5.2.3 The following provisions shall govern the issuance, renewal and release of the **Performance Bond** or **Letter of Credit**:-

5.2.3.1 The **Performance Bond** or **Letter of Credit** shall be **Valid** initially for the **First PC Security Period**. Such **Performance Bond** or **Letter of Credit** shall be for an amount not less than the **Pre Commissioning Cancellation Charge** to be secured for that **PC Security Period**.

5.2.3.2 On a date which is at least 45 days (or if such day is not a **Business Day** then on the immediately preceding **Business Day**) before the start of each following **Subsequent PC Security Period** such **Performance Bond** or **Letter of Credit** shall be renewed so as to be **Valid** for not less than such **PC Security Period** and in the case of the last **PC Security Period** to be **Valid**, unless **The Company** agrees otherwise, for 45 days after the **PC Security Period End Date**. Such renewed **Performance Bond** or **Letter of Credit** shall be for an amount not less than the amount of the **Pre Commissioning Cancellation Charge** to be secured during that **PC Security Period**.

5.2.4 The following provisions shall govern the maintenance of cash deposits in the **Bank Account**:-

5.2.4.1 The amount of the cash deposit to be maintained in the **Bank Account** shall be maintained from the start of the **First PC Security Period** at least to the end of the **First PC Security Period**. Such cash deposit shall be in the amount of the **Pre Commissioning Cancellation Charge** to be secured during that **First PC Security Period**.

5.2.4.2 If the amount of the **Pre Commissioning Cancellation Charge** to be secured from the start of each **Subsequent PC Security Period** is an amount greater than the amount then secured, the cash deposit in the **Bank Account** shall be increased to such greater amount on the date which is 45 days before the start of the given **PC Security Period**.

5.2.4.3 If the **Pre Commissioning Cancellation Charge** for a given **PC Security Period** is smaller than the amount then secured, the cash deposit in the **Bank Account** shall not be reduced to the amount so stated until the expiry of 7 days after the start of that given **FS Security Period** ("the **Release Date**").

5.2.4.4 The sum equal to the amount of reduction in the cash deposit in the **Bank Account** shall be paid by **The Company** to the **User** from the **Bank Account** on the **Release Date**.

5.2.4.5 Any interest accruing to the **Bank Account** shall be for the account of and belong to the **User** absolutely, and **The Company** agrees to take any steps required to be taken by it for the release from the **Bank Account** and payment to the **User** of such interest as soon as the same shall have been credited to the **Bank Account** and **The Company** shall have received notice of such credit.

5.3 Notwithstanding any provision aforesaid:-

5.3.1 The **User** may provide different securities to **The Company** at any one time, each securing a different amount, provided that the aggregate amount secured by such securities shall be not less than the amount of the **Pre Commissioning Cancellation Charge** required to be secured for that **PC Security Period**.

5.3.2 The **User** may upon the expiry of at least 14 days prior written notice to **The Company**, substitute one type of security for another provided that unless **The Company** shall otherwise agree in writing such substituted security must be **Valid** from the first day of the relevant **PC Security Period** and committed at least 45 days before this in the following manner:-

(a) where a **Performance Bond** or a **Letter of Credit** is to substitute for other securities, it must be issued or given at least 45 days before the start of the **PC Security Period** to which it relates.

(b) where a cash deposit in a **Bank Account** is to substitute for other securities, it must be deposited into the **Bank Account** at least 45 days before the start of the **PC Security Period** to which it relates.

5.3.3 Upon request by the **User** to **The Company**, securities substituted in the aforesaid manner shall, providing the substitute security shall be **Valid**, be released on the first day of the **PC Security Period** which the substitute security is securing. However, where the **Pre Commissioning Cancellation Charge** to be secured for any **PC Security Period** is less than the amount required to be secured in the preceding **PC Security Period**, the substituted security shall not be released until 7 days after the start of the **PC Security Period** that that substitute security is securing.

PART FOUR

FINAL SUMS CREDIT REQUIREMENTS

1. Where a **User** has a **Construction Agreement** it shall provide security for **Final Sums** in accordance with this Schedule 4 Part Three.

2. Each **User** which has a **Construction Agreement** shall provide security in respect of each of its **Construction Agreements**.

2.1 in the case of a **User** which meets **The Company Credit Rating** at the date of the **Construction Agreement** in accordance with Paragraph 3; and

2.2 in the case of a **User** which does not meet **The Company Credit Rating** at the date of the **Construction Agreement** or thereafter ceases to meet it, in accordance with Paragraph 4.

3. PROVISION OF SECURITY FOR FINAL SUMS WHERE USER MEETS THE COMPANY CREDIT RATING

3.1 The **User** shall (a) as soon as possible after entering into a **Construction Agreement** and in any event no later than one (1) month after the date of the same or (b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** as soon as possible and in any event within 5 **Business Days** of the **Auction Closure Date** confirm to **The Company** whether it meets **The Company Credit Rating**. Thereafter not less than 75 days before the relevant **FS Security Period** until 28 days after the **Completion Date** the **User** shall confirm to **The Company** whether it meets **The Company Credit Rating** (which in the case of a long term private credit rating shall be confirmed by Standard and Poor's or Moody's within a period of 45 days prior to the date of confirmation). The **User** shall inform **The Company** in writing forthwith if it becomes aware of no longer meeting **The Company Credit Rating** or if it is or is likely to be put on credit watch or any similar credit surveillance procedure which may give **The Company** reasonable cause to believe that the **User** may not be able to sustain meeting **The Company Credit Rating** for at least 6 months.

3.2 In the event that the **User** has elected to provide **The Company** with an indicative credit rating and **The Company** is of the reasonable opinion that the **User** has ceased to comply with the requirements of Paragraph 3.1 then **The Company** may require the **User** forthwith:

(i) to apply to Standard and Poor's and/or Moody's for a further indicative long term private credit rating; or

(ii) to confirm to **The Company** that it shall provide the security referred to in Paragraph 3.4 below.

3.3 In the event of the **User**:

(i) not meeting **The Company Credit Rating**; or

(ii) having a credit rating below **The Company Credit Rating**; or

(iii) not having obtained from Standard and Poor's or Moody's within 30 days of the written notification under Paragraph 3.2(i) above an indicative long term private credit rating,

or if **The Company** becomes aware that:

(iv) the **User** ceases to meet **The Company Credit Rating**; or

(v) the **User** is put on credit watch or other similar credit surveillance procedure as specified above which may give **The Company** reasonable cause to believe that the **User** may not be able to maintain **The Company Credit Rating** for at least 6 months; or

(vi) the **User** has not obtained from Standard and Poor's within 30 days of the written notification by **The Company** under Paragraph 3.2(i) above a further indicative long term private credit rating,

the **User** shall (where appropriate on receipt of written notification from **The Company**) comply with the terms of Paragraph 3.4.

3.4 The **User** shall within 21 days of the giving of a notice under Paragraph 3.3 or within 30 days of the **User** confirming to **The Company** under Paragraph 3.2(ii) that it will provide the security specified below (whichever is the earlier), provide **The Company** with the security specified below to cover the **User's** obligation to pay the **Pre Commissioning Cancellation Charge** arising in the event of, or which have arisen prior to, termination of the **Construction Agreement**. The security to be provided shall be for an amount not greater than the **Final Sums** payable on termination and specified in wring by **The Company** to the **User** from time to time.

3.5 The form of security provided shall be of a type set out in Paragraph 5.

3.6 Until the facts or circumstances giving rise to the obligations of the **User** to provide the security have ceased, then **The Company** provisions of Paragraph 4 shall apply in the Amending Agreement.

3.7 If the facts of circumstances giving rise to the obligation of the **User** to provide the security have ceased, then **The Company** shall release the security.

4. PROVISION OF SECURITY FOR FINAL SUMS WHERE USER DOES NOT MEET OR CEASES TO MEET THE COMPANY CREDIT RATING

4.1 Each **User** hereby agrees that it shall (a) forthwith upon signing the Construction Agreement or (b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** as soon as possible and in any event within 5 **Business Days** of the **Auction Closure Date** provide to **The Company** or procure the provision to **The Company** of, and the **User** shall until 28 days after the **Completion Date** (unless and until the **Construction Agreement** shall be terminated (and the **Final Sums** shall have been paid) maintain or procure that there is maintained in full force and effect (including by renewal or replacement) a security arrangement from time to time and for the time being as set out in Paragraph 5 to provide security for the **User's** obligation to pay **Final Sums** to **The Company** on termination of the **Construction Agreement**.

4.2 **Final Sums: Provision of Bi-annual Estimate and Secured Amount Statement**

4.2.1 **The Company** shall provide to the **User** with a **Bi-annual Estimate** showing the amounts of all payments required or which may be required to be made by the **User** to **The Company** in respect of **Final Sums** at the following times and in respect of the following periods:

(i) forthwith on the signing of the **Construction Agreement** or if appropriate after the **Auction Closure Date** , in respect of the **First FS Security Period**; and

(ii) not less than 75 (seventy-five) days (or if such day is not a **Business Day** the next following **Business Day**) prior to each **Subsequent FS Security Period** until the **Construction Agreement** shall be terminated and all sums due or which will or might fall due in respect of which security is to be provided shall have been paid.

4.2.2 Such **Bi-annual Estimate** shall be accompanied by the **Secured Amount Statement** specifying the aggregate amount to be secured at the beginning of and throughout each **FS Security Period**.

4.2.3 If **The Company** shall not provide any subsequent **Bi-annual Estimate** and **Secured Amount Statement** by the requisite date, then the **User** shall at the date it is next required to have in full force and effect security and whether by renewal or replacement or otherwise in respect of the following **FS Security Period** nonetheless provide security in accordance with the provisions of this **Construction Agreement** in the same amount as the amount then in force in respect of the then current **FS Security Period**.

4.2.4 Entitlement to Estimate

If **The Company** is (for whatever reason) unable on any relevant date to calculate precisely any sum due or which has accrued due or in respect of which the **User** has a liability to **The Company** for **Final Sums**, **The Company** shall be entitled to invoice the **User** for a sum equal to **The Company's** fair and reasonable estimate of the sums due or which may become due or in respect of which the **User** has a liability to **The Company** for payment. **The Company** shall also be entitled to send the **User** further invoices for such sums not covered in previous invoices. The **User** shall pay **The Company** all sums so invoiced by **The Company** within 14 days of the date of **The Company's** invoice (s) therefor.

4.3 **Demands not Affected by Disputes**

It is hereby agreed between **The Company** and the **User** that if there shall be any dispute between the **User** and **The Company** as to:-

4.3.1 whether the amount as required at any time to be secured has been calculated in accordance with the **Construction Agreement**; or

4.3.2 whether there has been an **Event of Default** (under the **Construction Agreement** or the **CUSC**), or

4.3.3 the lawfulness or otherwise of any termination or purported termination of the **Construction Agreement**

such dispute shall not affect the ability of **The Company** to make demands pursuant to the security arrangement to be provided pursuant to this Schedule 4 and the **Construction Agreement** and to recover the amount or amounts payable thereunder, it being acknowledged by the **User** that but for such being the case **The Company's** security would be illusory by reason of the period of validity of the relevant security being likely to expire or capable of expiring before the final resolution of such dispute. The **User** accordingly covenants with **The Company** that it will not take any action,

whether by way of proceedings or otherwise, designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount secured under the security arrangement nor seek nor permit nor assist others to do so.

4.4 If there shall be any dispute as mentioned in Paragraph 4.3 above the same shall, whether **The Company** shall have terminated the **Construction Agreement** and recovered or sought to recover payment under the security arrangement or not, and without prejudice to **The Company's** right to recover or seek to recover such payment, be referred in the case of Paragraph 4.3.1 to the **Independent Engineer** (and, for the avoidance of doubt the provisions of this **Construction Agreement** relating to the **Independent Engineer** for the purposes of this paragraph 4.4 shall survive termination) and, in the case of Paragraphs 4.3.2 and 4.3.3 be dealt with by referral to arbitration in accordance with the **Dispute Resolution Procedure**.

5. TIMINGS FOR AND TYPES OF SECURITY FOR FINAL SUMS

5.1 The **User's Payment** obligation to pay **Final Sums** shall be secured by any one of the following:-

5.1.1 A **Performance Bond** or **Letter of Credit** from a **Qualified Bank** for the **Final Sums** for a given **FS Security Period**, such **Performance Bond** or **Letter of Credit** to be **Valid** for at least that given **FS Security Period** as appropriate and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3; or

5.1.2 A cash deposit in a **Bank Account** at least for the amount of the **Final Sums** to be secured for a given **FS Security Period** as appropriate, such cash deposit to be increased or reduced periodically where applicable in the manner stated in paragraph 5.2.4; or

5.1.3 A **Performance Bond** from a **Qualified Company** for the amount of the for the **Final Sums** to be secured for a given **FS Security Period**, such **Performance Bond** to be **Valid** for at least that **FS Security Period** and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3.

5.2. **GENERAL PROVISIONS**

5.2.1 Any **Notice of Drawing** to be delivered to Barclays Bank PLC or any other bank at which the **Bank Account** shall have been opened or a **Qualified Bank** or a **Qualified Company** may be delivered by hand, by post or by facsimile transmission.

5.2.2 If the **User** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, the **User** shall so notify **The Company** in writing as soon as it becomes so aware. If **The Company** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, **The Company** may notify the **User** to that effect in writing. Where the bank or the company so ceases to be either a **Qualified Bank** or a **Qualified Company** (as the case may be) as a consequence of **The Company** having reasonable cause to doubt the continued rating of the said bank or company, such notice shall be accompanied by a statement setting out **The Company's** reasons for having such doubt. The **User** shall within 21 days of the giving of such notice by **The Company** or the **User** whichever is the earlier provide a replacement **Performance Bond** and/or **Letter of Credit** from a **Qualified Bank** or **Qualified Company**, as the case may be, and/or provide a cash deposit in the required amount in a **Bank Account**. From the date the replacement **Performance Bond** or **Letter of Credit** or **Bank Account** cash deposit is effectively and unconditionally provided and **Valid**, **The Company** will consent in writing to the security which it replaces being released.

5.2.3 The following provisions shall govern the issuance, renewal and release of the **Performance Bond** or **Letter of Credit**:-

5.2.3.1 The **Performance Bond** or **Letter of Credit** shall be **Valid** initially for the **First FS Security Period**. Such **Performance Bond** or **Letter of Credit** shall be for an amount not less than **Final Sums** to be secured for that **First FS Security Period**.

5.2.3.2 On a date which is at least 45 days (or if such day is not a **Business Day** then on the immediately preceding **Business Day**) before the start of each **Subsequent FS Security Period** such **Performance Bond** or **Letter of Credit** shall be renewed so as to be **Valid** for not less than such **FS Security Period** and in the case of the last **FS Security Period** to be **Valid**, unless **The Company** agrees otherwise, for 45 days after the last day of such **FS Security Period**. Such renewed **Performance Bond** or **Letter of Credit** shall be for an amount not less than the amount of the **Final Sums** to be secured during that **FS Security Period**.

5.2.4 The following provisions shall govern the maintenance of cash deposits in the **Bank Account**:-

5.2.4.1 The amount of the cash deposit to be maintained in the **Bank Account** shall be maintained from the date of the **Construction Agreement** at least to the end of the **First FS Security Period**. Such cash deposit shall be in the amount of the **Final Sums** to be secured during that **First FS Security Period**.

5.2.4.2 If the amount of the **Final Sums** to be secured from the start of each **Subsequent FS Security Period** is an amount greater than the amount then secured, the cash deposit in the **Bank Account** shall be increased to such greater amount on the date which is 45 days before the start of the given **FS Security Period**.

5.2.4.3 If the **Final Sums** for a given **FS Security Period** is smaller than the amount then secured, the cash deposit in the **Bank Account** shall not be reduced to the amount so stated until the expiry of 7 days after the start of that given **FS Security Period** (the "**Release Date**").

5.2.4.4 The sum equal to the amount of reduction in the cash deposit in the **Bank Account** shall be paid by **The Company** to the **User** from the **Bank Account** on the **Release Date**.

5.2.4.5 Any interest accruing to the **Bank Account** shall be for the account of and belong to the **User** absolutely, and **The Company** agrees to take any steps required to be taken by it for the release from the **Bank Account** and payment to the **User** of such interest as soon as the same shall have been credited to the **Bank Account** and **The Company** shall have received notice of such credit.

5.3 Notwithstanding any provision aforesaid:-

5.3.1 The **User** may provide different securities to **The Company** at any one time, each securing a different amount, provided that the aggregate amount secured by such securities shall be not less than the amount of the **Final Sums** required to be secured for that **FS Security Period**.

5.3.2 The **User** may upon the expiry of at least 14 days prior written notice to **The Company**, substitute one type of security for another provided that unless **The Company** shall otherwise agree in writing such substituted security must be **Valid** from the first day of the relevant **FS Security Period** and committed at least 45 days before this in the following manner:-

(a) where a **Performance Bond** or a **Letter of Credit** is to substitute for other securities, it must be issued or given at least 45 days before the start of the **FS Security Period** to which it relates.

(b) where a cash deposit in a **Bank Account** is to substitute for other securities, it must be deposited into the **Bank Account** at least 45 days before the start of the **FS Security Period** to which it relates.

5.3.3 Upon request by the **User** to **The Company**, securities substituted in the aforesaid manner shall, providing the substitute security shall be **Valid**, be released on the first day of the **FS Security Period** which the substitute security is securing. However, where the **Final Sums** to be secured for any **FS Security Period** is less than the amount required to be secured in the preceding **FS Security Period**, the substituted security shall not be released until 7 days after the start of the **FS Security Period** that that substitute security is securing.

CUSC - EXHIBIT B

THE CONNECTION AND USE OF SYSTEM CODE
CONNECTION APPLICATION

DIRECTLY CONNECTED POWER STATION
NON EMBEDDED CUSTOMER
DISTRIBUTION SYSTEM DIRECTLY CONNECTED TO THE
GB TRANSMISSION SYSTEM

PLEASE STUDY THE FOLLOWING NOTES BEFORE COMPLETING AND SIGNING THE APPLICATION FORM.

Please note that certain terms used in the application form are defined in the Interpretation and Definitions (contained in Section 11 to the **CUSC**) and when this occurs the expressions have capital letters at the beginning of each word and are in bold. If the **Applicant** has any queries regarding this application or any related matters then the **Applicant** is recommended to contact **The Company**[1] where our staff will be pleased to help.

1. **The Company** (National Grid Electricity Transmission plc) requires the information requested in this application form for the purpose of preparing an **Offer** (the **"Offer"**) to enter into an agreement for connection to and in the case of a directly connected power station, use of the **GB Transmission System**. It is essential that the **Applicant** supplies all information requested in the application form and that every effort should be made to ensure that such information is accurate.

2. Where **The Company** considers that any information provided by the **Applicant** is incomplete or unclear, or further information is required, the **Applicant** will be requested to provide further information or clarification. The provision/clarification of this information may impact on **The Company's** ability to commence preparation of an **Offer**.

3. Should there be any change in the information provided by the **Applicant** then the **Applicant** should immediately inform **The Company** of such a change. Where this is a change in the information provided for Sections B to D then the **Applicant** should contact **The Company** to see if such a change can be accommodated as it is unlikely that material changes could be accommodated. If **The Company** cannot accommodate such a change bearing in mind the timescales within which the **Offer** must be made then the application will be processed on the original information although it is open to the **Applicant** to withdraw the application.

4. **The Company** shall charge the **Applicant**, and the **Applicant** shall pay to **The Company**, **The Company's** Engineering Charges in relation to the application. A fee will be charged by **The Company** in accordance with the **Charging Statements**. No application will be considered until such payment has been received.

5. The effective date upon which the application is made shall be the later of the date when **The Company** has received the application fee pursuant to paragraph 4 above or the date when **The Company** is reasonably satisfied that the **Applicant** has completed Sections A-D. **The Company** shall notify the **Applicant** of such date.

6. **The Company** will make the **Offer** in accordance with the terms of Paragraphs 2.13, 6.9 (Modifications) and Paragraph 6.10 (New Connection Sites) of the **CUSC** and the **Transmission Licence**.

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[1] Customer Services, National Grid Electricity Transmission plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA (Telephone No. 01926 654634)

7. **The Company** will make the **Offer** as soon as is reasonably practicable and, in any event, within three (3) months of the effective date of the application or such later period as the **Authority** may agree. The **Offer** may, where it is necessary to carry out additional extensive system studies to evaluate more fully the impact of the proposed development, indicate the areas that require more detailed analysis. Before such additional studies are required, the **Applicant** shall indicate whether it wishes **The Company** to undertake the work necessary to proceed to make a revised **Offer** within the three (3) month period or, where relevant the timescale consented to by the **Authority**. To enable **The Company** to carry out any of the above mentioned necessary detailed system studies the **Applicant** may, at the request of **The Company**, be required to provide some or all of the **Detailed Planning Data** listed in Part 2 of the Appendix to the **Planning Code** which is part of the **Grid Code**.

8. In the course of processing the application it may be necessary for **The Company** to consult the appropriate **Public Distribution System Operator(s)** on matters of technical compatibility of the **GB Transmission System** with their **Distribution System(s)** or to consult the **Relevant Transmission Licensees** to establish the works required on the **GB Transmission System**. On grounds of commercial confidentiality **The Company** shall need authorisation for the release to the **Public Distribution System Operator(s)** or **Relevant Transmission Licensees** of certain information contained in the application. Any costs incurred by **The Company** in consulting the **Public Distribution System Operator(s)** or **Relevant Transmission Licensees** would be included in **The Company Charges** for the application. If it is found by the **Public Distribution System Operator(s)** that any work is required on their **Distribution System(s)**, then it will be for the **Public Distribution System Operator(s)** and the **Applicant** to reach agreement in accordance with Paragraph 6.10.3 of the **CUSC**.

9. In accordance with Paragraph 6.30.3 of **CUSC The Company** will need to disclose details of **Bilateral Agreements** entered into and shall need authorisation from the **Applicant** in respect of this.

10. If the **Applicant** is not already a **CUSC Party** the **Applicant** will be required as part of this application form to undertake that he will comply with the provisions of the **Grid Code** for the time being in force. Copies of the **Grid Code** and the **CUSC** are available on **The Company's Website**[2] and the **Applicant** is advised to study them carefully. **Data** submitted pursuant to this application shall be deemed submitted pursuant to the **Grid Code**.

11. **The Company's Offer** will be based upon its standard form terms of **Connection Offer** and the **Charging Statements** issued by **The Company** under Standard Conditions C4 and C6 of the **Transmission Licence**. The **Applicant** should bear in mind **The Company's** standard form terms of **Offer** when making this application.

12. In particular, **The Company** prepares **Offers** upon the basis that each party will design, construct, install, control, operate and maintain, in the case of the **User,** the **Plant** and **Apparatus** which he will own and, in the case of **The Company, Transmission Plant** and **Transmission Apparatus** usually but not necessarily applying the ownership rules set out in Paragraph 2.12 of the **CUSC**

[2] **www.nationalgrid.com/uk/electricity**

(Principles of Ownership). If the **Applicant** wishes **The Company** to carry out any of these matters on the **Applicant's** behalf please contact **The Company**[3] for further details.

13. **Applicants** of a type set out in **Grid Code** CC 8.1, Generators and DC Converter Station Owners, should appreciate that they will be required to perform **Mandatory Ancillary Services** to ensure that System Operational Standards can be achieved. This requirement may have implications towards **Plant** specification. You should be satisfied that before an application is made that your intended **Plant** design can meet the requirements.

14. Under Special Condition M of the Transmission Licence **The Company** has additional requirements in respect of information on **Offers** where an **Applicant** has applied for connections in Scotland as well as in England and Wales and the **Applicant** doesn't intend to connect at all locations, but intends to choose which location or locations to connect at on the basis of the offers it receives. Question 5 in Section A is intended to assist **The Company** in early identification of this situation arising. **The Company's Website**[4] contains a statement that describes the means by which **The Company** shall ensure compliance with Special Condition M of its **Transmission Licence**.

15. **Applicants** have the option to request a **Connection Offer** on the basis of a **Design Variation.** In requesting such an **Offer**, the **Applicant** acknowledges that the connection design (which provides for connection to the **GB Transmission System**) will fail to satisfy the deterministic criteria detailed in paragraphs 2.5 to 2.13 of the **GB SQSS**. In making such an **Offer**, in accordance with its obligations under Paragraphs 2.13.2 and 2.13.7 of **CUSC**, **The Company** may include **Restrictions on Availability**. If **Applicants** require further assistance on this option they are recommended to contact **The Company** before completing this application form.

16. The **Applicant** has the ability to pay a fixed price application fee in respect of their application or pay the actual costs incurred (variable price application fee). The fixed price application fee is derived from analysis of historical costs of similar applications. The variable price application fee is based on an advance of the Transmission Licensee's Engineering and out of pocket expenses and will vary according to the size of the scheme and the amount of work involved. The **Applicant** is requested to indicate their preferred basis of application fee in Section A question 4. The **Applicant** is advised that further information can be obtained from the **Charging Statements** which can be found on **The Company's Website**[5].

17. Applicants should note that the **Offer** will contain terms **Use of System** on the basis of its **Local Capcity Nomination** and that **Use of System** on the basis of **Transmission Entry Capacity** will be allocated through the **Long Term Access Auction**. Please note a **Local Capacity Nomination** is a pre-requirement for entry into the **Long Term Access Auction**.

18. ~~17.~~ [**The Company** will provide an **Offer** for the **Local Capacity Nomination** based upon the GB Security and Quality of Supply Standards (GBSQSS). The criteria presented in the **GBSQSS** represent the minimum requirements for the planning and operation of the **GB Transmission System**. The GBSQSS allows for a generation or demand **Applicant** to request a variation to the connection design. For example, such a connection design variation may be used to take account

[3] Customer Services, National Grid Electricity Transmission plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA (Telephone No. 01926 654634)
[4] **www.nationalgrid.com/uk/electricity**
[5] **www.nationalgrid.com/uk/electricity**

of the particular characteristics of a power station, the nature of connection of embedded generation or particular load cycles.

19. ~~18.~~ Any variation to connection design must not reduce the security of the MITS (Main Interconnected Transmission System) to below the minimum planning standard, result in any additional costs to any particular customer and compromise ~~and~~**any** GB transmission licensee's ability to meet other statutory obligations or licence obligations. Further details of these conditions and standards can be found on **The Company's** Website[6].

20. ~~19.~~ Please complete this application form in black print and return it together with the appropriate application fee to the Customer Services Manager, National Grid Electricity Transmission plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA (Telephone No. 01926 654634). In addition to returning the application form to the Customer Services Manager an electronic copy of the application form may be e-mailed to **The Company** at **camdata@uk.ngrid.com**

21. ~~20.~~ For the most up to date contact details applicants are advised to visit **The Company's Website**[5].

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION A. DETAILS OF APPLICANT (in respect of this application)

1. **Registered Company**

Name:……...

Address (of Registered Office in the case of a Company)

.....

.....

.....

Company Number:.....

Parent Company Name (if applicable):…..…….

2. **Company Secretary or person to receive CUSC notices**

Name:……...

Email:……

Telephone:……...

Fax:……...

3. **Commercial Contact/Agent (person to receive Offer if different from Company Secretary or person to receive CUSC notices identified in 2 above)**

Name:……...

Title:……..

Address:……...

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

……..

……..

Email:……

Telephone:……...

Fax:……...

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

4. Please identify which application fee basis you wish to use for this application.

   Fixed price application fee [ ]

   Variable price application fee [ ]

5. If this is an application for connection to the **GB Transmission System** in England and Wales please complete 5a. If this is an application for connection to the **GB Transmission System** in Scotland please complete 5b.

5a. Have you made any applications for connection to the **GB Transmission System** in Scotland which are being processed prior to **Offer** by **The Company** or where an **Offer** has been made that **Offer** has not yet been accepted by you but remains open for acceptance?

   If so, are such applications intended as alternatives to this one i**.**e**.** you intend to choose which of this or those other applications to proceed with on the basis of the offer made.

   Yes – please list the applications.

   ……

   ……

   No [ ]

   Not sure [ ]

   (**The Company** will contact you to clarify)

5b. Have you made any applications for connection to the **GB Transmission System** in England and Wales which are being processed prior to **Offer** by **The Company** or where an **Offer** has been made that **Offer** has not yet been accepted by you but remains open for acceptance?

   If so, are such applications intended as alternatives to this one i**.**e**.** you intend to choose which of this or those other applications to proceed with on the basis of the offer made.

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

Yes – please list the applications.

……

……

No [ ]

Not sure [ ] **(The Company** will contact you to clarify)

6 Are you intending to enter into a **Long Term Access Auction**?

Yes [ ]

No [ ]

Not sure [ ]

If so do you want the Offer to be conditional on your being allocated **Transmission Entry Capacity** under the **Long Term Access Auction**?

If no answer is provided **The Company** will assume that you do not want the **Offer** to be conditional.

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION B. THE PROPOSED POINT OF CONNECTION

1. Please identify (preferably by reference to an extract from an Ordnance Survey Map) the intended location (the "**Connection Site**") of the **Plant** and **Apparatus** (the "**User Development**") which it is desired should be connected to the **GB Transmission System** and where the application is in respect of a proposed **New Connection Site** other than at an existing sub-station. Please specify the proposed location and name of the **New Connection Site** (which name should not be the same as or confusingly similar to the name of any other **Connection Site**) together with details of access to the **Connection Site** including from the nearest main road.

.....

.....

.....

2. Please provide a plan or plans of the proposed **Connection Site** indicating (so far as you are now able) the position of all buildings, structures, **Plant** and **Apparatus** and of all services located on the **Connection Site**.

.....

.....

.....

.....

3. Give details of the intended legal estate in the **Connection Site** (to include leasehold and freehold interests and in the case of **Connection Sites** in Scotland legal interests and heritable or leasehold interests including servitudes or other real rights) in so far as you are aware.

.....

.....

.....

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

4. Who occupies the **Connection Site** in so far as you are aware?

.....

.....

5. If you believe that a new sub-station will be needed, please indicate by reference to the plan referred to in Section B question 2 above the **Applicant's** suggested location for it - giving dimensions of the area.

.....

.....

6. If you are prepared to make available to **The Company** or, for **Connection Sites** in Scotland, the **Relevant Transmission Licensee** the land necessary for the said sub-station, please set out brief proposals for their interest in it including (if relevant) such interest and the consideration to be paid for it.

.....

.....

7. Is space available on the **Connection Site** for working storage and accommodation areas for **The Company** contractors or, for **Connection Sites** in Scotland, the contractors of the **Relevant Transmission Licensee**? If so, please indicate by reference to the plan referred to in Section B question 2 above the location of such areas, giving the approximate dimensions of the same.

.....

.....

.....

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

8. Please provide details (including copies of any surveys or reports) of the physical nature of land in which you have a legal estate or legal interest at the proposed **Connection Site** including the nature of the ground and the sub-soil.

.....

.....

9. Please give details and provide copies of all existing relevant planning and other consents (statutory or otherwise) relating to the **Connection Site** and the **User Development** and/or details of any pending applications for the same.

.....

.....

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

10. Is access to or use of the **Connection Site** for the purposes of installing, maintaining and operating **Plant** and **Apparatus** subject to any existing restrictions? If so, please give details.

.....

.....

.....

.....

11. If you are aware of them, identify by reference to a plan (if possible) the owners and (if different) occupiers of the land adjoining the **Connection Site**. To the extent that you have information, give brief details of the owner's and occupier's estates and/or interests in such land.

.....

.....

.....

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

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PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION C. TECHNICAL INFORMATION

1. Summary of Application (brief description of plant to be connected):
   ....……...

   ……

   ……

2. Please provide full details of the proposed application together with the relevant **Standard Planning Data** as listed in Part 1 of the appendix to the **Planning Code** which are applicable to you. Note: the data concerned forms part of the **Planning Code** and **Data Registration Code**. **Applicants** should refer to these sections of the **Grid Code** for an explanation.

3. Please provide a copy of your **Safety Rules** if not already provided to **The Company**.

   Included [ ]

   Already provided [ ]

   Will be provided later [ ]

4. Please indicate if your plant may be able to provide (or you could consider providing) the following technical capability):-

   a. Generation from Auxiliary Units (Reserve Services) ***[ ]***

   b. Spinning Generation ***[ ]***

   c. Fast Start capability ***[ ]***

   d. Frequency Response above Mandatory requirements ***[ ]***

   e. Demand Reduction / Management ***[ ]***

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

f.	***Reactive capability above Mandatory requirements***	***[ ]***
g.	***Synchronous Compensation***	***[ ]***
h.	***Black Start Capability***	***[ ]***
i.	***Emergency Maximum Generation***	***[ ]***
j.	***Intertrip***	***[ ]***
k.	***Other (please detail below)***	***[ ]***

……

……

The Company's Website[5] ***provides more information on the terms it offers for such technical capability.***

5. Please confirm your intended **Connection Entry Capacity** (MW)

Connection Site	[	]

Generating Unit(s) (if applicable)

Generating Unit 1	[	]
Generating Unit 2	[	]
Generating Unit 3	[	]
Generating Unit 4	[	]

Details of additional **Generating Units** are to be provided here

6. Please state the required ~~**Transmission Entry**~~**Local** **Capacity** **Nomination**……....MW

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

7. Please confirm if:

a. You would like an offer that is compliant with the deterministic criteria detailed in paragraphs 2.5 to 2.13 of the **GB SQSS** YES/NO

and\or

b. You would like an offer on the basis of a **Design Variation** YES/NO

If yes, please provide any information relevant to such an offer below.

……..

……..

……..

If yes, please confirm if you require information from **The Company** in relation to the probability of **Notification of Restrictions on Availability** being issued YES/NO

8. Do you wish to suggest an ownership boundary different from that set out in CUSC Paragraph 2.12?

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

Yes [ ]

No [ ]

If yes please give details:……..……

……
……
……

9. Are you considering building any assets that would be identified as **Transmission Connection Assets**? If you indicate yes **The Company** will contact you to discuss further details.

Yes [ ]

No [ ]

APPLICATION FOR A NEW CONNECTION

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION D. PROGRAMME

Please provide a suggested development and construction programme in bar chart form for the work necessary to install the **User Development** (not the **Transmission Connection Assets** needing to be installed) indicating the anticipated date when the connection will be required to be made and any other key dates such as back feed date.

If not already included in the above bar chart please provide details of when the **Applicant** expects to be completing the substantive works that lead to the completion of the following phases of the **User Development** or reach the following relevant key milestones below and other additional milestones as necessary (working backwards from expected connection date at 'year 0'). This information is expected to provide the anticipated project overview at the time of application:-

- Planning Application Submitted (Town & Country Planning*, S36,S37)
- Planning Consent Awarded
- Plant Ordered (i.e. **Power Station** or substation)
- Construction Started (site mobilisation)
- Construction Completed

Notes

* The consent for the **User's Power Station** granted under Section 36 of the Electricity Act or planning permission for the **User's Power Station** granted under the Town and Country Planning Act 1990 or any amendment thereto in England and Wales or the Town and Country Planning (Scotland) Act 1997 or any amendment thereto in Scotland.

CONNECTION APPLICATION

1. We hereby apply to connect our **Plant** and **Apparatus** to the **GB Transmission System** and for **Local Capacity Nomination** at a **New Connection Site**. We agree to pay **The Company's** Engineering Charges on the terms specified in the **Notes** to the **Connection Application**.

2. We will promptly inform **The Company** of any change in the information given in this application as quickly as practicable after becoming aware of any such change.

3. If we are not already a **CUSC Party** we undertake for the purposes of this application to be bound by the terms of the **Grid Code** from time to time in force and to sign a **CUSC Accession Agreement**.

4. We authorise the release of certain information, on the grounds of commercial confidentiality, to the appropriate **Public Distribution System Operator(s)** or to the **Relevant Transmission Licensee**, should it be considered necessary.

5. We confirm that we:

meet **The Company Credit Rating**	[ ]
do not meet **The Company Credit Rating.**	[ ]

6. We confirm our agreement to the disclosure in the manner set out in Paragraph 6.30.3 of **CUSC** of the information specified in such Paragraph.

7. We confirm that we are applying in the category of:

Directly Connected Power Station	**[ ]**
Non-Embedded Customer	**[ ]**
Distribution System Directly Connected to the GB Transmission System	**[ ]**

[Please tick correct option].

SIGNED BY

……..

For and on behalf of the **Applicant**

Date: .....

END OF EXHIBIT B

CUSC - EXHIBIT C

THE CONNECTION AND USE OF SYSTEM CODE

CONNECTION OFFER

DIRECTLY CONNECTED POWER STATIONS

NON EMBEDDED CUSTOMER

DISTRIBUTION SYSTEM DIRECTLY

CONNECTED TO THE GB TRANSMISSION SYSTEM

The Company Secretary

Date: [ ]

Dear Sirs

CONNECTION OFFER - [site] [reference]

Set out below is our offer for connection [and use of the **GB** Transmission System**] at [site/substation]. Please note that certain expressions which are used in this **Offer** are defined in the Interpretation and Definitions (contained in Section 11 of the **CUSC**) and when this occurs the expressions have capital letters at the beginning of each word and are in bold.

~~1.~~ **1.** **The Company** offers to enter into a **Bilateral Connection Agreement** and **Construction Agreement** covering the **Connection Site**, reference number [ ]. If you are not already a **CUSC Party** you are required to enter into the enclosed **CUSC Accession Agreement.**

~~2.~~ **2.** It is a condition of this **Offer** that (i) you also enter into an **Interface Agreement** covering the **Connection Site** in a form to be agreed between the parties but substantially in the form of Exhibit O of the complete **CUSC** [and (ii) where required by **The Company** you enter into a **Transmission Related Agreement** *(power station with **Design Variation** and\or **Non Standard Boundary** only)*].

~~3.~~ **3.** It is a condition of this **Offer** that the **Connection Site** is not a nominated site under the "NAECI" (the National Agreement for the Engineering Construction Industry) conditions and will not become one and any agreement for this site will be conditional upon this. In the event that this condition should not be met, **The Company** will be entitled to revise all the dates and charges contained in the **Bilateral Connection Agreement** and **Construction Agreement.**

~~4.~~ **4.** The technical conditions with which you must comply as a term of this **Offer** are set out in the **Grid Code**. Additional technical conditions are set out in the Appendices to the **Bilateral Connection Agreement**. It is your responsibility to ensure that your equipment complies with the requirements of the relevant conditions.

5. The **Offer** is made on the basis of a **Local Capacity Nomination of [ ].**

~~5.~~ **6.** This **Offer** is open for acceptance according to the terms of Paragraph 2.13 of the **CUSC** and the **Transmission Licence**. Please note your right to make an application to the **Authority** to settle the terms of the offer pursuant to Standard Condition C9 of the **Transmission Licence**.

~~6.~~ **7.** Please note the provisions of Paragraph 6.10.4 of the **CUSC** in respect of interactive offers which, inter alia, allows **The Company** to vary the terms of this **Offer** if a **Connection** or **Modification Offer**, which interacts with this **Offer**, is accepted first. In terms of Paragraph 6.10.4 of the **CUSC**, **The**

** Delete if connection only.

Company will advise you of another offer being made by **The Company**, which may interact with your **Offer**.

~~7.~~ **8.** Please note that in accordance with the obligation in Paragraph 1.3.3 of the **CUSC** a **Mandatory Services Agreement** must be entered into not later than 6 months (or such lesser time as may be agreed) prior to the expected **Commissioning Programme Commencement Date**.

~~8.~~ **9.** To accept this **Offer**, please sign and return the originals of the [**CUSC Accession Agreement** and] **Bilateral Connection Agreement** [,**Construction Agreement**] attached to this **Offer** as Sections A. **The Company** will then itself countersign these agreements and one original of each will be returned to you for your retention. The agreements are only effective in accordance with their terms once they have been countersigned by **The Company**.

~~9.~~ **10.** All communications in relation to this **Offer** must, in the first instance, be directed to [description].

Yours faithfully

.....
for and on behalf of
The National Grid Company plc

SECTION A
FORM OF BILATERAL CONNECTION AGREEMENT AND CONSTRUCTION AGREEMENT [AND CUSC ACCESSION AGREEMENT]

END OF EXHIBIT C

CUSC - EXHIBIT D

THE CONNECTION AND USE OF SYSTEM CODE

USE OF SYSTEM APPLICATION

EMBEDDED GENERATOR
DISTRIBUTION INTERCONNECTOR OWNER
SMALL POWER STATION TRADING PARTY

PLEASE STUDY THE FOLLOWING NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM.

Please note that certain expressions which are used in this application form are defined in the Interpretation and Definitions (contained in Section 11 of the **CUSC**) and when this occurs the expressions have capital letters at the beginning of each word and are in bold. If the **Applicant** has any queries regarding this application or any related matters then the **Applicant** is recommended to contact **The Company**[1] where our staff will be pleased to help.

1. **The Company** requires the information requested in this application form for the purposes of preparing an **Offer** (the "**Offer**") to enter into an agreement for use of the **GB Transmission System**. It is essential that the **Applicant** should supply all information requested in this application form and that every effort should be made to ensure that such information should be accurate.

2. Where **The Company** considers that any information provided by the **Applicant** is incomplete or unclear, or further information is required, the **Applicant** will be requested to provide further information or clarification. The provision/clarification of this information may impact on **The Company's** ability to commence preparation of an **Offer**.

3. Should there be any change in the information provided by the **Applicant** immediately inform **The Company** of such a change. Where this is a change in the information provided for Sections B to D then the **Applicant** should inform **The Company** to see if such a change can be accommodated as it is unlikely that material changes could be accommodated. If **The Company** cannot accommodate such a change bearing in mind the timescales within which the **Offer** must be made then the application will be processed on the original information although it is open to the **Applicant** to withdraw the application.

4. **The Company** shall charge the **Applicant**, and the **Applicant** shall pay to **The Company**, **The Company's** Engineering Charges in relation to the application. A fee will be charged by **The Company** in accordance with the **Charging Statements**. No application will be considered until such payment has been received.

5. The effective date upon which the application is made shall be the later of the date when **The Company** has received the application fee pursuant to Paragraph 4 above or the date when **The Company** is reasonably satisfied that the **Applicant** has completed Sections A-D. **The Company** shall notify the **Applicant** of such date.

6. **The Company** will make the **Offer** in accordance with the terms of Paragraph 3.7 (**Use of System Application**) and Paragraph 6.10 (**Modifications** and **New Connection Sites**) of the **CUSC** and the

[1] Customer Services, National Grid Electricity Transmission plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA (Telephone No. 01926 654634)

Transmission Licence.

7. **The Company** will make the **Offer** as soon as is reasonably practicable and, in any event, within 28 days of the effective date of the application or such later period as the **Authority** agrees to. The **Offer** may, where it is necessary to carry out additional extensive system studies to evaluate more fully the impact of the proposed development, indicate the areas that require more detailed analysis. Before such additional studies are required, the **Applicant** shall indicate whether it wishes **The Company** to undertake the work necessary to proceed to make a revised **Offer** within the 28 days period or, where relevant the timescale consented to by the **Authority**. To enable **The Company** to carry out any of the above mentioned necessary detailed system studies the **Applicant** may, at the request of **The Company**, be required to provide some or all of the **Detailed Planning Data** listed in Part 2 of the Appendix to the **Planning Code** which is part of the **Grid Code**.

8. In the course of processing your application, it may be necessary for **The Company** to consult the appropriate **Public Distribution System Operator(s)** on matters of technical compatibility of the **GB Transmission System** with their **Distribution System(s)** or to consult the **Relevant Transmission Licensees** to establish the works required on the **GB Transmission System**. On grounds of commercial confidentiality **The Company** shall need your authorisation to the release to the **Public Distribution System Operator(s)** or the **Relevant Transmission Licensees** of certain information contained in your application. Any costs incurred by **The Company** in consulting the **Public Distribution System Operator(s)** or **Relevant Transmission Licensees** would be included in **The Company Charges** for the application. If it is found by the **Public Distribution System Operator(s)** that any work is required on their **Distribution System(s)**, then it will be for the **Public Distribution System Operator(s)** and the **Applicant** to reach agreement in accordance with Paragraph 6.10.3 of the **CUSC**.

9. In accordance with 6.30.3 of **CUSC The Company** will need to disclose details of the **Bilateral Embedded Generation Agreement** entered into and shall need authorisation from the **Applicant** in respect of this.

10. If the **Applicant** is not already a **CUSC Party** the **Applicant** will be required as part of this application form to undertake that he will comply with the provisions of the **Grid Code** for the time being in force. Copies of the **Grid Code** and the **CUSC** are available on **The Company's Website**[2] and the **Applicant** is advised to study them carefully. **Data** submitted pursuant to this application shall be deemed submitted pursuant to the **Grid Code**.

11. **The Company's Offer** will be based to the extent appropriate upon its standard form terms for **Use of System Offer** and the **Charging**

[2] **www.nationalgrid.com/uk/electricity**

Statements issued by **The Company** under Standard Conditions C4 and C6. The **Applicant** should bear in mind **The Company 's** standard form terms of **Offer** when making this application.

12. In particular please note that **The Company** may require as a condition of the **Offer**, that the **Applicant's Plant** or **Apparatus** should meet or provide some or all of the technical requirements set out in the Appendices of the draft **Bilateral Embedded Generation Agreement** attached to **The Company's** standard form terms of **Offer** and may propose that the **Applicant's Plant** or **Apparatus** should have the capability to provide **Mandatory Ancillary Services**.

13. As provided for in **Grid Code** CC8.1 Generators and DC Converter station owner should appreciate that they will be required to perform **Mandatory Ancillary Services** to ensure that System Operational Standards can be achieved. This requirement may have implications towards plant specification. You should be satisfied before an application is made that your intended plant design can meet the requirements.

14. **The Applicant** has the ability to pay a fixed price application fee in respect of their application or pay the actual costs incurred (variable price application fee). The fixed price application fee is derived from analysis of historical costs of similar applications. The variable price application fee is based on an advance of the Transmission Licensee's Engineering and out of pocket expenses and will vary according to the size of the scheme and the amount of work involved. The **Applicant** is requested to indicate their preferred basis of application fee in Section A question 4. The **Applicant** is advised that further information can be obtained from the **Charging Statements** which can be found on **The Company's Website**[3].

15. Applicants should note that the **Offer** will contain terms **Use of System** on the basis of its **Local Capcity Nomination** and that **Use of System** on the basis of **Transmission Entry Capacity** will be allocated through the **Long Term Access Auction**. Please note a **Local Capacity Nomination** is a pre-requirement for entry into the **Long Term Access Auction**.

[3] **www.nationalgrid.com/uk/electricity**

29.16. ~~15.~~ **Applicants** have the option to request a **Connection Offer** on the basis of a **Design Variation**. In requesting such an **Offer**, the **Applicant** acknowledges that the connection design (which provides for connection to the **GB Transmission System**) will fail to satisfy the deterministic criteria detailed in paragraphs 2.5 to 2.13 of the **GB SQSS**. In making such an **Offer**, in accordance with its obligations under Paragraphs ~~2.13.2~~**2.12.2** and ~~2.13.7~~**2.12.7** of **CUSC**. **The Company** may include **Restrictions on Availability**. If **Applicants** require further assistance on this option they are recommended to contact **The Company** before completing this application form.

30.17. ~~16.~~ Please complete this application form in black print and return it together with the appropriate application fee to Customer Services Manager, National Grid Electricity Transmission plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA (Telephone No. 01926 65 4634). In addition to returning the application to the Customer Services Manager an electronic form may be e-mailed to **The Company** at camdata@uk.ngrid.com

31.18. ~~17.~~ For the most up to date contact details applicants are advised to contact **The Company Website**[3].

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION A. DETAILS OF APPLICANT (in respect of this application)

1. **Registered Company**

   Name:……....

   Address (of Registered Office in the case of a Company):

   .....

   .....

   .....

   Company Number:.....

   Parent Company Name (if applicable):..……..

2. **Company Secretary or person to receive CUSC notices**

   Name:……....

   Email:……..

   Telephone:……....

   Fax:……....

3. **Commercial Contact/Agent (person to receive Offer if different from Company Secretary or person to receive CUSC notices identified in 2 above)**

   Name:……....

   Title:……

   Address:……....

   ……

   ……

   Email:……..

   Telephone:……....

   Fax:……....

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

4. Please identify which application fee basis you wish to use for this application.

   Fixed application fee [ ]

   Variable application fee [ ]

5. If this is an application for connection to the **GB Transmission System** in England and Wales please complete 5a. If this is an application for connection to the **GB Transmission System** in Scotland please complete 5b.

5a. Have you made any applications for connection to the **GB Transmission System** in Scotland which are being processed prior to **Offer** by **The Company** or where an **Offer** has been made that **Offer** has not yet been accepted by you but remains open for acceptance?

   If so, are such applications intended as alternatives to this one i.e. you intend to choose which of this or those other applications to proceed with on the basis of the offer made.

   Yes – please list the applications.

   ……

   ……

   No [ ]

   Not sure [ ]

   (**The Company** will contact you to clarify)

5b. Have you made any applications for connection to the **GB Transmission System** in England and Wales which are being processed prior to **Offer** by **The Company** or where an **Offer** has been made that **Offer** has not yet been accepted by you but remains open for acceptance?

   If so, are such applications intended as alternatives to this one i.e. you intend to choose which of this or those other applications to proceed with on the basis of the offer made.

   Yes – please list the applications.

   ……

   ……

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

No [ ]

Not sure [ ]

(The Company will contact you to clarify)

6. Are you intending to enter into a **Long Term Access Auction**?

Yes [}

No [ ]

Not sure [ ]

If so do you want the **Offer** to be conditional on your being allocated **Transmission Entry Capacity** under the **Long Term Access Auction**?

If no answer is provided **The Company** will assume that you do not want the **Offer** to be conditional.

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION B: THE PROPOSED SITE OF CONNECTION TO A DISTRIBUTION SYSTEM

1. Please identify (preferably by reference to an extract from Ordnance Survey Map) the intended location of the **Plant** and **Apparatus** (the "User Development") which it is desired should be connected to the **Distribution System**.

.....

.....

.....

2. If you believe that a new sub-station will be needed, please indicate by reference to a plan your suggested location for it.

.....

.....

.....

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION C. TECHNICAL INFORMATION

1. Summary of Application (brief description of plant to be connected):
   .....
   .....
   .....

2. Please provide the data listed in Part 1 of the Appendix to the **Planning Code** which are applicable to you. Note: the data concerned forms part of the **Planning Code** and **Data Registration Code**. **Applicants** should refer to these sections of the **Grid Code** for an explanation. Further guidance is available from **The Company** on request.

3. Please provide a copy of your **Safety Rules** if not already provided to **The Company**.

   Included [ ]

   Already provided [ ]

   Will be provided later [ ]

4. Please indicate if your plant may be able to provide (or you could consider providing) the following technical capability:-

   a. Generation from Auxiliary Units (Reserve Services) [ ]

   b. Spinning Generation [ ]

   c. Fast Start capability [ ]

   d. Frequency Response above Mandatory requirements [ ]

   e. Demand Reduction / Management [ ]

   f. Reactive capability above Mandatory requirements [ ]

   g. Synchronous Compensation [ ]

   h. Black Start Capability [ ]

   i. Emergency Maximum Generation [ ]

   j. Intertrip [ ]

   k. Other (please detail below) [ ]

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

…….

……

The Company's Website[4] provides more information on the terms it offers for such technical capability.

5. Please state the required **Local Capcity Nomination** ~~**Transmission Entry Capacity**~~……....MW

~~5.~~**6.** Please confirm if:

a. You would like an offer that is compliant with the deterministic criteria detailed in paragraphs 2.5 to 2.13 of the GB SQSS YES/NO

and\or

b. You would like an offer on the basis of a Design Variation YES/NO

If yes, please provide any information relevant to such an offer below.

……..

……..

……..

If yes, please confirm if you require information from The Company in relation to the probability of Notification of Restrictions on

[4] http://www.nationalgrid.com/uk/Electricity/Balancing/services

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

Availability being issued YES/NO

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

SECTION D. PROGRAMME

Please provide a suggested development and construction programme in bar chart form for the work necessary to install the **User Development** indicating the anticipated date when the connection will be required to be made and any other key dates such as back feed date.

If not already included in the above bar chart please provide details of when the **Applicant** expects to be completing the substantive works that lead to the completion of the following phases of the **User Development** or reach the following relevant key milestones below and other additional milestones as necessary (working backwards from expected connection date at 'year 0'). This information is expected to provide the anticipated project overview at the time of application:-

- Planning Application Submitted (Town & Country Planning*, S36,S37)
- Planning Consent Awarded
- Plant Ordered (i.e. **Power Station** or substation)
- Construction Started (site mobilisation)
- Construction Completed

Notes

* The consent for the **User's Power Station** granted under Section 36 of the Electricity Act or planning permission for the **User's Power Station** granted under the Town and Country Planning Act 1990 or any amendment thereto in England and Wales or the Town and Country Planning (Scotland) Act 1997 or any amendment thereto in Scotland.

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

USE OF SYSTEM APPLICATION

Please study the notes before completing and signing this application form.

1. We hereby apply to use the **GB Transmission System** from our connection to [ ] **Distribution System**.

2. We will promptly inform **The Company** of any change in the information given in this application as quickly as practicable after becoming aware of any such change.

3. If we are not already a **CUSC Party** we undertake for the purposes of this application to be bound by the terms of the **Grid Code** from time to time in force and to sign a **CUSC Accession Agreement**.

4. We authorise the release of certain information, on the grounds of commercial confidentiality, to the appropriate **Public Distribution System Operator(s)** or **Relevant Transmission Licensees** should it be considered necessary.

5. We confirm that we do/do not meet the **Approved Credit Rating** [and **The Company Credit Rating**].

6. We confirm our agreement to the disclosure in the manner set out in Paragraph 6.30.3 of **CUSC** of the information specified in such Paragraph.

7. We confirm that we are applying in the category of :

Embedded Generator	**[ ]**
Distribution Interconnector Owner	**[ ]**
Small Power Station Trading Party	**[ ]**

[Please tick correct option].

SIGNED BY:

.....

For and on behalf of the **Applicant**

Date:.....

END OF EXHIBIT D

APPLICATION FOR USE OF SYSTEM

PLEASE ENSURE THAT YOU HAVE STUDIED THE NOTES BEFORE COMPLETING AND SIGNING THIS APPLICATION FORM

CUSC – EXHIBIT E

THE CONNECTION AND USE OF SYSTEM CODE

USE OF SYSTEM OFFER

EMBEDDED GENERATOR
DISTRIBUTION INTERCONNECTOR OWNER
SMALL POWER STATION TRADING PARTY

The Company Secretary

Date: [ ]

Dear Sirs

USE OF SYSTEM OFFER
[SITE OF CONNECTION] [REFERENCE]

Set out below is our offer for use of the **GB Transmission System** at [site/substation]. Please note that certain expressions which are used in this **Offer** are defined in the Interpretation and Definitions (contained in Section 11 of the **CUSC**) and when this occurs the expressions have capital letters at the beginning of each word and are in bold.

1 **The Company** offers to enter into a **Bilateral Embedded Generation Agreement** [and **Construction Agreement**] reference number [ ] in the form and terms attached as Section A.

2 It is a condition of this offer that:

(i) if not already a **CUSC** Party you enter into a **CUSC Accession Agreement;**

(ii) you satisfy **The Company** that you have entered into a **Distribution Agreement** with the owner/operator of the **Distribution System** for the connection of the **User's Plant** to and the use of such **Distribution System**;

[(iii) where required by **The Company** that you enter into a **Transmission Related Agreement** *(power station with **Design Variation** only)]*

3 The technical conditions with which you must comply as a term of this offer are set out in the **Grid Code**. Additional or different technical conditions are set out in the Appendices to the **Bilateral Embedded Generation Agreement**. It is your responsibility to ensure that your equipment complies with the requirements of the relevant conditions.

4 The **Offer** is made on the basis of a **Local Capacity Nomination of** [ ].

5 This offer is open for acceptance according to the terms of Paragraph 3.7.4 of the **CUSC** and the **Transmission Licence**. Please note your right to make an application to the **Authority** to settle the terms of the offer pursuant to Standard Condition C9 of the **Transmission Licence**.

~~5~~6 Please note the provisions of Paragraph 6.10.4 of the **CUSC** in respect of interactive offers which, inter alia, allows **The Company** to vary the terms of this **Offer** if a **Connection** or **Modification Offer**, which interacts with this **Offer**, is accepted first. In terms of Paragraph 6.10.4 of the **CUSC**, **The Company** will advise you of another offer being made by **The Company**, which may interact with your **Offer**.

~~6~~7 To accept this offer, please sign and return the originals of the **Bilateral Embedded Generation Agreement** [and **CUSC Accession Agreement**] [and **Construction Agreement**] attached to this offer as Section A. **The Company** will then itself execute the Agreements and one original of each will be returned to you for your retention. The Agreements are only effective in accordance with their terms once they have been countersigned by **The Company**.

~~7~~8 All communications in relation to this **Offer** should, in the first instance, be directed to [Description].].

Yours faithfully

.....
for and on behalf of
National Grid Electricity Transmission plc

SECTION A
FORM OF BILATERAL EMBEDDED GENERATION AGREEMENT
AND CONSTRUCTION AGREEMENT
AND CUSC ACCESSION AGREEMENT

END OF EXHIBIT E

Legal Text to give effect to Working Group Alternative Amendment 3

WGAA3 **Changes from WGAA2 Drafting**

CUSC Sec 2	No change
CUSC Sec 3	No change
CUSC Sec 3 Appendix 3	No change except a) insertion of the following as new paragraph at end of clause 2.3: 2.3A Any **TEC (SR) MW** shall not be treated as available for the purposes of any sharing or trading rights under this Appendix 3. In addition a **User** will not be entitled to utilise any of the other access products in this Appendix 3 in preference to **Use of System** by means of the **TEC (SR) MW**. b) insertion of new Clause 12 as attached
CUSC Sec 5	Where refer to "TEC Cancellation Charge" also refer to "TEC Final Sums".
CUSC Sec 6	No change
CUSC Sec 9	No change
Section 11	Definitions as attached
Schedule 2 Exhibit 1 (Bilateral Connection Agreement)	As attached
Schedule 2 Exhibit 2 (BEGA)	As attached
Schedule 2 Exhibit 3 (Construction Agreement)	As attached (change is to reflect that liability is for LCN Final sums (ie actual costs rather than generic cancellation charge)
CUSC Sch 4	New Form as attached

Exhibit B	No change
Exhibit C	No change
Exhibit D	No change
Exhibit E	No change

Sec 11 Proposed New and Amended Defined Terms (WGAA3)

"**Access Capacity**"	the sum of a **User's TEC** and **Short Term Access Products** (if any);
"**Auction Closure Date**"	in respect of each **Long Term Access Auction**, the point in time as defined in the **SO Long Term Release Methodology**;
"**Cancellation Charge"**	the charge payable on termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** or **Construction Agreement** as calculated in accordance with the **User Commitment Principles**;
"Cancellation Periods"	the period(s) as set out in a **User's Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** by reference to which the level of **TEC Final Sums** payable are identified;
"**CAP 166 Transition Period**"	as defined in **CUSC** Section 10;
"**Capacity Reduction Charge**"	the charge payable on a reduction in **LCN** as calculated in accordance with Part 2 of the **User Commitment Principles**;
"**Effective LCN Decrease Date**"	the date as defined in Paragraph 1.4.3 of Appendix 3 of Section 3 of the **CUSC**;
"**First LCN Security Period**"	means the period from and including a) the day of signing of the **Construction Agreement** or b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** 5 **Business Days** after the **Auction Closure Date** until in each case the next following 31st March or 30th September (whichever shall first occur);
"**First TEC Security Period**"	means the period from and including a) the day of signing of the **Construction Agreement** or b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** 5 **Business Days** after the **Auction Closure Date** until the end of that **Cancellation Period**;
"**Initial Long Term Access Auction**"	the annual auction held by **The Company** in accordance with the **SO Long Term Release Methodology** during the **CAP 166 Transition Period;**
"**LCN Final Sums**"	mean the sums payable by a **User** on termination of its **Construction Agreement** and specified in a **User's Construction Agreement**;
"**LCN Security Period**"	means the **First LCN Security Period** and the **Subsequent LCN Security Periods**.
"**LCN Transmission**	those **Transmission Reinforcement Works** that are required from

Reinforcement Works"	the **Node** to connect into a **MITS Substation**, inclusive of substation works, a substation with more than 4 **Transmission Circuits** connecting at the substation and in relation to a particular **User** as defined in its **Construction Agreement**.
"**LCN/TEC Register**"	the register set up by **The Company** pursuant to Section 3 Appendix 3 Paragraph 2.4;
"**Local Capacity Nomination**" **or** "**LCN**"	the station capacity (in whole MW) being the maximum figure at which a **User** can export power onto the **GB Transmission System** at a **Node**, and which, in relation to a **User** acting in the category of a **Power Station** directly connected to the **GB Transmission System**, must never exceed it's **Connection Entry Capacity**;
"Long Run Priced Rights"	has the meaning given to this term in the **Long Term access Auction**;
"**Long Term Access Auction**"	the annual auction held by **The Company** in accordance with the **SO Long Term Release Methodology;**
"**MITS Substation**"	means a substation at a **Grid Supply Point** with 2 or more **Transmission Circuits** connecting at the substation.
"**Node**"	Shall mean: (a) in the case of a **User** acting in the category of a **Power Station** directly connected to the **GB Transmission System**, the **Connection Site** specified in a **User's Bilateral Connection Agreement**; and (b) in the case of a **User** acting in the category of an **Embedded Power Station**, the **Grid Supply Point** that can be reasonably associated with the **Embedded** generation site specified in a **User's Bilateral Embedded Generation Agreement**;
"Short Run Priced Rights"	has the meaning given to this term in the **Long Term access Auction**;
"**Short Term Access Products Charge**":	the element of **Use of System Charges** payable by a **User** arising out of a **User's Use of System** by means of a **Short Term Access Product**;
"**Short Term Access Products**"	any of the following products: the **STTEC**, **LDTEC** and **Temporary TEC**;
"**SO Long Term Release Methodology**"	the methodology prepared and maintained by **The Company** pursuant to **CUSC** Section 10 and Section 3 Appendix 3 Paragraph 2 respectively;
"**Subsequent FS Security Period**"	means each subsequent period of six calendar months commencing on the last day of the **First FS Security Period** and continuing until the **Construction Agreement** is terminated and the **LCN Final Sums** shall have been paid;
"**Subsequent TEC**	means each subsequent **Cancellation Period** commencing on the last day of the **First TEC Security Period** and continuing until the

Security Period"	**TEC Security Period End Date**;
"**TEC Cancellation Charge**"	that element of the **Cancellation Charge** payable in the event of termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** after a **User** has been allocated, or acquired by **TEC Trade, Transmission Entry Capacity** and prior to the end of the **TEC Period** relating to such **Transmission Entry Capacity** as calculated in accordance with **CUSC** the **User Commitment Principles**;
"**TEC Final Sums**"	mean the sums payable by a **User** on termination prior to the **TEC Security Period End Date** and specified in a **User's Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**;
"**TEC Security Period**"	means the **First TEC Security Period** and the **Subsequent TEC Security Periods**.
"**TEC Security Period End Date**"	the end of the **Financial Year** within the **TEC Period** in which the **Transmission Entry Capacity** allocated to the **User** ceases to be by reference to **TEC (SR) MW**;
"**TEC Period**"	a period in whole **Financial Years** allocated to a **User** under the **Long Term Access Auction** and during which the **User** can export onto the **GB Transmission System** utilising **TEC**;
"TEC (LR) MW"	those MWs allocated as **TEC** but allocated under the **Long Term Access Auction** as available on the basis of **Long Run Priced Rights**;
"TEC (SR) MW"	those MWs allocated as **TEC** but allocated under the **Long Term Access Auction** as available on the basis of **Short Run Priced Rights** and specified in Appendix C in the **User's Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**;
"**Transmission Circuit**"	as defined in the **GBSQSS**;

Proposed Amendments to Existing Defined Terms

Replace **"Transmission Entry Capacity"**	the figure allocated as such to a **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and set out in Appendix C of the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**;
"TEC Register"	shall be deleted
"Operational Notification":	the notice of that name given to the **User** by **The Company** under Paragraphs 1.5.5 or 3.2.6 7 of the **CUSC** or under a **Construction Agreement**;
Various – **"Exchange rate Requests", "LDTEC", "STECC", "TEC Increase Request" and "Temporary TEC Exchanges"**	the references to Section 3 and Paragraphs within Section 3 where used in the definitions of and Exhibits relating to these shall be replaced with the corresponding references in Section 3 Appendix 3.
"Use of System Payment Date":	the date for payment of **Use of System Charges**, **Short Term Access Products Charges;**
Definitions of "Bi annual Estimate" and **"Secured Amount Statement"**	Amend to include reference to Schedule 4

SCHEDULE 2 - EXHIBIT 1

DATED [ ]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

BILATERAL CONNECTION AGREEMENT

[FOR A DIRECTLY CONNECTED POWER STATION]

[FOR A DIRECTLY CONNECTED DISTRIBUTION SYSTEM]

[FOR A NON-EMBEDDED CUSTOMER SITE]

[FOR AN INTERCONNECTOR OWNER]

At [ ]

Reference: [ ]

CONTENTS

Appendix F3 **Site Specific Technical Conditions - Special Automatic Facilities**

Appendix F4 **Site Specific Technical Conditions - Protection and Control Relay Settings - Fault Clearance Times**

Appendix F5 **Site Specific Technical Conditions - Load Shedding Frequency Sensitive Relays**

THIS **BILATERAL CONNECTION AGREEMENT** is made on the [ ] day of [ ] 200[ ]

BETWEEN

(1) **National Grid Electricity Transmission plc** a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** is required to prepare a Connection and Use of System Code **(CUSC)** setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for [**Connection** to] [and use of] [**Modification** of its existing **Connection** to [and use of]] the **GB Transmission System** and pursuant to the **Transmission Licence The Company** is required to offer terms in this respect.

(C) The **User** has applied for connection [and use] in the capacity of a [ ] as set out in Paragraph 1.2.4 of the **CUSC**.

(D) **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between **CUSC Parties**).

(E) This **Bilateral Connection Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.

[(F) The parties are also on even date herewith entering into a **Construction Agreement**.]

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** have the same meanings, interpretations or constructions in

this **Bilateral Connection Agreement** [and the following terms and expressions shall have the meaning set out below:-

"Construction Agreement"	the agreement made between the parties of even date herewith for the carrying out of construction works;
"Charging Date"	as defined in the **Construction Agreement**.

]

["**Circuit [ ]**" [insert detailed description of circuit(s) affected by the **Design Variation**] *(power station with **Design Variation** and\or **Non Standard Boundary** only)*;]

["**Outage Conditions [ ]**" the unavailability of **Circuit [ ]** as a result of

(a) a [planned]/[unplanned]/[planned or unplanned] incident occurring directly on **Circuit [ ]**; or

(b) **Circuit [ ]** requiring to be **Deenergised** for health and safety reasons to allow for the planned or unplanned availability of a circuit in the immediate vicinity of **Circuit [ ]**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

["**Outage Period**" the period of time during which the **Outage Conditions** and/or reduced circuit capability apply; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Circuit Restrictions**" means the notification issued by **The Company** to the **User** in accordance with Clause [10.8] of this **Bilateral Connection Agreement**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Outage Conditions**" means the notification issued by **The Company** to the **User** in accordance with Clause [10.4] of this **Bilateral Connection Agreement**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Notification of Restrictions on Availability**" means a **Notification of Outage Conditions** and\or a **Notification of Circuit Restrictions** as

applicable; *(power station with **Design Variation** and\or **Non Standard Boundary** only)*]

["**Relevant Circuits**" means [**Circuit [ ]**]; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

["**Transmission Related Agreement**" means the agreement of even date entered into between the parties for the provision of and payment for **Balancing Services** in respect of **Bid-Offer Acceptances**; *(power station with **Design Variation** and\or **Non Standard Boundary** only)]*

2. COMMENCEMENT

This **Bilateral Connection Agreement** shall commence on [ ].

3. THE CONNECTION SITE ~~AND~~, TRANSMISSION CONNECTION ASSETS AND NODE

3.1 The **[Connection Site/Node]** and **Transmission Connection Assets** to which **the Connection rights granted pursuant to** this **Bilateral Connection Agreement** ~~relates is~~**relate are** more particularly described in Appendix A.

4. CONNECTION CHARGES

The **Connection Charges** payable by the **User** in accordance with the **CUSC** in respect of the **Transmission Connection Assets** set out in Appendix A [(including the **One-Off Charge**)] are set out in Appendix B. These **Connection Charges** shall be payable by the **User** from the ~~[**CUSC Implementation Date**] [or] [~~ **Charging Date.**~~]~~

5. [USE OF SYSTEM *(power station only)*

5.1 The right to use the **GB Transmission System** at the **Node** by means of the access products (other than **Transmission Entry Capacity**) in **CUSC** Section 3, Appendix 3, up to the **User's Local Capacity Nomination**, shall commence on and **Use of System Charges** shall be payable by the **User** in respect of these from the ~~[**CUSC Implementation Date**] [or] [~~**Charging Date**.~~]~~

5.2 The right to use the **GB Transmission System** at the **Node** by means of **Transmission Entry Capacity** shall only apply where such right has been allocated to the **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and shall commence on and continue for the duration of the **TEC Period**.

5.3 **Transmission Network Use of System Charges** and **Balancing Services Use of System Charges** shall be payable from and for the duration of the **TEC Period** in respect of the **TEC (LR) MW** and any **TEC (SR) MW** respectively.

6. CREDIT REQUIREMENTS

6.1 The amount to be secured by the **User** from [date] in respect of **Termination Amounts** is set out in the **Secured Amount Statement** issued from time to time and as varied from time to time in accordance with Section 2 of the **CUSC**.

6.2 The amount (if any) to be secured by the **User** in respect of **TEC Final Sums** in accordance with **CUSC** Schedule 4 and the relevant **TEC Security Period(s)** are set out in Appendix E.

7. CONNECTION ENTRY CAPACITY, LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

7.1 The **Connection Entry Capacity** in relation to the **Generating Units** and the **[Connection Site/ Node] and the Local Capacity Nomination** and the **Transmission Entry Capacity and TEC Period** in relation to the **[Connection Site / Node]**, are specified in Appendix C.

7.2 Appendix C Part ~~3~~4 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **[Connection Site/Node]** under the **Balancing and Settlement Code**. The **User** will provide **The Company** with the information needed to complete details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Local Capacity Nomination** and **The Company** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **The Company** prior to any alteration in the **BM Unit Identifiers** and **The Company** shall ~~prepared~~**prepare** and issue a revised Appendix C incorporating this information.

7.3 **The Company** shall monitor the **Users** compliance with its obligation relating to ~~**Transmission Entry Capacity**~~**LCN in relation to the [Connection Site/Node]** against the sum of metered volumes of the **BM Units** set out in Part ~~3~~4 of Appendix C submitted by the **User** for each **Settlement Period**.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The site specific technical conditions applying to the **Connection Site** are set out in Appendices F1 to F5 to this **Bilateral Connection**

Agreement as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

9. [ELECTRICAL BOUNDARY *(Non Standard Boundary only)*

The division of ownership of **Plant** and **Apparatus** shall be at [define ownership boundary]. For the avoidance of doubt, nothing in this Clause 9 shall effect any transfer of ownership in any **Plant** or **Apparatus**.]

10. [**RESTRICTIONS ON AVAILABILITY** *(power station with **Design Variation** and\or **Non Standard Boundary** only)*

10.1 [The division of ownership of **Plant** and **Apparatus** in Clause 9 above is contrary to the principles of ownership set out in **CUSC** Paragraph 2.12.]

10.2 [In addition the] [The] **User** acknowledges that the connection design which provides for connection to the **GB Transmission System** is a variation to the connection design as provided for in Chapter 2 of the **GB SQSS**.

10.3 It is a condition of the **GB SQSS** that any **Design Variation** satisfies the criteria set out in paragraphs 2.15 to 2.18 (inclusive) of the **GB SQSS** and on that basis [and in light of the non standard principles of ownership] the following provisions will apply.

10.4 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of the **Outage Conditions** and where practicable the expected **Outage Period**. Such notice shall be issued:

10.4.1 In the event that the **Notification of Circuit Outage** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, be in accordance with **Grid Code** OC2 requirements; or

10.4.2 In the event that the **Notification of Circuit Outage** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the method of such notification.

10.4.3 **The Company** shall promptly notify the **User** when the **Outage Period** will or has ceased.

10.5 **The Company** shall be entitled to revise the **Notification of Circuit Outage** given under Clause 10.4 above at any time.

10.6 The **User** will acknowledge receipt of such **Notification of Circuit Outage** and where practicable shall revise its **Output Useable** forecast for the affected **BM Unit** accordingly.

10.7 Following such **Notification of Circuit Outage** in accordance with Clause 10.4:

10.7.1 [(i) In respect of the **Outage Conditions [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the outage of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the outage of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

10.7.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

10.8 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of an event leading to a reduced circuit capability of **Circuit [ ]** and where practicable the expected **Outage Period**. Such notice (including any revision) shall be issued:

10.8.1 In the event that the **Notification of Circuit Restriction** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, be in accordance with **Grid Code** OC2 requirements; or

10.8.2 In the event that the **Notification of Circuit Restriction** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, such notice shall be given as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the means of such notification.

10.8.4 **The Company** shall promptly notify the **User** when the period of reduced circuit capability will or has ceased.

10.9 **The Company** shall be entitled to revise the **Notification of Circuit Restriction** given under Clause 10.8 above at any time.

10.10 Following such **Notification of Circuit Restriction** in accordance with Clause 10.8:

10.10.1 [(i) In respect of the reduction in capability of **Circuit [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the reduction in capability of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the reduction in capability of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

10.10.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

10.11 Where the **User** becomes aware or is notified by **The Company** of any breach of Clauses 10.7 or 10.10 above the **User** shall forthwith take all reasonable steps to comply with the provisions of that Clause.

10.12 Where the **User** breaches in whole or in part the provisions of Clause 10.7 or Clause 10.10 above, the **User** shall at **The Company's** request explain to **The Company's** satisfaction (acting reasonably) the reason for the breach and demonstrate to **The Company's** satisfaction that appropriate steps have been taken to ensure that such breach will not reoccur. In the event that the **User** does not do this **The Company** may give notice to the **User** reducing the **Local Capacity Nomination** of the **Connection Site** and Appendix C of this **Bilateral Connection Agreement** shall be varied accordingly. This **Local Capacity Nomination** shall apply until such time as the **User** has explained to **The Company's** reasonable satisfaction the reason for the breach and has demonstrated that appropriate steps have been taken to ensure that such breach will not reoccur and Appendix C shall be automatically amended thereafter to reflect the reinstatement of the **Local Capacity Nomination**.

10.13 If within 3 months of a breach of Clause 10.7 or Clause 10.10 above which entitled **The Company** to take action under Clause 10.12 above, the **User** has still failed to provide the explanation and\or demonstration required by **The Company** under Clause 10.12 then **The Company** may treat such breach as an **Event of Default** for the purposes of Section 5 of the **CUSC** and following such breach may give notice of termination to the **User** whereupon this **Bilateral Connection Agreement** shall terminate and the provisions of **CUSC** Paragraph 5.4.7 shall apply.

10.14 For the avoidance of doubt any **Deenergisation** resulting from the **Outage Conditions** as set out in the relevant **Notification of Restrictions on Availability** constitutes an **Allowed Interruption**.

10.15.1 **The Company** and the **User** shall act in accordance with **Good Industry Practice** to minimise so far as reasonably practicable the occurrence and duration of (i) the **Outage Conditions** and (ii) an **Event** leading to reduced circuit capability of the **Relevant Circuits**. **The Company** and the **User** will, recognising the effect of the **Outage Conditions** and the reduced circuit capability on the **User's** operations, coordinate the **Outage Conditions** and the reduced circuit capability on the **GB Transmission System** (where they occur as a result of a **Planned Outage**) and the **User's Plant** and **Apparatus** in accordance with **Good Industry Practice** and to the extent practicable. **The Company** and the **User** acknowledge however that even where **Planned Outages** are coordinated and agreed that **The Company** and\or the **User** may need to cancel or change such **Planned Outage**.

10.15.2 **The Company** and the **User** hereby acknowledge and agree that, where reasonably practicable, alternative operating arrangements shall be implemented to minimise the effect of **Outage Conditions** and reduced circuit capability [, including, but not limited to [describe potential arrangements]]. In the event that **The Company** and the **User** implement alternative operating arrangements in respect of an **Outage Condition** and reduced circuit capability, the provisions of Clauses 10.7 and 10.10

shall not apply to the extent that the alternative operating arrangements mitigate the restrictions (whether in whole or in part) that would otherwise apply to the **User** under this Clause 10 for all **Settlement Periods** or parts thereof falling within the **Outage Period** or period of reduced circuit capability.

10.17 In the event that the **GB Transmission System** conditions subsequently change such that the conditions required for a design variation under the **GB SQSS** are no longer met then **The Company** shall be entitled to revise Clause 1, this Clause 10 and the **Outage Conditions** as necessary to ensure that such **GB SQSS** conditions continue to be met.]

11. TERM

11. Subject to the provisions for earlier termination set out in the **CUSC** this **Bilateral Connection Agreement** shall continue until the **User's Equipment** is **Disconnected** from the **GB Transmission System** at the **Connection Site** in accordance with Section 5 of the **CUSC**.

12. VARIATIONS

12.1.1 Subject to Clause ~~10.2, 10.3~~12.2, 12.3, 12.4 **and** ~~**10.4**~~12.5 below, no variation to this **Bilateral Connection Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

12.2 **The Company** and the **User** shall effect any amendment required to be made to this **Bilateral Connection Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence,** an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

12.3 **The Company** has the right to vary Appendices A and B and C in accordance with this **Bilateral Connection Agreement** and the **CUSC** including any variation necessary to enable **The Company** to charge in accordance with the **Charging Statements**, or upon any change to the **Charging Statements**.

12.4 Appendices A and B shall be varied automatically to reflect any change to the **Construction Works or Transmission Connection Assets** as provided for in the **Construction Agreement**.

12.5 **The Company** has the right after each **Auction Closure Date** to vary Appendix C as necessary to record any **Transmission Entry Capacity** and the **TEC Period** and £/MW figure as allocated to the **User** under the **Long Term Access Auction** and Appendix D to record any **TEC Final Sums**.

13. GENERAL PROVISIONS

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Connection Agreement** *mutatis mutandis*.

14. TEC FINAL SUMS AND TEC CANCELLATION CHARGE

In the event of termination of this **Bilateral Connection Agreement** the **User** shall be liable to pay **The Company** the **TEC Final Sums** and **TEC Cancellation Charge** (if any) due in accordance with **CUSC** Schedule 4, payment in each case to be made within [14 days] of the date of **The Company's** invoice in respect of the same.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission plc)

SIGNED BY)
[name])
for and on behalf of)
[User])

APPENDIX A

TRANSMISSION CONNECTION ASSET/CONNECTION SITE/NODE

Company: [ ]

Connection Site: [ ]

Node: [ ]

Type: [ ]

Part 1 - Pre-Vesting Assets

Allocation	Description	Age (As at [ ])	Year

Part 2 - Post-Vesting Assets

Allocation	Description	Age (As at [ ])	Year

Part 3 - Energy Metering Systems (*)

Allocation	Description	Age (As at [ ])	Year

(*) FMS, Energy Metering Systems - The Electronics components have a 15 year replacement period. The Non-Electronics components have a 40 year replacement period.

All the above are inclusive of civil engineering works. At double busbar type substations, ownership ofmain and reserve busbars follows ownership of section switches.

Diagram Reference: [ ]

Appendix Reference: [ ]

Agreement Reference: [ ]

APPENDIX B

CONNECTION CHARGES/PAYMENT

Company: [ ]

Connection Site: [ ]

Type: [ ]

(1) Connection Charges

The Connection Charges set out below may be revised in accordance with the terms of this Bilateral Connection Agreement and/or the Construction Agreement and/or the CUSC and/or the Charging Statements

Part 1 - Pre-Vesting Assets

The Connection Charge for those assets extant at 31st March 1990 and specified in Appendix A Part 1 will be at an annual rate for the period [ ] to [ ] of £[ ] where

Rate of Return = [ ]%

Transmission Costs

Part A Site specific maintenance element = £[ ]
Part B Other transmission costs element = £[ ]

Part 2 - Post-Vesting Assets

The Connection Charge for those assets installed for this agreement after 31st March 1990
and specified in Appendix A Part 2 will be at an annual rate for the period [ ]
to [ ] of £[ ] where

Rate of Return = [ ]%

Transmission Costs

Part A Site specific maintenance element = £[ ]
Part B Other transmission costs element = £[ ]

Part 3 - Energy Metering Systems

For FMS, Energy Metering Systems assets, installed for this agreement as specified in Appendix A Part 3 the Connection Charge will be at an annual rate for the period from [ ] to [ ] of £[ ]

Part 4 - Miscellaneous Charges

The miscellaneous charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

Part 5 - One-off / Transmission Charges

The transmission charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

(2) Payment

The Connection Charges for Parts 1 to 6 shall be payable in equal monthly instalments as specified in Paragraph 6.6 of the CUSC

Appendix Reference: [ ]

APPENDIX C (Power Stations)

CONNECTION ENTRY CAPACITY, LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY

Company:

Grid Supply Point/Connection Site/**Node**:

Part 1 Connection Entry Capacity

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Power Station	[ ]
Generating Unit	
Genset 1	[ ]
Genset 2	[ ]
Genset 3	[ ]
Genset 4	[ ]

Part 2 Local Capacity Nomination

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)
Power Station

Part 3 Transmission Entry Capacity

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

Power Station [ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial	TEC (LR)	£/MW	TEC (SR)	£/MW/hr	TOTAL

Year	MW		MW		CHARGE

Part ~~3~~4 BM Units comprising Power Station

T_BMU 1	(Associated with Genset 1)
T_BMU 2	(Associated with Genset 2)
T_BMU 3	(Associated with Genset 3)
T_BMU 4	(Associated with Genset 4)
T_BMU SD-1	(Station Demand)
T_BMU AD-1	(Additional Trading Site Demand)

APPENDIX C (Interconnector Owners)

CONNECTION ENTRY CAPACITY AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

Company:

Connection Site:

Part 1 Connection Entry Capacity

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Interconnector	[ ]

Part 2 Local Capacity Nomination

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)	
Interconnector	

Part 3 Transmission Entry Capacity

Transmission Entry Capacity (**TEC**) expressed in average MW taken over a half hour settlement period

Interconnector	[ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial Year	TEC (LR) MW	£/MW	TEC (SR) MW	£/MW/hr	TOTAL CHARGE

Part ~~3~~4 BM Units comprising Interconnector

All BMU's starting with an identifier [I_FRA for example]. No need to list all individual BMU's

Part 45 Figure for the Purposes of CUSC Paragraph 9.6

APPENDIX D

TEC FINAL SUMS AND SECURITY PERIODS

APPENDIX FI

SITE SPECIFIC TECHNICAL CONDITIONS:

AGREED BALANCING SERVICES

APPENDIX F2

[NOT USED]

APPENDIX F3

SITE SPECIFIC TECHNICAL CONDITIONS:

SPECIAL AUTOMATIC FACILITIES

APPENDIX F4

SITE SPECIFIC TECHNICAL CONDITIONS:

PROTECTION AND CONTROL RELAY SETTINGS

FAULT CLEARANCE TIMES

APPENDIX F5

SITE SPECIFIC TECHNICAL CONDITIONS:

LOAD SHEDDING FREQUENCY SENSITIVE RELAYS

END OF SCHEDULE 2 - EXHIBIT 1

SCHEDULE 2 - EXHIBIT 2

DATED [ ]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

BILATERAL EMBEDDED GENERATION AGREEMENT

[USE OF SYSTEM FOR AN EMBEDDED POWER STATION]

[USE OF SYSTEM FOR A SMALL POWER STATION TRADING PARTY]

[DISTRIBUTION INTERCONNECTOR OWNER]

At [ ]

Reference: [ ]

CONTENTS

Appendix F3 **Site Specific Technical Conditions - Special Automatic Facilities**

Appendix F4 **Site Specific Technical Conditions Protection and Control Relay Settings, Fault Clearance Times**

Appendix F5 **Site Specific Technical Conditions - Other**

THIS **BILATERAL EMBEDDED GENERATION AGREEMENT** is made on the [ ] day of [ ] 200[ ].

BETWEEN

(1) National Grid Electricity Transmission plc a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns).

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** is required to prepare a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for use of the **GB Transmission System** and pursuant to the **Transmission Licence The Company** is required to offer terms for use of system.

(C) The **User** has applied for use of the **GB Transmission System** in the capacity of [ ] as set out in Paragraph 1.2.4 of the **CUSC**.

(D) As at the date hereof, **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties). This **Bilateral Embedded Generation Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section ~~9~~**11** of the **CUSC** have the same meanings, interpretations or constructions in this **Bilateral Embedded Generation Agreement**. [and the following terms and expressions shall have the meaning set out below:-

["**Circuit [ ]**" [insert detailed description of circuit(s) affected by the design variation] *(power station with **Design Variation** only)*;]

["**Outage Conditions [ ]**" the unavailability of **Circuit [ ]** as a result of

(a) a [planned]/ [unplanned]/ [planned or unplanned] incident occurring directly on **Circuit [ ]**; or

(b) **Circuit [ ]** requiring to be **Deenergised** for health and safety reasons to allow for the planned or unplanned availability of a circuit in the immediate vicinity of **Circuit [ ]** *(power station with **Design Variation** only);*]

["**Outage Period**" the period of time during which the **Outage Conditions** and/or reduced circuit capability apply *(power station with **Design Variation** only).*]]

["**Notification of Circuit Restrictions**" means the notification issued by **The Company** to the **User** in accordance with Clause [9.2] of this **Bilateral Embedded Generation Agreement**; *(power station with **Design Variation** only)*]

["**Notification of Outage Conditions**" means the notification issued by **The Company** to the **User** in accordance with Clause [9.4] of this **Bilateral Embedded Generation Agreement**; *(power station with **Design Variation** only)*]

["**Notification of Restrictions on Availability**" means a **Notification of Outage Conditions** and\or a **Notification of Circuit Restrictions** as applicable; *(power station with **Design Variation** only)*]

["**Relevant Circuits**" means [**Circuit [ ]**]; *(power station with **Design Variation** only)]*

["**Transmission Related Agreement**" means the agreement of even date entered into between the parties for the provision of and payment for **Balancing Services** in respect of **Bid-Offer Acceptances**; *(power station with **Design Variation** only)]*

2. COMMENCEMENT

This **Bilateral Embedded Generation Agreement** shall commence on [ ].

3. THE SITE OF CONNECTION TO THE DISTRIBUTION SYSTEM AND NODES

The **[**site of **Connection/Node]** of the **Embedded Power Station** [**Distribution Interconnector]** to the **Distribution System** to which **the Use of System rights granted pursuant to** this **Bilateral Embedded Generation Agreement** relates is more particularly described in Appendix A.

[The sites of **Connection** of the **Embedded Power Stations** [**Distribution Interconnector**] to the relevant **Distribution Systems** to which this **Bilateral Embedded Generation Agreement** relates are more particularly described in Appendix A.]

4. CHARGING DATE

The date from which **Use of System Charges** shall be payable by the **User** (including **One-Off Charges** where applicable) shall be **the Charging Date**].

5. USE OF SYSTEM

5.1 The right to use the **GB Transmission System** **at the Node** by means of the access products (other than **Transmission Entry Capacity**) in **CUSC** Section 3, Appendix 3, up to the **User's Local Capacity Nomination** shall commence on and **Use of System Charges** shall be payable by the **User** in respect of these from the date hereof.

5.2 The right to use the **GB Transmission System** by means of **Transmission Entry Capacity** shall only apply where such right has been allocated to the **User** under the **Long Term Access Auction** or acquired by **TEC Trade** and shall commence on and continue for the duration of the **TEC Period**.

5.3 **Transmission Network Use of System Charges** and **Balancing Services Use of System Charges** in respect of the **TEC (LR) MW** and **TEC (SR) MW** respectively.

6. CREDIT REQUIREMENTS

The amount (if any) to be secured by the **User** in respect of **TEC Final Sums** in accordance with **CUSC** Schedule 4 and the relevant **TEC Security Period(s)** are set out in Appendix E.

7. LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY

5.3.1 The **Local Capacity Nomination and Transmission Entry Capacity and TEC Period** ~~of [~~**at** each ~~of the] site[s] of **Connection**~~**Node** is [are] and the[ir] value[s] for the purposes of Paragraph 3.2 of the **CUSC** are specified in Appendix C.

5.3.2 Appendix C Part 3 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **Connection Site** under the **Balancing and Settlement**

Code. The **User** will provide **The Company** with the information needed to complete details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Local Capacity Nomination** and **The Company** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **The Company** prior to any alteration in **the BM Unit Identifiers** and **The Company** shall prepare and issue a revised Appendix C incorporating this information.

5.3.3 **The Company** shall monitor the **Users** compliance with its obligation relating to ~~**Transmission Entry Capacity**~~**Local Capacity Nomination in relation to the [site of Connection]** against the sum of metered volumes of the **BM Units** set out in Part 3 of Appendix C and submitted by the **User** for each **Settlement Period**.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The site specific technical conditions applying to [each of] the site[s] of **Connection** are set out in Appendices F1 to F5 to this **Bilateral Embedded Generation Agreement** as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

9. [RESTRICTIONS ON AVAILABILITY *(power stations with Design Variation only)*

9.1 The design of the connection of the **Distribution System** (to which the **User** is to connect) to the **GB Transmission System** is when studied under Chapter 2 of the **GB SQSS** a variation to the connection design as provided for in that chapter. It is a condition of the **GB SQSS** that any variation to the connection design satisfies the criteria set out in paragraphs 2.15 to 2.18 (inclusive) of the **GB SQSS** and on that basis the following provisions shall apply.

9.2 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of the **Outage Conditions** and where practicable the expected **Outage Period**. Such notice shall be issued:

9.2.1 In the event that the **Notification of Circuit Outage** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, in accordance with **Grid Code** OC2 requirements; or

9.2.2 In the event that the **Notification of Circuit Outage** relates to something other than a **Planned Outage** on the **GB Transmission System** or it relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** 0C2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the method of such notification.

9.2.4 **The Company** shall promptly notify the **User** when the **Outage Period** will or has ceased.

9.3 **The Company** shall be entitled to revise the **Notification of Circuit Outage** given under Clause 9.2 above at any time.

9.4 The **User** will acknowledge receipt of such **Notification of Circuit Outage** and where practicable shall revise its **Output Useable** forecast for the affected **BM Unit** accordingly.

9.5 Following such **Notification of Circuit Outage** in accordance with Clause 9.2:

9.5.1 [(i) In respect of the **Outage Conditions [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the outage of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the outage of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

9.5.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

9.6 **The Company** shall issue to the **User** a notice that advises the **User** of the occurrence of an event leading to a reduced circuit capability of **Circuit [ ]** and where practicable the expected **Outage Period**. Such notice (including any revision) shall be issued:

9.6.1 In the event that the **Notification of Circuit Restriction** relates to a **Planned Outage** on the **GB Transmission System**, where practicable, in accordance with **Grid Code** OC2 requirements; or

9.6.2 In the event that the **Notification of Circuit Restriction** relates to something other than a **Planned Outage** on the **GB Transmission System** or relates to a **Planned Outage** on the **GB Transmission System** but it is not practicable for such notice to be in accordance with **Grid Code** OC2 requirements, as soon as reasonably practicable and **The Company** and the **User** shall agree as soon as practicable after the date hereof the means of such notification.

9.6.3 **The Company** shall promptly notify the **User** when the period of reduced circuit capability will or has ceased.

9.7 **The Company** shall be entitled to revise the **Notification of Circuit Restriction** given under Clause 9.6 above at any time.

9.8 Following such **Notification of Circuit Restriction** in accordance with Clause 9.6:

9.8.1 [(i) In respect of the reduction in capability of **Circuit [ ]**, the **User** shall (i) ensure that the **Maximum Export Limit** and **Maximum Import Limit** for the **BM Units** relating to the **Power Station** reflects the reduction in capability of the **Relevant Circuits** and (ii) operate its **Power Station** to reflect the reduction in capability of the **Relevant Circuits** for all **Settlement Periods** or parts thereof falling within the **Outage Period**.]

9.8.2 In the event that the **User** does not comply with Clauses [ ] above, **The Company** shall issue **Bid-Offer Acceptances** to the **User** to reduce the export from and/or import to the affected **BM Unit** so that the effect is as if the **User** had complied with the relevant Clause, and the provisions of the **Transmission Related Agreement** shall apply.

9.9 Where the **User** becomes aware or is notified by **The Company** of any breach of Clause 9.5 or Clause 9.8 above the **User** shall forthwith take all reasonable steps to comply with the provisions of that Clause.

9.10 Where the **User** breaches in whole or in part the provisions of Clause 9.5 or Clause 9.8 above, the **User** shall at **The Company's** request explain to **The Company's** satisfaction (acting reasonably) the reason for the breach and demonstrate to **The Company's** satisfaction that appropriate steps have been taken to ensure that such breach will not reoccur. In the event that the **User** does not do this **The Company** may give notice to the **User** reducing the **Local Capacity Nomination** of the **Connection Site** and Appendix C of this **Bilateral Embedded Generation Agreement** shall be varied accordingly. This **Local Capacity Nomination** shall apply until such time as the **User** has explained to **The Company's** reasonable satisfaction the reason for the breach and has demonstrated that appropriate steps have been taken to ensure that such breach will not reoccur and Appendix C shall be automatically amended thereafter to reflect the reinstatement of the **Local Capacity Nomination**.

9.11 If within 3 months of a breach of Clause 9.5 or Clause 9.8 above which entitled **The Company** to take action under Clause 9.10 above, the **User** has still failed to provide the explanation and\or demonstration required by **The Company** under Clause 9.10 then **The Company** may treat such breach as an **Event of Default** for the purposes of Section 5 of the **CUSC** and following such breach may give notice of termination to the **User** whereupon this **Bilateral Embedded Generation Agreement** shall terminate and the provisions of **CUSC** Paragraph 5.4.7 shall apply.

9.12 For the avoidance of doubt any **Deenergisation** resulting from the **Outage Conditions** as set out in the relevant **Notification of Restrictions on Availability** constitutes an **Allowed Interruption**.

9.13.1 **The Company** and the **User** shall act in accordance with **Good Industry Practice** to minimise so far as reasonably practicable the occurrence and duration of (i) the **Outage Conditions and (ii) an Event leading to reduced circuit capability of the relevant circuits**. **The Company** and the **User** will, recognising the effect of the **Outage Conditions** and the reduced circuit capability on the **User's** operations, coordinate the **Outage Conditions** and the reduced circuit capability on the **GB Transmission System** (where they occur as a result of a Planned Outage) and the **User's Plant** and **Apparatus** in accordance with **Good Industry Practice** and to the extent practicable. **Company** and the **User** acknowledge however that even where **Planned Outages** are coordinated and agreed that **The Company** and\or the **User** may need to cancel or change such **Planned Outage**.

9.13.2 **The Company** and the **User** hereby acknowledge and agree that, where practicable, alternative operating arrangements shall be implemented to minimise the effect of **Outage Conditions** [, including, but not limited to [describe potential arrangements]]. In the event that **The Company** and the **User** implement alternative operating arrangements in respect of an **Outage Condition**, the provisions of Clause 9.5 and Clause 9.8 shall not apply to the extent that the alternative operating arrangements mitigate the restrictions (whether in whole or in part) that would otherwise apply to the **User** under this Clause 9 for all **Settlement Periods** or parts thereof falling within the **Outage Period**.

9.14 In the event that the **GB Transmission System** conditions subsequently change such that the conditions required for a design variation under the **GB SQSS** are no longer met then **The Company** shall be entitled to revise Clause 1, this Clause 9 and the **Outage Conditions** as necessary to ensure that such **GB SQSS** conditions continue to be met.]

10. TERM

Subject to the provisions for earlier termination set out in the **CUSC**, this **Bilateral Embedded Generation Agreement** shall continue until all of the **User's** equipment [or **Equipment** for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**] is **Disconnected** from the relevant **Distribution System** at the site[s] of **Connection** as provided in Section 5 of the **CUSC**.

11. VARIATIONS

11.1 Subject to 11.2 and 11.3 and 11.4, no variation to this **Bilateral Embedded Generation Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

11.2 **The Company** and the **User** shall effect any amendment required to be made to this **Bilateral Embedded Generation Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence,** an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

11.3 **The Company** has the right to vary Appendix B and C in accordance with this **Bilateral Embedded Generation Agreement** and the **CUSC** including any variation necessary to enable **The Company** to charge in accordance with the **Charging Statements** or upon any change to the **Charging Statements**.

11.4 **The Company** has the right to vary Appendix C at each **Auction Closure Date** as necessary to record any **Transmission Entry Capacity** and the **TEC Period** and £/MW figure as allocated to the **User** under the **Long Term Access Auction** and Appendix D to record any **TEC Final Sums**.

12. GENERAL PROVISIONS

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Embedded Generation Agreement** *mutatis mutandis*.

13. TEC FINAL SUMS AND TEC CANCELLATION CHARGE

In the event of termination of this **Bilateral Connection Agreement** the **User** shall be liable to pay **The Company** the **TEC Final Sums** and **TEC Cancellation Charge** (if any) due in accordance with **CUSC** Schedule 4, payment in each case to be made within [14 days] of the date of **The Company's** invoice in respect of the same.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission plc)

SIGNED BY)

[name])
for and on behalf of)
[User])

APPENDIX A

THE SITE OF CONNECTION / NODE

1. SITE[s] OF CONNECTION

Company :

Site[s] of Connection :

Node :

Owner[s] / Operator[s] of Distribution System:

APPENDIX B

CHARGES AND PAYMENT

Company :

Site of Connection:

1. PART 1: ONE-OFF CHARGES

2. PART 2: MISCELLANEOUS CHARGE(S)

APPENDIX C

LOCAL CAPACITY NOMINATION AND TRANSMISSION ENTRY CAPACITY AND TEC PERIOD

Part 1 Local Capacity Nomination (LCN)

Local Capacity Nomination (LCN) expressed in average MW figure for the [Power Station] taken over a half hour settlement period.

LCN (MW)
Power Station

Part 2 Transmission Entry Capacity

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

Power Station [ ]

TEC Period: [x] whole **Financial Years** from and including the **Financial Year** commencing on [ ] and ending on [ ].

Financial Year	TEC (LR) MW	£/MW	TEC (SR) MW	£/MW/hr	TOTAL CHARGE

Part ~~2~~3 BM Units comprising Power Station

E_BMU 1 (Associated with Genset 1)
E_BMU 2 (Associated with Genset 2)
E_BMU 3 (Associated with Genset 3)
E_BMU 4 (Associated with Genset 4)
E_BMU SD-1 (Station Demand) if applicable
E_BMU AD-1 (Additional Trading Site Demand) if applicable

APPENDIX FI

SITE SPECIFIC TECHNICAL CONDITIONS:

AGREED BALANCING SERVICES

APPENDIX F2

[NOT USED]

APPENDIX F2

SITE SPECIFIC TECHNICAL CONDITIONS:

SPECIAL AUTOMATIC FACILITIES

APPENDIX F3

SITE SPECIFIC TECHNICAL CONDITIONS: PROTECTION AND CONTROL RELAY SETTINGS FAULT CLEARANCE TIMES

APPENDIX F4

SITE SPECIFIC TECHNICAL CONDITIONS:

OTHER

END OF SCHEDULE 2 - EXHIBIT 2

SCHEDULE 2 EXHIBIT 3 PART [x]

INDICATIVE

DATED [ ] 200[1]

NATIONAL GRID ELECTRICITY TRANSMISSION PLC (1)

and

[ ] (2)

THE CONNECTION AND USE OF SYSTEM CODE

CONSTRUCTION AGREEMENT

Proforma for Power Station Directly Connected to the GB Transmission System and Embedded Power Stations which are the subject of a BEGA

CONTENTS

Appendix N Third Party Works

THIS CONSTRUCTION AGREEMENT is made on the [ ] day of [ ] 200[1]

BETWEEN

(1) National Grid Electricity Transmission plc a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH ("**The Company**", which expression shall include its successors and/or permitted assigns); and

(2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

WHEREAS

(A) Pursuant to the **Transmission Licence**, **The Company** has prepared a Connection and Use of System Code **(CUSC)** setting out the terms of the arrangements for connection to and use of the **GB Transmission System** and the provision of certain **Balancing Services**.

(B) The **User** has applied for [connection to] [and use of] [modification to its connection to] [or use of] the **GB Transmission System** and pursuant to Standard Condition C8 of the **Transmission Licence**, **The Company** is required to offer terms in accordance with the **CUSC** in this respect **or** [specific recital to reflect that the **Construction Agreement** is an amendment of an existing signed offer pursuant to the **CUSC** amending documents]

(C) **The Company** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties).

(D) Certain works are required as part of this offer as set out in this **Construction Agreement.** These works are required for the purposes of the **Local Capacity Nomination**.

(E) This **Construction Agreement** is entered into pursuant to the terms of the **CUSC**.

NOW IT IS HEREBY AGREED as follows:

1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION

1.1 Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** and in the Bilateral Connection Agreement have the same meanings, interpretations or constructions in this **Construction Agreement**.

“Bilateral Connection Agreement”	the **Bilateral Connection Agreement** entered into between the parties on even date herewith.
“Backstop Date”	the date specified as such in the **Construction Programme**.
"Bilateral Embedded Generation Agreement"	the **Bilateral Embedded Generation Agreement** entered into between the parties on even date herewith.
“Capacity Reduction Charge”	the sum calculated in accordance with the **User Commitment Principles** payable by the **User** under Clause 2.17 and Clause 7 in respect of a reduction in **LCN** prior to the **Completion Date**.
"Charging Date"	the date upon which the **Construction Works** are first **Commissioned** and available for use by the **User** or if the **Independent Engineer** before, on or after the **Commissioning Programme Commencement Date** shall have certified in writing that the **Transmission Connection Assets**, are completed to a stage where **The Company** could commence commissioning and by such date the **User’s Works** shall not have been so certified then the date falling **[ ]** days after the date of such certification, provided that the **LCN Transmission Reinforcement Works** are **Commissioned** and **Seven Year Statement Works** are completed as at that date. In the event that the **LCN Transmission Reinforcement Works** are not so **Commissioned** and/or the **Seven Year Statement Works** are not so completed the **Charging Date** shall be the date on which they are **Commissioned** and/or completed as appropriate.
“Commissioning Programme Commencement Date”	the date specified in the **Construction Programme** for the commencement of the **Commissioning Programme** or any substituted date fixed under the terms of this **Construction Agreement**

“Commissioning Programme”	the sequence of operations/tests necessary to connect the **User’s Works** and the **Transmission Connection Asset Works/LCN Transmission Reinforcement Works** to the **GB Transmission System** for the purpose of making the **User's Works** available for operation to be determined pursuant to Clause 2.10 of this **Construction Agreement**.
“Completion Date”	[ ] or such other date as may be agreed in terms of this **Construction Agreement**.
“Connected Planning Data”	data required pursuant to the **Planning Code** which replaces data containing estimated values assumed for planning purposes by validated actual values and updated estimates for the future and by updated forecasts for forecast data items.
“Consents”	in relation to any **Works**:- (a) all such planning and other statutory consents; and (b) all wayleaves, easements, rights over or interests in land or any other consent; or (c) permission of any kind as shall be necessary for the construction of the **Works** and for commencement and carrying on of any activity proposed to be undertaken at or from such **Works** when completed.
“Construction Programme”	the agreed programme for the **Works** to be carried out by **The Company** and the **User** set out in detail in Appendix [J] to this **Construction Agreement** or as amended from time to time pursuant to Clauses 2.3 and 3.2 of this **Construction Agreement**.
"Construction Site"	the site where the **Transmission Connection Asset Works** are being undertaken by or on behalf of **The**

	Company;
“Construction Works”	the **Transmission Connection Asset Works**, **LCN Transmission Reinforcement Works**, **Seven Year Statement Works** and **One Off Works** and such additional works as are required in order to comply with any relevant **Consents** relating to any such works but excluding for the avoidance of doubt any **Third Party Works**.
"Dispute Resolution Procedure”	the procedure for referral to arbitration set out in Paragraph 7.4 of the **CUSC**.
“Event of Default”	any of the events set out in Clause 10 of this **Construction Agreement** as constituting an event of default.
“Independent Engineer”	the engineer specified in Appendix L to this **Construction Agreement.** Provided that:- (a) where the parties fail to agree on a suitable engineer within 120 days of the date of this **Construction Agreement**; or (b) where any **Independent Engineer** appointed from time to time shall fail, refuse or cease to act in the capacity set out herein and no substitute engineer of suitable standing and qualification can be agreed by the parties within 30 days; then such engineer as the President of the Institution of Engineering and Technology shall, on the application of either party, nominate shall be the **Independent Engineer**.
“Late Delivery Arrangements”	the arrangements as set out in the **SO Long Term Release Methodology**, to apply in the event that the circumstances provided for in Clause 4.5 arise.
“Liquidated Damages”	the sums specified in or calculated pursuant to Appendix K to this

Construction Agreement.

"LCN Final Sums" the amount payable by the **User** on termination of this **Construction Agreement** being the aggregate from time to time and for the time being of:-

(1) all **The Company Engineering Charges** arisen prior to the date of termination;

(2) fees, expenses and costs (excluding costs on account of interest charges incurred by **The Company**) of whatever nature reasonably and properly incurred or due by **The Company** in respect of any part of the **Construction Works** carried out prior to the date of termination of this **Construction Agreement**;

(3) fees, expenses and costs properly payable by **The Company** in respect of, or arising from the termination by it or any third party of any contract for or relating to the carrying out of any **Construction Works** provided it is negotiated on an arms length basis (including any such arising under the **STC**);

(4) fees, expenses and costs due in accordance with Clause 2.4.1;

(5) a sum equal to the reasonable costs of removing any **Transmission Connection Assets** and of making good the remaining **Plant** and **Apparatus** following such removal; and

(6) interest on any such amounts from the date they were paid by **The Company** to the date of **The Company's** invoice at 2% over **Base Rate** from time to time and for the time being.

	Any dispute as to the amount of **LCN Final Sums** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.
"LCN Transmission Reinforcement Works"	those works other than the **Transmission Connection Asset Works**, **Seven Year Statement Works** and **One Off Works**, which in the reasonable opinion of **The Company** are necessary to extend or reinforce the **GB Transmission System** in relation to and prior to the operation of the **User's Equipment** at the **Connection Site** for the purposes of its **Local Capacity Nomination** and which are specified in Appendix H to this **Construction Agreement**.
"Notice of Intent"	the notice issued by **The Company** pursuant to Clause 7.4.4
"Notice of Reduction"	the notice issued by **The Company** pursuant to Clause 7.4.7 including a revised Appendix C specifying the revised **Local Capacity Nomination**.
"One Off Works"	the works described in Appendix B1 to this **Construction Agreement**.
"Preliminary Request"	the request issued by **The Company** pursuant to Clause 7.4.1.
"Reduction Fee"	the fee payable by the **User** to **The Company** in respect of the agreement to vary issued pursuant to Clause 7.4.9 such fee being calculated on the same basis as that set out in the **Charging Statements** as payable on a payment of actual costs basis in respect of a **Modification Application**.
"Term"	the term of this **Construction Agreement** commencing on the date hereof and ending in accordance with Clause 12.

“Third Party Works”	the works to be undertaken on assets belonging to a party other than **The Company** and the **User** to enable it to provide or as a consequence of the connection to and\or use of the **GB Transmission System** by the **User** as specified in Appendix N.
"Transmission Connection Assets"	the assets specified in Appendix A to the **Bilateral Connection Agreement**.
“Transmission Connection Asset Works”	the works necessary for construction and installation of the **Transmission Connection Assets** at the **Connection Site** specified in Appendix G to this **Construction Agreement**.
“User Commitment Principles”	the methodology relating to the application and calculation of the **Pre Commissioning Cancellation Charge** and **Capacity Reduction Charge** set out in **CUSC** Schedule 4 as it may be amended from time to time.
“User’s Works”	those works necessary for installation of the **User’s Equipment** which are specified in Appendix I to this **Construction Agreement**.
“Works”	the **Construction Works** and the **User’s Works**.

[1.2 The **User** does not wish to proceed on the basis of this **Construction Agreement** [or the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**] until the outcome of the **Long Term Access Auction** to be held in [ ] is known.

1.2.1 The rights and obligations of the **User** and **The Company** under this **Construction Agreement** (with the exception of those rights and obligations under or referred to in this clause 1.2) are therefore subject to (and neither party shall have any rights or obligations under any other provisions of this **Construction Agreement**) the **User** being allocated **Transmission Entry Capacity** under the **Long Term Access Auction** or the **User** otherwise confirming to **The Company** in writing within [5] **Business Days** of **Auction Closure Date** that it wishes this **Construction Agreement** [and the **Bilateral Connection Agreement** or **Embedded Generation Agreement**] to become effective notwithstanding that it has not been allocated any **Transmission Entry Capacity**.

1.2.2 In the event that the **User** is not allocated **Transmission Entry Capacity** and does not confirm to **The Company** within the timescales in accordance with Clause 1.2.1 then **The Company** shall be entitled to terminate this **Construction Agreement** by notice in writing.]

2. CARRYING OUT OF THE WORKS

2.1 Forthwith following the date of this **Construction Agreement** (i) in respect of **Connection Sites** in England and Wales **The Company** and the **User** shall agree the **Safety Rules** and **Local Safety Instructions** to apply during the **Construction Programme** and **Commissioning Programme**; and (ii) in respect of **Connection Sites** in Scotland the **User** shall agree with the **Relevant Transmission Licensee** the **Safety Rules** and **Local Safety Instructions** to apply during the **Construction Programme** and **Commissioning Programme**. Failing agreement within three months of the date of this **Construction Agreement** the matter shall be referred to the **Independent Engineer** for determination in accordance with Clause 6 of the **Construction Agreement**.

2.2 Subject to Clauses 2.3 and 2.4 of this **Construction Agreement** forthwith following the date of this **Construction Agreement The Company** shall use its best endeavours to obtain in relation to the **Construction Works**, and the **User** shall use its best endeavours to obtain in relation to the **User's Works**, all **Consents**. Each shall give advice and assistance to the other to the extent reasonably required by the other in the furtherance of these obligations. Further, each party shall, so far as it is legally able to do so, grant to, in relation to **Connection Sites** in England and Wales, the other, or in relation to **Connection Sites** in Scotland, the **Relevant Transmission Licensee,** all such wayleaves, easements, servitude rights, rights over or interests (but not estates as regards land in England and Wales and not heritable or leasehold interests as regards land in Scotland) in land or any

other consents reasonably required by the other or the **Relevant Transmission Licensee** in order to enable the **Works** to be expeditiously completed and to enable that other to carry out its obligations to the other under this **Construction Agreement** and in all cases subject to such terms and conditions as are reasonable.

2.3 The following additional provisions shall apply in respect of the **Consents** and **Construction Works**:-

2.3.1 All dates specified in this **Construction Agreement** are subject to **The Company** obtaining **Consents** for the **Construction Works** in a form acceptable to it within the time required to carry out the **Construction Works** in accordance with the **Construction Programme**.

2.3.2 In the event of:-

(a) the **Consents** not being obtained by the required date; or

(b) the **Consents** being subject to conditions which affect the dates; or

(c) **The Company** wishing to amend the **Construction Works** to facilitate the granting of the **Consents**,

The Company shall be entitled to revise the **Construction Works** (and as a consequence Appendix A to the **Bilateral Connection Agreement**) and all dates specified in this **Construction Agreement** and the charges specified in Appendix B to the **Bilateral Connection Agreement**. For the avoidance of doubt such revisions shall be at **The Company's** absolute discretion and the consent of the **User** is not required.

2.3.3 The **User** shall be regularly updated by **The Company** in writing or by such other means as the parties may agree as to progress made by **The Company** from time to time in the obtaining of relevant **Consents** pursuant to its obligations under Clause 2.2 or 2.3 of this **Construction Agreement**.

2.4.1 The **User** shall be liable to pay to **The Company** as part of any **LCN Final Sums** due:-

(a) all **The Company 's Engineering Charges** accrued; and

(b) proper and reasonable out-of-pocket expenses incurred and/or paid or which **The Company** is legally bound to incur or pay

in seeking and obtaining the **Consents** the subject of Clause 2.2 of this **Construction Agreement** in respect of the **Construction Works**.

The **User** acknowledges these out of pocket ancillary expenses may include planning inquiries or appeals. **The Company** shall keep the **User** informed of the level of such charges and expenses being incurred.

2.4.2 Paragraphs 11.2.3 to 11.2.5 of the **CUSC** relating to **Consents** shall apply to the **Construction Agreement** as if set out here in full.

2.5 The **User** shall have the right to terminate this **Construction Agreement** at any time upon giving not less than 7 (seven) days notice in writing to **The Company**. Upon such termination the provisions of Clause 11 shall apply.

2.6 If the **User** fails to obtain all **Consents** for the **User's Works** having complied with the obligations in Clause 2.2 of this **Construction Agreement** the obligation on the **User** to complete the **User's Works** shall cease and the **User** may by written notice to **The Company** terminate this **Construction Agreement**. Upon such termination the provisions of Clause 11 shall apply.

2.7 Both parties shall be entitled to contract or sub-contract for the carrying out of their respective parts of the **Works** (which in the case of **The Company** shall include work carried out by a **Relevant Transmission Licensee** or its contractors or sub-contractors). The **User** or any contractor on its behalf shall be responsible for commencing and for carrying out the **User's Works** to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme** and **The Company** or any contractor on its behalf shall be responsible for commencing and carrying out the **Construction Works** to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme**.

2.8 The parties shall continuously liaise throughout the **Construction Programme** and **Commissioning Programme** and each shall provide to the other all information relating to its own **Works** reasonably necessary to assist the other in performance of that other's part of the **Works**, and shall use all reasonable endeavours to coordinate and integrate their respective part of the **Works**. There shall be on-site meetings between representatives of the parties at intervals to be agreed between the parties. Each party shall deliver to the other party a written report of progress during each calendar quarter within 7 days of the end of that quarter.

2.9 During the period of and at the times and otherwise as provided in the **Construction Programme** and the **Commissioning Programme The Company** shall allow the **User**, its employees, agents, suppliers, contractors and sub-contractors necessary access to the **Construction Site** and the **User** shall allow **The Company** or, in the case of **Connection Sites** in Scotland, the **Relevant Transmission Licensee** and in either case their employees, agents, suppliers, contractors and sub-contractors necessary access to its site to enable each to carry out the **Transmission Connection Asset Works** and **One Off Works** or **User's Works** but not so as to disrupt or delay the construction and completion of the other's **Works** on the said

sites or the operation of the other's **Plant** and **Apparatus** located thereon, such access to be in accordance with any reasonable regulations relating thereto made by the site owner or occupier.

2.10 Not later than six months prior to the **Commissioning Programme Commencement Date The Company** shall provide the **User** with a draft **Commissioning Programme** for the **Commissioning** of the **Transmission Connection Assets**, and the **User's Equipment**. The **User** shall, as quickly as practicable and in any event within three months of receipt thereof, determine whether or not to approve the proposed **Commissioning Programme** (which approval shall not be unreasonably withheld or delayed) and shall within such three month period either notify **The Company** of its approval or, in the event that the **User** reasonably withholds its approval, notify **The Company** of any changes or variations to the proposed commissioning programme recommended by the **User**. If **The Company** does not accept such changes or variations submitted by the **User** any dispute shall be referred to the **Independent Engineer** for determination. The **Commissioning Programme** agreed between the parties or determined by the **Independent Engineer** as the case may be shall be implemented by the parties and their sub-contractors in accordance with its terms.

2.11 If at any time prior to the **Completion Date** it is necessary for **The Company** or **The Company** in its reasonable discretion wishes to make any addition to or omission from or amendment to the **Transmission Connection Asset Works** and/or **LCN Transmission Reinforcement Works** and/or the **One Off Works** and/or the **Third Party Works The Company** shall notify the **User** in writing of such addition, omission or amendment and Appendices [B1 (One Off Works), G (**Transmission Connection Asset Works**) H (**LCN Transmission Reinforcement Works**) and N (**Third Party Works**)] to this **Construction Agreement** and Appendices [A (**Transmission Connection Assets**) and B (**Connection Charges** and **One Off Charges**)] to the associated **Bilateral Connection Agreement** shall be automatically amended to reflect the change.

2.12 [The **User** shall apply to the Secretary of State for the Department of Energy and Climate Change as part of its application under Section 36 of the Act for its generating station, for deemed planning permission in relation to the substation forming part of the **Transmission Connection Asset Works**. The **User** shall use its best endeavours to procure that the said deemed planning permission is so obtained. **The Company's** obligations under Clause 2.2 of this **Construction Agreement** shall not require it to obtain planning consent for the said substation unless and until the Secretary of State for the Department of Energy and Climate Change shall for whatever reason refuse to deem the grant of planning permission in respect of the same. The **User** shall liaise with **The Company** as to its construction and operational requirements and shall ensure that the said application meets **The Company's** requirements. **The Company** shall provide the **User** with all information reasonably required by it in relation to the application and the **User** shall ensure that all requirements of **The Company** are incorporated in the application for deemed planning consent.]

2.13 [The **LCN Transmission Reinforcement Works** are conditional on British Energy Generation Limited and/or Magnox Electric plc (as the case may be)granting approval to the carrying out of the **Construction Works** in terms of the Nuclear Site Licence Provisions Agreement being an agreement dated 30 March 1990 between **The Company** and Nuclear Electric plc (now called Magnox Electric plc) and an agreement dated 31 March 1996 between **The Company** and British Energy Generation Limited (and described as such). In the event of British Energy Generation Limited and/or Magnox Electric plc (as the case may be) not granting approval **The Company** shall be entitled to change the **Construction Works**, the **Construction Programme** and all dates specified in this **Construction Agreement**.]

2.14 [It is hereby agreed and declared for the purposes of the Construction (Design and Management) Regulations 2007 that the **User** is the only client in respect of the **User's Works** and **The Company** is the only client in respect of the **Construction Works** and each of the **User** and **The Company** shall accordingly discharge all the duties of clients under the said **Regulations**.]

2.15 [**The Company** and the **User** hereby agree and acknowledge that this **Construction Agreement** is not to be treated as a construction contract within the meaning of section 104 of the Housing Grants, Construction and Re-generation Act 1996 and sections 104 to 113 of the said Act shall have no application either to the **Construction** Works or the **User's Works** and the parties' rights and obligations with regard to matters of dispute resolution and payment procedures are as expressly set out herein.]

2.16 **Third Party Works**

2.16.1 The **User** shall be responsible for carrying out or procuring that the **Third Party Works** are carried out and shall carry them out or procure that they are carried out in accordance with the timescales specified in the **Construction Programme**. The **User** shall confirm to **The Company** or, where requested to do so by **The Company**, provide confirmation from the third party that the **Third Party Works** have been completed.

2.16.2 Given the nature of these works it may not be possible to fully identify the works required or the third parties they relate to at the date hereof. Where this is the case **The Company** shall, subject to 2.16.3 below, advise the **User** as soon as practicable and in any event by [ ] of the **Third Party Works** and shall be entitled to revise Appendix N and as a consequence the **Construction Programme** as necessary to reflect this.

2.16.3 Where **Third Party Works** are likely to be **Modifications** required to be made by another user(s) ("the "**First User(s)**") as a consequence of **Modifications** to the **GB Transmission System** to be undertaken by **The Company** under this **Construction Agreement** **The Company** shall as soon as practicable after the date hereof issue the notification to such **First User's** in accordance with **CUSC**

Paragraph 6.9.3.1. The **User** should note its obligations under **CUSC** Paragraph 6.10.3 in respect of the costs of any **Modifications** required by the **First User(s**).

2.16.4 In the event that the **Third Party Works** have not been completed by the date specified in the **Construction Programme** or, in **The Company's** reasonable opinion are unlikely to be completed by such date, **The Company** shall be entitled to revise the **Construction Programme** as necessary to reflect such delay and also, where **The Company** considers it necessary to do so, shall be entitled to revise the **Construction Works** (and as a consequence Appendices A and B to the **Bilateral Connection Agreement**). For the avoidance of doubt such revisions shall be at **The Company's** absolute discretion and the consent of the **User** is not required. Further, in the event that the **Third Party Works** have not been completed by [ ] **The Company** shall have the right to terminate this **Construction Agreement** upon giving notice in writing to the **User** and in this event the provisions of Clause 11 of this **Construction Agreement** shall apply.

2.17 If at anytime prior to the **Completion Date** the **User** makes a **Modification Application** to reduce it's **Local Capacity Nomination** then on acceptance by the **User** of the resulting **Modification Offer** the **User** shall forthwith be liable to pay to **The Company** the **Capacity Reduction Charge** such payment to be made within 14 days of the date of **The Company's** invoice in respect thereof.

3. DELAYS

3.1 If either party shall have reason to believe that it is being delayed or will be delayed in carrying out that party's **Works** for any reason (whether it is one entitling it to the fixing of a new date under Clause 3.2 of this **Construction Agreement** or not) it shall forthwith notify the other party in writing of the circumstances giving rise to the delay and of the extent of the actual and/or anticipated delay.

3.2 If prior to the **Completion Date** a party (in this Clause 3.2 "the **Affected Party**") shall be delayed in carrying out any of the **Affected Party's Works** (including their commissioning) by reason of any act, default or omission on the part of the other Party (in this Clause the "**Defaulting Party**") or the **Defaulting Party's** employees, agents, contractors or sub-contractors or by reason of an event of **Force Majeure**, the **Affected Party** shall be entitled to have such later date or dates fixed as the **Commissioning Programme Commencement Date** and/or (as the case may be) the **Completion Date** as may be fair and reasonable in the circumstances provided that it shall have notified the **Defaulting Party** in writing of such act, default or omission or event of **Force Majeure** within 28 days of it becoming aware of the occurrence giving rise to the delay together with an estimate of the proposed delay which it will cause the **Affected Party**. In the event of a dispute

between the parties over what is or are any fair and reasonable new date or dates to be fixed in the circumstances this shall be promptly referred to and determined by the **Independent Engineer**. Once the new date or dates are fixed the **Construction Programme** and/or **Commissioning Programme** shall be deemed automatically amended as appropriate.

4. COMMISSIONING PROGRAMME AND LIQUIDATED DAMAGES AND LATE DELIVERY ARRANGEMENTS

4.1 Each party shall give written notice to the other declaring its readiness to commence the **Commissioning Programme** when this is the case.

4.2 The **Commissioning Programme** shall commence forthwith once both parties have given written notice to the other under Clause 4.1.

4.3 The **Works** shall be deemed to have been **Commissioned** on the date that the **Independent Engineer** certifies in writing to that effect.

4.4 In the event that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme Commencement Date The Company** (if and to the extent that it is responsible for delayed commissioning beyond the **Commissioning Programme Commencement Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable to pay to the **User Liquidated Damages** for each day that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme Commencement Date**. It is declared and agreed that such **Liquidated Damages** shall cease to be payable in respect of any period after the date of actual commencement of the **Commissioning Programme**.

4.5 In the event that the actual date on which the **Construction Works** are **Commissioned** is later than the **Completion Date The Company** (if and to the extent that it is responsible for delayed completion beyond the **Completion Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable:

(a) to pay to the **User Liquidated Damages** for each day that the actual date on which the **Construction Works** are **Commissioned** is later than the **Completion Date**. It is hereby agreed and declared that such **Liquidated Damages** shall cease to be payable in respect of any period after completion of the **Construction Works**; and

(b) to take the steps with regard to the **Transmission Entry Capacity** (if any) allocated to the **User** under the **Long Term Access Auction** which it is unable to utilise as a result of the delayed completion of the

Construction Works beyond the **Completion Date** in the manner set out in the **Late Delivery Arrangements**.

4.6 **Liquidated Damages** payable under Clauses 4.4 and 4.5 of this **Construction Agreement** shall accumulate on a daily basis but shall be payable calendar monthly. On or before the 15th day of each month the party entitled to receive the payment of **Liquidated Damages** shall send to the other party a statement of the **Liquidated Damages** which have accrued due in the previous calendar month. The party receiving such statement shall in the absence of manifest error pay the **Liquidated Damages** shown on the statement within 28 days of the date upon which the statement is received.

4.7 The payment or allowance of **Liquidated Damages** and arrangements for the **Late Delivery Arrangements** pursuant to this Clause 4 shall be in full satisfaction of **The Company's** liability for failure to perform its obligations by the **Commissioning Programme Commencement Date** and/or the **Completion Date** as appropriate.

4.8 In the event that the **User** shall have failed, in circumstances not entitling it to the fixing of a new date as the **Commissioning Programme Commencement Date** pursuant to Clause 3.2, to complete the **User's Works** by the **Backstop Date** to a stage where the **User** is ready to commence the **Commissioning Programme**, **The Company** shall have the right to terminate this **Construction Agreement** upon giving notice in writing to the **User**. Upon such termination the provisions of Clause 11 shall apply. .

5. APPROVAL TO CONNECT/ENERGISE/BECOME OPERATIONAL

5.1 Not later than 4 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under CC 7.4.7 and 7.4.10 and likewise the **Site Common Drawings** required under CC 7.5.2 and 7.5.4 and, if necessary, **Gas Zone Diagrams** referred to in CC 7.4.9 and 7.4.12.

5.2 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under CC 7.4.8 and 7.4.11 and likewise the Site **Common Drawings** required under CC 7.5.3 and 7.5.5.

5.3 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties:-

5.3.1 each party shall submit to the other data within its possession needed to enable the completion of Appendices F3 and F4 to the **Bilateral Connection Agreement**; and

5.3.2 the **User** shall submit to **The Company** evidence satisfactory to **The Company** that the **User's Equipment** complies or will on completion of the **User's Works** comply with Clause 8 of this **Construction Agreement** and Paragraphs [1.3.3(b), 2.9 and 6.7] of the **CUSC**.

5.4 Not later than 8 weeks prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties each party shall submit to the other:

5.4.1 for the **Connection Site** information to enable preparation of **Site Responsibility Schedules** complying with the provisions of Appendix 1 to the **Connection Conditions** together with a list of managers who have been duly authorised by the **User** to sign such **Site Responsibility Schedules** on the **User's** behalf;

5.4.2 written confirmation as required under CC.5.2.1(g) that the list of **Safety Co-ordinators** are authorised and competent [and a list of persons appointed pursuant to **Grid Code** CC5.2(m)];

5.4.3 a list of the telephone numbers for the facsimile machines referred to in CC6.5.9.

5.5 If directly connected to the **GB Transmission System** not later than 3 months prior to the expected **Commissioning Programme Commencement Date** each party shall submit to the other a statement of readiness to complete the **Commissioning Programme** in respect of the **Works** and the statement submitted by the **User** shall in addition contain relevant **Connected Planning Data** and a report certifying to **The Company** that, to the best of the information, knowledge and belief of the **User**, all relevant **Connection Conditions** applicable to the **User** have been considered and complied with. If **The Company** considers that it is necessary, it will require this latter report to be prepared by the **Independent Engineer**. The report shall incorporate if requested by **The Company** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria specified in CC6.

5.6 If embedded not later than 3 months prior to the **Charging Date** or by such other time as may be agreed between the **Parties** the **User** shall submit to **The Company** a statement of readiness to use the **GB Transmission System** together with **Connected Planning Data** and a report certifying to **The Company** that, to the best of the information, knowledge and belief of the **User**:-

(i) all relevant **Connection Conditions** applicable to the **User** have been considered;

(ii) CC 6 insofar as it is applicable to the **User** has been complied with; and

(iii) the site-specific conditions set out in Appendices [F1, F3, F4] and [F5] to the **Bilateral Embedded Generation Agreement** have been complied with.

If **The Company** considers that it is necessary, it will require this report to be prepared by the **Independent Engineer**. The report shall incorporate if requested by **The Company** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria.

6. INDEPENDENT ENGINEER

The parties agree and shall procure that the **Independent Engineer** shall act as an expert and not as an arbitrator and shall decide those matters referred or reserved to him under this **Construction Agreement** by reference to **Good Industry Practice** using his skill, experience and knowledge and with regard to such other matters as the **Independent Engineer** in his sole discretion considers appropriate. All references to the **Independent Engineer** shall be made in writing by either party with notice to the other being given contemporaneously as soon as reasonably practicable and in any event within 14 days of the occurrence of the dispute to be referred to the **Independent Engineer**. The parties shall promptly supply the **Independent Engineer** with such documents and information as he may request when considering such question. The **Independent Engineer** shall use his best endeavours to give his decision upon the question before him as soon as possible following its referral to him. The parties shall share equally the fees and expenses of the **Independent Engineer**. The parties expressly acknowledge that submission of disputes for resolution by the **Independent Engineer** does not preclude subsequent submission of disputes for resolution by arbitration as provided for in the **Dispute Resolution Procedure**. Pending any such submission the parties shall treat the **Independent Engineer's** decision as final and binding.

7. BECOMING OPERATIONAL

7.1 If directly connected to the **GB Transmission System The Company** shall connect and **Energise** the **User's Equipment** at the **Connection Site** during the course of and in accordance with the **Commissioning Programme** and thereafter upon compliance by the **User** with the provisions of Clause 5 and provided (1) the **Construction Works** excluding the **Seven Year Statement Works** shall be **Commissioned** and (2) the **Seven Year Statement Works** and **Third Party Works** shall be completed **The Company** shall forthwith notify the **User** in writing that the **Connection Site** shall become **Operational** for the purposes of its **Local Capacity Nomination**.

7.2 If **Embedded** upon compliance by the **User** with the provisions of Clauses 5.1, 5.2 and 5.3 and subject, if **The Company** so requires, to the **LCN**

Transmission Reinforcement Works [and/or works for the **Modification**] being carried out and/or the [**New] Connection Site** being **Operational** (any or all as appropriate) **The Company** shall forthwith notify the **User** ("**Operational Notification**") in writing that it has the right to use the **GB Transmission System** for the purposes of its **Local Capacity Nomination**. It is an express condition of this **Construction Agreement** that in no circumstances, will the **User** use or operate the **User's Equipment** without receiving the **Operational Notification** from **The Company**.

7.3 Not Used

7.4 **Local Capacity Nomination Reduction**

7.4.1 If, at any time prior to the **Completion Date The Company** reasonably believes from data provided by the **User** to **The Company**, the reports provided by the **User** pursuant to Clause 2.8 and Clause 5 of this **Construction Agreement**, the commissioning process under the **Construction Agreement** or otherwise that the **User's Equipment** will be such that it will not be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall advise the **User** accordingly in writing setting out its reasons for this belief, the source of the information giving rise to the concern and seeking clarification from the **User**.

7.4.2 The **User** shall respond to **The Company** within 15 **Business Days** of the date of the **Preliminary Request** providing such information or data as is necessary to satisfy **The Company's** concerns set out in the **Preliminary Request** and making any amendments necessary to the report provided by the **User** pursuant to Clause 2.8 and / or data provided by the **User** to **The Company** to reflect this.

7.4.3 In the event that **The Company** is satisfied from the information provided in accordance with Clause 7.4.2 by the **User** that the **User's Equipment** will be such that it will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall notify the **User** accordingly.

7.4.4 In the event that the **User** does not respond to the **Preliminary Request** or, notwithstanding the **User's** response, **The Company** remains of the view that the **User's Equipment** will be such that it will not reasonably be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall inform the **User** in writing that it intends to amend Clause 7 and Appendix C to the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] to reflect the **Local Capacity Nomination** that it reasonably believes to be the level of power that the **User's Equipment** will be capable of exporting .

7.4.5 The **User** shall respond to the **Notice of Intent** within 15 **Business Days** of the date of the **Notice of Intent** explaining why it still reasonably believes that its **User's Equipment** will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination** or at more than the MW figure proposed by **The Company** in the **Notice of Intent** or providing a reasonable explanation as to why this is not the case.

7.4.6 In the event that **The Company** is satisfied from the information provided in accordance with Clause 7.4.5 by the **User** that the **User's Equipment** will be such that it will be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination The Company** shall notify the **User** accordingly.

7.4.7 Where notwithstanding the **User's** response to the **Notice of Intent The Company** remains of the view that the **User's Equipment** will be such that it will not reasonably be capable of exporting power onto the **GB Transmission System** at the level of the **Local Capacity Nomination** or at more than the MW figure proposed by **The Company** in the **Notice of Intent** or the **User** does not provide a response that is satisfactory to **The Company** within the timescale specified in 7.4.5 above **The Company** will issue the **Notice of Reduction** to the **User** and will send a copy of the same to the **Authority**.

7.4.8 Unless during such period the matter has been referred by the **User** to the **Authority** for determination by the **Authority** under the provisions of Standard Condition C9 Paragraph 4 of the **Transmission Licence**, the **Notice of Reduction** shall take effect on the day 15 **Business Days** after the date of the **Notice of Reduction** and Appendix C of the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] shall be amended on that date in the manner set out in the **Notice of Reduction**. Where the matter has been referred the amendments to Appendix C of the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**] and the date they take effect shall be as set out in the Authority's determination.

7.4.9 After a **Notice of Reduction** has taken effect **The Company** shall be entitled to make such amendments to this **Construction Agreement** as it requires as a result of the reduction in the **Local Capacity Nomination** effected by the **Notice of Reduction** and as a consequence to the [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**]. **The Company** shall advise the **User** as soon as practicable and in any event within 3 months of the date of the **Notice of Reduction** (or if the matter has been referred by the **User** to the **Authority** for determination, the date of determination) of such amendments by way of offer of an agreement to vary the **Construction Agreement** and [**Bilateral Connection Agreement**] [**Bilateral Embedded Generation Agreement**]. This

agreement to vary will also provide for payment by the **User** of the **Reduction Fee** where applicable. The parties acknowledge that any dispute regarding this variation shall be referable to and determined by the **Authority** under the provisions of Standard Condition C9 Paragraph 4 of the **Transmission Licence**.

7.4.10 On the date that the **Notice of Reduction** takes effect the **User** shall be liable to pay to **The Company** the **Capacity Reduction Charge** such payment to be made within 14 days of the date of **The Company's** invoice therefor.

8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The **User** shall ensure that on the **Completion Date** the **User's Equipment** complies with the site specific technical conditions set out in Appendix F 1-5 to the **Bilateral Connection Agreement**.

9. SECURITY REQUIREMENTS and LCN FINAL SUMS RECONCILIATION

9.1 Security

The **User** shall provide security to **The Company** in accordance with **CUSC** Schedule 4 in respect of the **User's** obligations to pay the **LCN Final Sums** to **The Company** on termination of this **Construction Agreement**.

9.2 LCN Final Sums Reconciliation

9.2.1 Within 60 days of the date of termination of this **Construction Agreement The Company** shall:

(a) furnish **the User** with a statement showing a revised estimate of **LCN Final Sums** and will provide as soon as practicable evidence of such costs having been incurred; and

(b) by written notice to **the User** inform **the User** of all capital items which cost **The Company** in excess of £10,000 and in relation to which an amount on account of **LCN Final Sums** shall have been paid and whether **The Company** (1) wishes to retain the said capital items or (2) dispose of them.

9.2.2 In respect of all capital items which **The Company** wishes to retain (other than those which have been, or are proposed to be installed as a replacement for **Transmission Plant** and **Transmission Apparatus**) **The Company** shall forthwith reimburse to the **User** the amount paid by the **User** on account of **LCN Final Sums** in respect of the said capital items (including without limitation the amount paid on

account of the design, purchase, installation and testing of the said capital item and also associated construction works and interest charges) together with interest calculated thereon on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time provided that in the event that **The Company** wishes to retain any capital item which has been installed but wishes to remove it to storage or to another site then it shall only reimburse to the **User** the cost of the capital item and not the costs of such installation and shall deduct from any reimbursement due to the **User** the costs of removal and/or storage.

9.2.3 In respect of all capital items which **The Company** wishes to dispose (other than those which have been, or are proposed to be installed as a replacement for **Transmission Plant** and **Transmission Apparatus**) it shall forthwith (and subject to **The Company** obtaining the consent of the **Authority** under Standard Condition B3 of the **Transmission Licence** if required and\or subject to any **Relevant Transmission Licensee** obtaining the consent of the **Authority** under Standard Condition B3 of its transmission licence) sell or procure the sale of the said capital item on an arms-length basis as soon as reasonably practicable. Forthwith upon receipt of the sale proceeds **The Company** shall pay to the **User** the proceeds received from any such sale together with interest thereon calculated on a daily basis from the date of termination to the date of payment at **Base Rate** for the time being and from time to time less any reasonable costs associated with the sale including the costs and expenses reasonably incurred and/or paid and/or which **The Company** is legally bound to pay on removing the capital item, any storage charges and any costs reasonably incurred by **The Company** in respect of reinstatement associated with removal of the capital item. **The Company** shall provide the **User** with reasonably sufficient evidence of all such costs and expenses having been incurred. If the **Authority** does not agree to the disposal of the capital item the capital item shall be retained by **The Company** and **The Company** shall reimburse the **User** the notional current market value in situ of the said capital item as between a willing buyer and a willing seller as agreed between the parties and failing agreement as determined by reference to arbitration in accordance with the **Dispute Resolution Procedure** together with interest thereon calculated on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time.

9.2.4 As soon as reasonably practicable after termination of this **Construction Agreement The Company** shall provide the **User** with a statement of and invoice for **LCN Final Sums** together with evidence of such costs having been incurred and/or paid and/or having been committed to be incurred. If the **LCN Final Sums** are greater than the payments made by the **User** in respect of **The Company's** estimate(s)

of **LCN Final Sums** the **User** shall within 28 days of the said statement and invoice prepared by **The Company** pay to **The Company** the additional payments due by the **User** together with interest calculated thereon on a daily basis at **Base Rate** for the time being and from time to time from the date of previous payment(s) sums equal to **The Company's** estimate of **LCN Final Sums** to the date of the statement of and invoice for **LCN Final Sums**.

If the **LCN Final Sums** is less than the payments made by the **User** in respect of **The Company's** estimate of **LCN Final Sums** paid by the **User** following termination of this **Construction Agreement The Company** shall forthwith pay to the **User** the excess paid together with interest on a daily basis at **Base Rate** for the time being and from time to time from the date of payment of the fair and reasonable estimate of **LCN Final Sums** to the date of reimbursement by **The Company** of the said excess paid.

10. EVENT OF DEFAULT

Alternate provisions apply depending whether or not the **User** does (10A) or does not (10B) meet **The Company's** required credit rating on signing this **Construction Agreement**.

10A. Event of Default

Any of the following events shall constitute an **Event of Default**:-

10A.1 If the **User** fails to provide or procure that there is provided to **The Company** within the requisite time any relevant security satisfactory to **The Company**, pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

10A.2 If having having provided security satisfactory to **The Company** pursuant to pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

(a) The **User** thereafter fails to provide or procure that there is provided to **The Company** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required by **CUSC** Schedule 4 Part Three or to revise or renew such security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required, or if the User shall otherwise be in breach of any of its obligations in respect of security under to this **Construction Agreement** and **CUSC** Schedule 4 Part Three**;**

(b) The **User** or any shareholder (whether direct or indirect) of the **User** or any other party who may at any time be providing security to **The Company** pursuant to the requirements of this **Construction**

Agreement and **CUSC** Schedule 4 Part Threetakes any action whether by way of proceedings or otherwise designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount so secured whether or not there shall be a dispute between the parties;

(c) Any party who may at any time be providing security to **The Company** pursuant to the provisions of this **Construction Agreement** and **CUSC** Schedule 4 Part Threefails to pay to **The Company** any sum demanded pursuant thereto.

10A.3 If

(i) There is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any sums due or to become due to **The Company** within the next following period of twelve (12) months in terms of or on termination of this **Construction Agreement**; or

(ii) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements)] put in place by the **User** in connection with a project for which security under this Clause 10A is required by **The Company** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal outstanding amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreemen**t) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in (i) or (ii) or (iii) the **User** fails, within a period of 7 (seven) days following the date on which **The Company** gives the **User** notice in writing of one or other of the above events occurring to provide **The Company** with such security as **The Company** shall require to cover the **User's** payment obligations to **The Company** arising in the event of or which have arisen prior to termination of this **Construction Agreement** and which arise under this **Construction Agreement**. The security to be provided shall be in a form satisfactory to **The Company** in accordance with this **Construction Agreement** and **CUSC** Schedule 4 Part Three.

Provided that (in relation to paragraphs (i) or (ii) or (iii) above) if at anytime after the putting in place of security under Clause 10A.3 the **User** shall produce to **The Company** evidence to **The Company's** reasonable satisfaction that there is not a substantial probability of the **User** not being able to make payment to **The Company** of such sums within the next following period of twelve (12) months, **The Company** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to require security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii), and/or (iii) subsequently occurring.

10A.4 Where any of the **Events of Default** in Paragraph 5.3.1of the **CUSC** have occurred and are occurring it shall be an **Event of Default** for the purposes of Clause 11 of this **Construction Agreement**.

10B **Event of Default**

10B.1 If

(i) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements) put in place by the **User** in connection with a project for which security under this Clause 10B is required by **The Company** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or

(ii) there is a material adverse change in the financial condition of the **User** such as to give **The Company** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any unsecured sum due or to become due to **The Company** within the next following period of 12 (twelve) months in terms of or on termination of this **Construction Agreement**;

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in either (i) or (ii) or (iii) the **User** fails:-

(1) within a period of 14 (fourteen) days following the date on which **The Company** gives notice of such circumstances to provide to **The Company** a cash deposit in a **Bank Account**, a **Performance Bond** or **Letter of Credit** in favour of **The Company** and **Valid** at least up to the last day of the **Financial Year** in which the event occurs for such amount representing **The Company's** reasonable estimate of all unsecured sums to become due to **The Company** in the period up to the end of the **Financial Year** in which the event occurs such sum to be specified in the said notice; or

(2) to subsequently provide such cash deposit or renew such **Performance Bond** or **Letter of Credit** (or such renewed **Performance Bond** or **Letter of Credit** provided under this paragraph) not less than 45 days prior to its stated expiry date for such amount representing **The Company's** reasonable estimate of the unsecured sums to become due to **The Company** in the next following **Financial Year** valid at least up to the last day of the next following **Financial Year** and to continue the provision of cash deposit a **Performance Bond** or **Letter of Credit** in a similar manner, to such estimate of unsecured sums.

Provided that regarding (i) or (ii) or (iii) if at any time after the putting in place of security under this Clause 10B.1 the **User** shall provide to **The Company** evidence to **The Company's** reasonable satisfaction that there is not a substantial probability of the **User** being unable to make payment to **The Company** of any unsecured sums within the next following period of twelve (12) months, **The Company** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **The Company's** right to return security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii) and/or (iii) in this Clause 10B.1 subsequently occurring.

10B.2 If the **User** fails to provide or procure that there is provided to **The Company** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required under this **Construction Agreement** and **CUSC** Schedule 4 Part Threeor to renew or revise such security or to substitute any security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required or if the **User** is otherwise in breach of any of its obligations under this **Construction Agreement** and **CUSC** Schedule 4 Part Three**.**

10B.3 If the **User** or any shareholder (whether direct of indirect) of the **User** takes any action whether by way of proceedings or otherwise designed or calculated to prevent restrict or interfere with the payment to **The Company** of any amount so secured or seeks or permits or assists others to do so, whether or not there shall be a dispute between the parties.

10B.4 If any party who may at any time be providing or holding security in favour of **The Company** in respect of this **Construction Agreement** pursuant to this **Construction Agreement** and **CUSC** Schedule 4 Part Three fails to pay **The Company** any sum demanded in any **Notice of Drawing** pursuant thereto.

10B.5 Where any of the **Events of Default** in Paragraph 5.3.1 of the **CUSC** have occurred and are occurring it shall be an **Event of Default** for the purposes of Clause 11 of this **Construction Agreement**.

10A.4/
10B.6 Once an **Event of Default** has occurred and is continuing **The Company** may give notice of termination to the **User** whereupon this **Construction Agreement** shall forthwith terminate and **The Company** shall disconnect all the **User's Equipment** at the **Connection Site** and the provisions of Clause 11 shall apply:

11. TERMINATION

11.1 On termination of this **Construction Agreement The Company** shall disconnect all the **User's Equipment** at the **Connection Site** and:

(a) the **User** shall remove any of the **User's Equipment** on, in relation to **Connection Sites** in England and Wales, **The Company's** or, in relation to **Connection Sites** in Scotland, **Relevant Transmission Licensee's** land within 6 months of the date of termination or such longer period as may be agreed between **The Company** or the **Relevant Transmission Licensee** (as appropriate) and the **User**; and

(b) in the case of **Connection Sites** in England and Wales, **The Company** shall remove and, in the case of **Connection Sites** in Scotland, **The Company** shall procure that the **Relevant Transmission Licensee** removes, any **Transmission Connection Assets** on the **User's** land within 6 months of the date of termination or such longer period as may be agreed between **The Company** or the **Relevant Transmission Licensee** (as appropriate) and the **User**.

11.3 The **User** shall where this **Construction Agreement** terminates prior to the [**Charging] [Completion Date]** be liable forthwith on the date this **Construction Agreement** so terminates to pay to **The Company**:-

(1) **LCN Final Sums** and on such termination shall be liable to pay a sum equal to **The Company**'s fair and reasonable estimate of **LCN Final Sums**,

such payments in each case to be made within 14 days of the date of **The Company's** invoice(s) in respect thereof and subject to adjustment in respect of **The Company's** estimate of **LCN Final Sums** in accordance with Clause 9.2.

12. TERM

12.1 Subject to the provisions for earlier termination set out in the **CUSC** this **Construction Agreement** shall continue until terminated in accordance with Clause 2.5, 2.6, 2.16, 4.8 or 10 hereof.

12.2 In addition this **Construction Agreement** shall terminate upon termination of the associated **Bilateral Connection Agreement** and in the event that this is prior to the **Charging Date** the provisions of Clause 11 shall apply.

12.3 The associated [**Bilateral Connection Agreement** or **Agreement to Vary** the **Bilateral Connection Agreement**] will automatically terminate upon termination of this **Construction Agreement** prior to the **Charging Date**.

12.4 Any provisions for payment shall survive termination of this **Construction Agreement**.

13. CUSC

The provisions of Sections 6.6 (Payment), 6.14 (Transfer and Subcontracting), 6.15 (Confidentiality), 6.18 (Intellectual Property), 6.19 (Force Majeure), 6.20 (Waiver), 6.21 (Notices), 6.22 (Third party Rights), 6.23 (Jurisdiction), 6.24 (Counterparts), 6.25 (Governing Law), 6.26 (Severance of Terms), 6.27 (Language) inclusive of the **CUSC** shall apply to this **Construction Agreement** as if set out in this **Construction Agreement**.

14. DISPUTES

Except as specifically provided for in this **Construction Agreement** any dispute arising under the terms of this **Construction Agreement** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.

15. VARIATIONS

15.1 Subject to Clause 15.2 and 15.3 below, no variation to this **Construction Agreement** shall be effective unless made in writing and signed by or on behalf of both **The Company** and the **User**.

15.2 **The Company** and the **User** shall effect any amendment required to be made to this **Construction Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **The Company** to

make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

15.3 **The Company** has the right to vary Appendices in accordance with Clauses 2.3, 2.11, 2.13, 2.16 and 7.4 and Paragraph 6.9 of the **CUSC**.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY)
[name])
for and on behalf of)
National Grid Electricity Transmission)
plc)

SIGNED BY)
[name])
for and on behalf of)
[User])

APPENDIX [B]
[Part 1]

ONE OFF WORKS

APPENDIX [G]

TRANSMISSION CONNECTION ASSET WORKS

APPENDIX [H]

LCN TRANSMISSION REINFORCEMENT WORKS

APPENDIX [I]
USER'S WORKS

APPENDIX [J]

CONSTRUCTION PROGRAMME

APPENDIX [K]

LIQUIDATED DAMAGES

Company:

Connection site:

Type:

The amount of Liquidated Damages payable by The Company to the User pursuant to this Construction Agreement shall be:

Liquidated Damages under Clause [4] of this Construction Agreement shall be calculated on a daily basis at a rate of £XXXXX per week subject to the limit that the total Liquidated Damages payable by The Company to the User under this Clause shall not exceed £XXXXX.

APPENDIX [L]

INDEPENDENT ENGINEER

Company:

Connection site:

Type:

The Independent Engineer will be a Member of the Association of Consulting Engineers (ACE) and shall be agreed between the parties within 120 days of execution of this Construction Agreement or such other period as may be agreed between the parties. Failing agreement it shall be referred to the President of the Institution of Electrical Engineers who shall nominate the Independent Engineer.

1.

APPENDIX [N]

THIRD PARTY WORKS

END OF SCHEDULE 2 EXHIBIT 3 PART [X]

SCHEDULE 4

USER COMMITMENT PRINCIPLES

Introduction

The purpose of this Schedule 4 is to specify the principles and set out the methodology used to calculate the **Cancellation Charge** and **Capacity Reduction Charge** payable by **Users** in the categories of **Power Stations** directly connected to the **GB Transmission System** who are parties to a **Bilateral Connection Agreement** with **The Company** and **Users** in the category of **Embedded Power Stations** who are parties to a **Bilateral Embedded Generation Agreement** with **The Company** and reference to **User** in this section shall be interpreted accordingly.

It also sets out in PART THREE and PART FOUR the requirements and arrangements for security in respect of **LCN Final Sums** and **TEC Final Sums** respectively.

For the avoidance of doubt this schedule does not apply to **Users** other than those described above.

PART ONE

1 CANCELLATION CHARGE

1.1 Where a **Construction Agreement** and/or a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** between a **User** and **The Company** is terminated such **User** shall be liable to pay to **The Company** the **Cancellation Charge**.

1.2 The **Cancellation Charge** to be payable in such circumstances and the level of security to be provided in respect of this shall be calculated in accordance with this Schedule 4 which also sets out the process for the types of security required.

1.3 The **Cancellation Charge** varies throughout the term of the **User's Construction Agreement** and **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**.

1.4 On termination of a **Construction Agreement** prior to the **Completion Date** (as defined in the relevant **Construction Agreement**) the **User** shall be liable for **LCN Final Sums**. The liabilities and levels of security required in respect of the **LCN Final Sums** shall be calculated in accordance with this Schedule 4 Paragraph 2 and detailed in that **User's Construction Agreement**.

1.5 Where a **User** has been allocated **Transmission Entry Capacity** under the **Long Term Access Auction** for a **TEC Period** in which there are **TEC (SR) MW** on termination of its **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** between allocation of the **Transmission Entry Capacity** and the **TEC Security Period End Date**. The liabilities and levels of security required in respect of the **TEC Final Sums** shall be calculated in accordance with this Schedule 4 Paragraph 2 and the **SO Long Term Release Methodology** and detailed in that **User's Bilateral Connection Agreement or Bilateral Embedded Generation Agreement**.

1.6 Where a **User** has been allocated **Transmission Entry Capacity** under the **Long Term Access Auction** for a **TEC Period**, on termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** the **User** shall be liable for the **TEC Cancellation Charge** as calculated in accordance with this Schedule 4 Paragraph 3.

1.7 Value Added Tax will be payable on any **Cancellation Charge**.

2 LCN FINAL SUMS

These are defined in the **User's Construction Agreement** and are intended to recover **The Company's** costs and expenses incurred in respect of the **Construction Works** in the event of termination of the **Construction Agreement** prior to the **Completion Date**. **The Company** provides estimates of the level of **LCN Final Sums** throughout the **Construction Programme** and the security requirements in respect of these are set out in Part Three.

3 TEC FINAL SUMS

3.1 This liability arises on termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**. These agreements will terminate as a consequence of termination of a **Construction Agreement** before the **Charging Date/Completion Date**.

3.2 The liability only arises where a **User** has been allocated **Transmission Entry Capacity** under the **Long Term Access Auction** and the **TEC Period** to which it relates provides **Transmission Entry Capacity** by reference to **TEC (SR) MW**. In such circumstances should the **Bilateral Construction Agreement** or **Bilateral Embedded Generation Agreement** be terminated by the **User** or **The Company** between allocation of **Transmission Entry Capacity** and the **TEC Security Period End Date** it shall be liable to pay the **TEC Final Sums** attributed to the **Cancellation Period** in which termination occurs.

3.3 **The Company** will identify the level and profile of **TEC Final Sums** and the **Cancellation Periods** in respect of these as part of the **Long Term Access Auction** and in accordance with the **SO Long Term Release Methodology**.

3.4 Depending on where in the **TEC Period** termination occurs and use by others of the **TEC (SR) MWs The Company** may in certain circumstances have an obligation to reimburse the **User** for a proportion of the **TEC Final Sums** as set out in the **SO Long Term Release Methodology**.

4 TEC Cancellation Charge

4.1 On termination of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** the **User** shall be liable to pay the wider component of **Transmission Network Use of System Charges** due and/or payable for any **TEC Period(s)** allocated to the **User** and in addition the local component of **Transmission Network Use of System Charges** due or payable to end of the **Financial Year** in which such termination occurs.

4.2 All such charges shall become immediately due and payable upon the termination of the relevant **Bilateral Connection Agreement** or **Bilateral Embedded Agreement**.

4.3 In calculating the **TEC Cancellation Charge** in circumstances where the **User** is also liable on termination for **TEC Final Sums** account shall be taken, in accordance with the **SO Long Term Release Methodology** and/or **Statement of the Use of System Charging Methodology**, in calculating that proportion of the **TEC Cancellation Charge** due by reference to **TEC (LR) MW** for the remainder of the **TEC Period** where the **User** has paid **TEC Final Sums**.

PART TWO

1. CAPACITY REDUCTION CHARGE

1.1 In the event that the **LCN** value in Appendix C of a **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** is reduced prior to the **Completion Date** by the **User** or as a result of a **Notice of Reduction** (as defined in the **Construction Agreement**), the **User** shall be liable to pay a charge calculated on the same basis as **LCN Final Sums** but assessed by reference to those elements of the **Construction Works** no longer required as a result of the reduction in **LCN**.

1.2 Following a reduction in **LCN** and after payment of the **Capacity Reduction Charge** **The Company** shall adjust the **LCN Final Sums** liabilities and associated security obligations to reflect the reduced **LCN**.

1.3 There is no **Capacity Reduction Charge** payable in respect of a reduction in **LCN** on or after the **Completion Date** for the **Construction Works**.

1.4 Valued added tax will be payable on any **Capacity Reduction Charge**.

1.5 There is no provision for a charge in respect of a reduction in **Transmission Entry Capacity**. A **User** remains liable for the level of **Transmission Entry Capacity** as allocated under the **Long Term Access Auction**. **Users** should note however the limitation in **CUSC** Section 3, Paragraph 3.2.3 regarding the export of power in excess of **LCN**.

PART THREE

LCN FINAL SUMS CREDIT REQUIREMENTS

1. Where a **User** has a **Construction Agreement** it shall provide security for **LCN Final Sums** in accordance with this Schedule 4 Part Three.

2. Each **User** which has a **Construction Agreement** shall provide security in respect of each of its **Construction Agreements**.

2.1 in the case of a **User** which meets **The Company Credit Rating** at the date of the **Construction Agreement** in accordance with Paragraph 3; and

2.2 in the case of a **User** which does not meet **The Company Credit Rating** at the date of the **Construction Agreement** or thereafter ceases to meet it, in accordance with Paragraph 4.

3. PROVISION OF SECURITY FOR LCN FINAL SUMS WHERE USER MEETS THE COMPANY CREDIT RATING

3.1 The **User** shall (a) as soon as possible after entering into a **Construction Agreement** and in any event no later than one (1) month after the date of the same or (b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** as soon as possible and in any event within 5 **Business Days** of the **Auction Closure Date** confirm to **The Company** whether it meets **The Company Credit Rating**. Thereafter not less than 75 days before the relevant **LCN Security Period** until 28 days after the **Completion Date** the **User** shall confirm to **The Company** whether it meets **The Company Credit Rating** (which in the case of a long term private credit rating shall be confirmed by Standard and Poor's or Moody's within a period of 45 days prior to the date of confirmation). The **User** shall inform **The Company** in writing forthwith if it becomes aware of no longer meeting **The Company Credit Rating** or if it is or is likely to be put on credit watch or any similar credit surveillance procedure which may give **The Company** reasonable cause to believe that the **User** may not be able to sustain meeting **The Company Credit Rating** for at least 6 months.

3.2 In the event that the **User** has elected to provide **The Company** with an indicative credit rating and **The Company** is of the reasonable opinion that the **User** has ceased to comply with the requirements of Paragraph 3.1 then **The Company** may require the **User** forthwith:

(i) to apply to Standard and Poor's and/or Moody's for a further indicative long term private credit rating; or

(ii) to confirm to **The Company** that it shall provide the security referred to in Paragraph 3.4 below.

3.3 In the event of the **User**:

(i) not meeting **The Company Credit Rating**; or

(ii) having a credit rating below **The Company Credit Rating**; or

(iii) not having obtained from Standard and Poor's or Moody's within 30 days of the written notification under Paragraph 3.2(i) above an indicative long term private credit rating,

or if **The Company** becomes aware that:

(iv) the **User** ceases to meet **The Company Credit Rating**; or

(v) the **User** is put on credit watch or other similar credit surveillance procedure as specified above which may give **The Company** reasonable cause to believe that the **User** may not be able to maintain **The Company Credit Rating** for at least 6 months; or

(vi) the **User** has not obtained from Standard and Poor's within 30 days of the written notification by **The Company** under Paragraph 3.2(i) above a further indicative long term private credit rating,

the **User** shall (where appropriate on receipt of written notification from **The Company**) comply with the terms of Paragraph 3.4.

3.4 The **User** shall within 21 days of the giving of a notice under Paragraph 3.3 or within 30 days of the **User** confirming to **The Company** under Paragraph 3.2(ii) that it will provide the security specified below (whichever is the earlier), provide **The Company** with the security specified below to cover the **User's** obligation to pay **LCN Final Sums** arising in the event of, or which have arisen prior to, termination of the **Construction Agreement**. The security to be provided shall be for an amount not greater than the **LCN Final Sums** payable on termination and specified in wring by **The Company** to the **User** from time to time.

3.5 The form of security provided shall be of a type set out in Paragraph 5.

3.6 Until the facts or circumstances giving rise to the obligations of the **User** to provide the security have ceased, then **The Company** provisions of Paragraph 4 shall apply in the Amending Agreement.

3.7 If the facts of circumstances giving rise to the obligation of the **User** to provide the security have ceased, then **The Company** shall release the security.

4. PROVISION OF SECURITY FOR LCN FINAL SUMS WHERE USER DOES NOT MEET OR CEASES TO MEET THE COMPANY CREDIT RATING

4.1 Each **User** hereby agrees that it shall (a) forthwith upon signing the Construction Agreement or (b) where the **Construction Agreement** is conditional on the outcome of the **Long Term Access Auction** as soon as possible and in any event within 5 **Business Days** of the **Auction Closure Date** provide to **The Company** or procure the provision to **The Company** of, and the **User** shall until 28 days after the **Completion Date** (unless and until the **Construction Agreement** shall be terminated (and the **LCN Final Sums** shall have been paid) maintain or procure that there is maintained in full force and effect (including by renewal or replacement) a security arrangement from time to time and for the time being as set out in Paragraph 5 to provide security for the **User's** obligation to pay **LCN Final Sums** to **The Company** on termination of the **Construction Agreement**.

4.2 Final Sums: Provision of Bi-annual Estimate and Secured Amount Statement

4.2.1 **The Company** shall provide to the **User** with a **Bi-annual Estimate** showing the amounts of all payments required or which may be required to be made by the **User** to **The Company** in respect of **LCN Final Sums** at the following times and in respect of the following periods:

(i) forthwith on the signing of the **Construction Agreement** or after the **Auction Closure Date** as appropriate, in respect of the **First LCN Security Period**; and

(ii) not less than 75 (seventy-five) days (or if such day is not a **Business Day** the next following **Business Day**) prior to each **Subsequent LCN Security Period** until the **Construction Agreement** shall be terminated and all sums due or which will or might fall due in respect of which security is to be provided shall have been paid.

4.2.2 Such **Bi-annual Estimate** shall be accompanied by the **Secured Amount Statement** specifying the aggregate amount to be secured at the beginning of and throughout each **LCN Security Period**.

4.2.3 If **The Company** shall not provide any subsequent **Bi-annual Estimate** and **Secured Amount Statement** by the requisite date, then the **User** shall at the date it is next required to have in full force and effect security and whether by renewal or replacement or otherwise in respect of the following **LCN Security Period** nonetheless provide security in accordance with the provisions of this **Construction Agreement** in the same amount as the amount then in force in respect of the then current **LCN Security Period**.

4.2.4 Entitlement to Estimate

If **The Company** is (for whatever reason) unable on any relevant date to calculate precisely any sum due or which has accrued due or in respect of which the **User** has a liability to **The Company** for **LCN Final Sums**, **The Company** shall be entitled to invoice the **User** for a sum equal to **The Company's** fair and reasonable estimate of the sums due or which may become due or in respect of which the **User** has a liability to **The Company** for payment. **The Company** shall also be entitled to send the **User** further invoices for such sums not covered in previous invoices. The **User** shall pay **The Company** all sums so invoiced by **The Company** within 14 days of the date of **The Company's** invoice (s) therefor.

4.3 **Demands not Affected by Disputes**

It is hereby agreed between **The Company** and the **User** that if there shall be any dispute between the **User** and **The Company** as to:-

4.3.1 any amount certified by **The Company** in any **Secured Amount Statement** as requiring at any time and from time to time to be secured; or

4.3.2 the fairness and reasonableness of **The Company's** estimate of **LCN Final Sums**; or

4.3.3 whether the amount as required at any time to be secured has been calculated in accordance with the **Construction Agreement**; or

4.3.4 whether there has been an **Event of Default** (under the **Construction Agreement** or the **CUSC**), or

4.3.5 the lawfulness or otherwise of any termination or purported termination of the **Construction Agreement**

such dispute shall not affect the ability of **The Company** to make demands pursuant to the security arrangement to be provided pursuant to this Schedule 4 and the **Construction Agreement** and to recover the amount or amounts payable thereunder, it being acknowledged by the **User** that but for such being the case **The Company's** security would be illusory by reason of the period of validity of the relevant security being likely to expire or capable of expiring before the final resolution of such dispute. The **User** accordingly covenants with **The Company** that it will not take any action, whether by way of proceedings or otherwise, designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount secured under the security arrangement nor seek nor permit nor assist others to do so.

4.4 If there shall be any dispute as mentioned in Paragraph 4.3 above the same shall, whether **The Company** shall have terminated the **Construction Agreement** and recovered or sought to recover payment under the security arrangement or not, and without prejudice to **The Company's** right to recover or seek to recover such payment, be referred in the case of Paragraph 4.3.1, 4.3.2, 4.3.3 to the **Independent Engineer** (and, for the avoidance of doubt the provisions of this **Construction Agreement** relating to the **Independent Engineer** for the purposes of this paragraph 4.4 shall survive termination) and, in the case of Paragraphs 4.3.4 and 4.3.5 be dealt with by referral to arbitration in accordance with the **Dispute Resolution Procedure**.

5. TIMINGS FOR AND TYPES OF SECURITY FOR LCN FINAL SUMS

5.1 The **User's** obligation to pay **LCN Final Sums** shall be secured by any one of the following:-

5.1.1 A **Performance Bond** or **Letter of Credit** from a **Qualified Bank** for the **LCN Final Sums** for a given **LCN Security Period**, such **Performance Bond** or **Letter of Credit** to be **Valid** for at least that given **LCN Security Period** as appropriate and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3; or

5.1.2 A cash deposit in a **Bank Account** at least for the amount of the **LCN Final Sums** to be secured for a given **LCN Security Period** as appropriate, such cash deposit to be increased or reduced periodically where applicable in the manner stated in paragraph 5.2.4; or

5.1.3 A **Performance Bond** from a **Qualified Company** for the amount of the for the **LCN Final Sums** to be secured for a given **LCN Security Period**, such **Performance Bond** to be **Valid** for at least that **LCN Security Period** and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3.

5.2. **GENERAL PROVISIONS**

5.2.1 Any **Notice of Drawing** to be delivered to Barclays Bank PLC or any other bank at which the **Bank Account** shall have been opened or a **Qualified Bank** or a **Qualified Company** may be delivered by hand, by post or by facsimile transmission.

5.2.2 If the **User** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, the **User** shall so notify **The Company** in writing as soon as it becomes so aware. If **The Company** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, **The Company** may notify the **User** to that effect in writing. Where the bank or the company so ceases to be either a **Qualified Bank** or a **Qualified Company** (as the case may be) as a consequence of **The Company** having reasonable cause to doubt the continued rating of the said bank or company, such notice shall be accompanied by a statement setting out **The Company's** reasons for having such doubt. The **User** shall within 21 days of the giving of such notice by **The Company** or the **User** whichever is the earlier provide a replacement **Performance Bond** and/or **Letter of Credit** from a **Qualified Bank** or **Qualified Company**, as the case may be, and/or provide a cash deposit in the required amount in a **Bank Account**. From the date the replacement **Performance Bond** or **Letter of Credit** or **Bank Account** cash deposit is effectively and unconditionally provided and **Valid**, **The Company** will consent in writing to the security which it replaces being released.

5.2.3 The following provisions shall govern the issuance, renewal and release of the **Performance Bond** or **Letter of Credit**:-

5.2.3.1 The **Performance Bond** or **Letter of Credit** shall be **Valid** initially for the **First LCN Security Period**. Such **Performance Bond** or **Letter of Credit** shall be for an amount not less than **LCN Final Sums** to be secured for that **First LCN Security Period**.

5.2.3.2 On a date which is at least 45 days (or if such day is not a **Business Day** then on the immediately preceding **Business Day**) before the start of each **Subsequent LCN Security Period** such **Performance Bond** or **Letter of Credit** shall be renewed so as to be **Valid** for not less than such **LCN Security Period** and in the case of the last **LCN Security Period** to be **Valid**, unless **The Company** agrees otherwise, for 45 days after the last day of such **LCN Security Period**. Such renewed **Performance Bond** or **Letter of Credit** shall be for an amount not less than the amount of the **LCN Final Sums** to be secured during that **LCN Security Period**.

5.2.4 The following provisions shall govern the maintenance of cash deposits in the **Bank Account**:-

5.2.4.1 The amount of the cash deposit to be maintained in the **Bank Account** shall be maintained from the date of the **Construction Agreement** at least to the end of the **First LCN Security Period**. Such cash deposit shall be in the amount of the **LCN Final Sums** to be secured during that **First LCN Security Period**.

5.2.4.2 If the amount of the **LCN Final Sums** to be secured from the start of each **Subsequent LCN Security Period** is an amount greater than the amount then secured, the cash deposit in the **Bank Account** shall be increased to such greater amount on the date which is 45 days before the start of the given **LCN Security Period**.

5.2.4.3 If the **LCN Final Sums** for a given **LCN Security Period** is smaller than the amount then secured, the cash deposit in the **Bank Account** shall not be reduced to the amount so stated until the expiry of 7 days after the start of that given **LCN Security Period** (the "**Release Date**").

5.2.4.4 The sum equal to the amount of reduction in the cash deposit in the **Bank Account** shall be paid by **The Company** to the **User** from the **Bank Account** on the **Release Date**.

5.2.4.5 Any interest accruing to the **Bank Account** shall be for the account of and belong to the **User** absolutely, and **The Company** agrees to take any steps required to be taken by it for the release from the **Bank Account** and payment to the **User** of such interest as soon as the same shall have been credited to the **Bank Account** and **The Company** shall have received notice of such credit.

5.3 Notwithstanding any provision aforesaid:-

5.3.1 The **User** may provide different securities to **The Company** at any one time, each securing a different amount, provided that the aggregate amount secured by such securities shall be not less than the amount of the **LCN Final Sums** required to be secured for that **LCN Security Period**.

5.3.2 The **User** may upon the expiry of at least 14 days prior written notice to **The Company**, substitute one type of security for another provided that unless **The Company** shall otherwise agree in writing such substituted security must be **Valid** from the first day of the relevant **LCN Security Period** and committed at least 45 days before this in the following manner:-

(a) where a **Performance Bond** or a **Letter of Credit** is to substitute for other securities, it must be issued or given at least 45 days before the start of the **LCN Security Period** to which it relates.

(b) where a cash deposit in a **Bank Account** is to substitute for other securities, it must be deposited into the **Bank Account** at least 45 days before the start of the **LCN Security Period** to which it relates.

5.3.3 Upon request by the **User** to **The Company**, securities substituted in the aforesaid manner shall, providing the substitute security shall be **Valid**, be released on the first day of the **LCN Security Period** which the substitute security is securing. However, where the **LCN Final Sums** to be secured for any **LCN Security Period** is less than the amount required to be secured in the preceding **LCN Security Period**, the substituted security shall not be released until 7 days after the start of the **LCN Security Period** that that substitute security is securing.

PART FOUR

TEC FINAL SUMS CREDIT REQUIREMENTS

1. Each **User** which has a **Bilateral Connection Agreement** and/or **Bilateral Embedded Generation Agreement** in respect of which it has been allocated **Transmission Entry Capacity** under the **Long Term Access Auction** by means of **TEC (SR) MW** shall provide security for **TEC Final Sums** in respect of each such agreement in accordance with this Schedule 4 Part Four.

2. It shall provide security for **TEC Final Sums**;

2.1 in the case of a **User** which meets **The Company Credit Rating** at the date of the allocation of **Transmission Entry Capacity** in accordance with Paragraph 3; and

2.2 in the case of a **User** which does not meet **The Company Credit Rating** at the date of the allocation of **Transmission Entry Capacity** or thereafter ceases to meet it, in accordance with Paragraph 4.

3. PROVISION OF SECURITY FOR TEC FINAL SUMS WHERE USER MEETS THE COMPANY CREDIT RATING

3.1 The **User** shall (a) as soon as possible and in any event within 2 **Business Days** of the **Auction Closure Date** confirm to **The Company** whether it meets **The Company Credit Rating**. Thereafter not less than 75 days before the relevant **TEC Security Period** until 28 days after the **TEC Security Period End Date** the **User** shall confirm to **The Company** whether it meets **The Company Credit Rating** (which in the case of a long term private credit rating shall be confirmed by Standard and Poor's or Moody's within a period of 45 days prior to the date of confirmation). The **User** shall inform **The Company** in writing forthwith if it becomes aware of no longer meeting **The Company Credit Rating** or if it is or is likely to be put on credit watch or any similar credit surveillance procedure which may give **The Company** reasonable cause to believe that the **User** may not be able to sustain meeting **The Company Credit Rating** for at least 6 months.

3.2 In the event that the **User** has elected to provide **The Company** with an indicative credit rating and **The Company** is of the reasonable opinion that the **User** has ceased to comply with the requirements of Paragraph 3.1 then **The Company** may require the **User** forthwith:

(i) to apply to Standard and Poor's and/or Moody's for a further indicative long term private credit rating; or

(ii) to confirm to **The Company** that it shall provide the security referred to in Paragraph 3.4 below.

3.3 In the event of the **User**:

(i) not meeting **The Company Credit Rating**; or

(ii) having a credit rating below **The Company Credit Rating**; or

(iii) not having obtained from Standard and Poor's or Moody's within 30 days of the written notification under Paragraph 3.2(i) above an indicative long term private credit rating,

or if **The Company** becomes aware that:

(iv) the **User** ceases to meet **The Company Credit Rating**; or

(v) the **User** is put on credit watch or other similar credit surveillance procedure as specified above which may give **The Company** reasonable cause to believe that the **User** may not be able to maintain **The Company Credit Rating** for at least 6 months; or

(vi) the **User** has not obtained from Standard and Poor's within 30 days of the written notification by **The Company** under Paragraph 3.2(i) above a further indicative long term private credit rating,

the **User** shall (where appropriate on receipt of written notification from **The Company**) comply with the terms of Paragraph 3.4.

3.4 The **User** shall within 21 days of the giving of a notice under Paragraph 3.3 or within 30 days of the **User** confirming to **The Company** under Paragraph 3.2(ii) that it will provide the security specified below (whichever is the earlier), provide **The Company** with the security specified below to cover the **User's Payment** obligation to pay **TEC Final Sums** arising in the event of, or which have arisen prior to, termination of the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement.** The security to be provided shall be in an amount as set out in the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** for the relevant **TEC Security Period**.

3.5 The form of security provided shall be of a type set out in Paragraph 5.

3.6 Until the facts or circumstances giving rise to the obligations of the **User** to provide the security have ceased, then **The Company** provisions of Paragraph 4 shall apply in the Amending Agreement.

3.7 If the facts of circumstances giving rise to the obligation of the **User** to provide the security have ceased, then **The Company** shall release the security.

4. PROVISION OF SECURITY FOR TEC FINAL SUMS WHERE USER DOES NOT MEET OR CEASES TO MEET THE COMPANY CREDIT RATING

4.1 Each **User** hereby agrees that it shall at the start of the **First TEC Security Period** provide to **The Company** or procure the provision to **The Company** of, and the **User** shall until 28 days after the **TEC Security Period End Date** (unless the **Bilateral Connection Agreement** or **Bilateral Embedded Agreement** shall be terminated (and the **TEC Final Sums** shall have been paid) maintain or procure that there is maintained in full force and effect (including by renewal or replacement) a security arrangement from time to time and for the time being as set out in Paragraph 5 to provide security for the **User's** obligation to pay **TEC Final Sums** to **The Company** on termination of the **Bilateral Connection Agreement** or **Bilateral Embedded Agreement**.

4.2 **Demands not Affected by Disputes**

It is hereby agreed between **The Company** and the **User** that if there shall be any dispute between the **User** and **The Company** as to:-

4.2.1 whether the amount as required at any time to be secured has been calculated in accordance with the **SO Long Term Release Methodology**; or

4.2.2 whether there has been an **Event of Default** under the **CUSC**; or

4.2.3 the lawfulness or otherwise of any termination or purported termination of the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement**,

such dispute shall not affect the ability of **The Company** to make demands pursuant to the security arrangement to be provided pursuant to this Schedule 4 and to recover the amount or amounts payable thereunder, it being acknowledged by the **User** that but for such being the case **The Company's** security would be illusory by reason of the period of validity of the relevant security being likely to expire or capable of expiring before the

final resolution of such dispute. The **User** accordingly covenants with **The Company** that it will not take any action, whether by way of proceedings or otherwise, designed or calculated to prevent, restrict or interfere with the payment to **The Company** of any amount secured under the security arrangement nor seek nor permit nor assist others to do so.

4.3 If there shall be any dispute as mentioned in Paragraph 4.2 above the same shall, whether **The Company** shall have terminated the **Bilateral Connection Agreement** or **Bilateral Embedded Generation Agreement** and recovered or sought to recover payment under the security arrangement or not, and without prejudice to **The Company's** right to recover or seek to recover such payment be dealt with by referral to arbitration in accordance with the **Dispute Resolution Procedure**.

5. TIMINGS FOR AND TYPES OF SECURITY

5.1 The **User's** obligation to pay **TEC Final Sums** shall be secured by any one of the following:-

5.1.1 A **Performance Bond** or **Letter of Credit** from a **Qualified Bank** for the **TEC Final Sums** for a given **TEC Security Period**, such **Performance Bond** or **Letter of Credit** to be **Valid** for at least that given **TEC Security Period** as appropriate and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3; or

5.1.2 A cash deposit in a **Bank Account** at least for the amount of the **TEC Final Sums** to be secured for a given **TEC Security Period** as appropriate, such cash deposit to be increased or reduced periodically where applicable in the manner stated in paragraph 5.2.4; or

5.1.3 A **Performance Bond** from a **Qualified Company** for the amount of the **TEC Final Sums** to be secured for a given **TEC Security Period**, such **Performance Bond** to be **Valid** for at least that **TEC Security Period** and to be renewed periodically where applicable in the manner stated in paragraph 5.2.3.

5.2. **GENERAL PROVISIONS**

5.2.1 Any **Notice of Drawing** to be delivered to Barclays Bank PLC or any other bank at which the **Bank Account** shall have been opened or a **Qualified Bank** or a **Qualified Company** may be delivered by hand, by post or by facsimile transmission.

5.2.2 If the **User** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, the **User** shall so notify **The Company** in writing as soon as it becomes so aware. If **The Company** becomes aware that the bank issuing the **Performance Bond** or **Letter of Credit** ceases to be a **Qualified Bank** or that the company giving the **Performance Bond** ceases to be a **Qualified Company**, **The Company** may notify the **User** to that effect in writing. Where the bank or the company so ceases to be either a **Qualified Bank** or a **Qualified Company** (as the case may be) as a consequence of **The Company** having reasonable cause to doubt the continued rating of the said bank or company, such notice shall be accompanied by a statement setting out **The Company's** reasons for having such doubt. The **User** shall within 21 days of the giving of such notice by **The Company** or the **User** whichever is the earlier provide a replacement **Performance Bond** and/or **Letter of Credit** from a **Qualified Bank** or **Qualified Company**, as the case may be, and/or provide a cash deposit in the required amount in a **Bank Account**. From the date the replacement **Performance Bond** or **Letter of Credit** or **Bank Account** cash deposit is effectively and unconditionally provided and **Valid**, **The Company** will consent in writing to the security which it replaces being released.

5.2.3 The following provisions shall govern the issuance, renewal and release of the **Performance Bond** or **Letter of Credit**:-

5.2.3.1 The **Performance Bond** or **Letter of Credit** shall be **Valid** initially for the **First TEC Security Period**. Such **Performance Bond** or **Letter of Credit** shall be for an amount not less than **TEC Final Sums** to be secured for that **First TEC Security Period**.

5.2.3.2 On a date which is at least 45 days (or if such day is not a **Business Day** then on the immediately preceding **Business Day**) before the start of each following **Subsequent TEC Security Period** such **Performance Bond** or **Letter of Credit** shall be renewed so as to be **Valid** for not less than such **TEC Security Period** and in the case of the last **TEC Security Period** to be **Valid**, unless **The Company** agrees otherwise, for 45 days after the last day of such **TEC Security Period**. Such renewed **Performance Bond** or **Letter of Credit** shall be for an amount not less than the amount of the **TEC Final Sums** to be secured during that **TEC Security Period**.

5.2.4 The following provisions shall govern the maintenance of cash deposits in the **Bank Account**:-

5.2.4.1 The amount of the cash deposit to be maintained in the **Bank Account** shall be maintained from the start of the **First TEC Security Period** at least to the end of the **First TEC Security Period**. Such cash deposit shall be in the amount of the **TEC Final Sums** to be secured during that **First TEC Security Period**.

5.2.4.2 If the amount of the **TEC Final Sums** to be secured from the start of each **Subsequent TEC Security Period** is an amount greater than the amount then secured, the cash deposit in the **Bank Account** shall be increased to such greater amount on the date which is 45 days before the start of the given **TEC Security Period**.

5.2.4.3 If the **TEC Final Sums** for a given **TEC Security Period** is smaller than the amount then secured, the cash deposit in the **Bank Account** shall not be reduced to the amount so stated until the expiry of 7 days after the start of that given **TEC Security Period** ("the **Release Date**").

5.2.4.4 The sum equal to the amount of reduction in the cash deposit in the **Bank Account** shall be paid by **The Company** to the **User** from the **Bank Account** on the **Release Date**.

5.2.4.5 Any interest accruing to the **Bank Account** shall be for the account of and belong to the **User** absolutely, and **The Company** agrees to take any steps required to be taken by it for the release from the **Bank Account** and payment to the **User** of such interest as soon as the same shall have been credited to the **Bank Account** and **The Company** shall have received notice of such credit.

5.3 Notwithstanding any provision aforesaid:-

5.3.1 The **User** may provide different securities to **The Company** at any one time, each securing a different amount, provided that the aggregate amount secured by such securities shall be not less than the amount of the **TEC Final Sums** required to be secured for that **TEC Security Period**.

5.3.2 The **User** may upon the expiry of at least 14 days prior written notice to **The Company**, substitute one type of security for another provided that unless **The Company** shall otherwise agree in writing such substituted security must be

Valid from the first day of the relevant **TEC Security Period** and committed at least 45 days before this in the following manner:-

(a) where a **Performance Bond** or a **Letter of Credit** is to substitute for other securities, it must be issued or given at least 45 days before the start of the **TEC Security Period** to which it relates.

(b) where a cash deposit in a **Bank Account** is to substitute for other securities, it must be deposited into the **Bank Account** at least 45 days before the start of the **TEC Security Period** to which it relates.

5.3.3 Upon request by the **User** to **The Company**, securities substituted in the aforesaid manner shall, providing the substitute security shall be **Valid**, be released on the first day of the **TEC Security Period** which the substitute security is securing. However, where the **TEC Final Sums** to be secured for any **TEC Security Period** is less than the amount required to be secured in the preceding **TEC Security Period**, the substituted security shall not be released until 7 days after the start of the **TEC Security Period** that that substitute security is securing.

ANNEX 11 – PRESENTATIONS MADE TO THE WORKING GROUP

ANNEX 11 – PRESENTATIONS MADE TO THE WORKING GROUP
Meeting One – 14th May 2008

CAP166: Transmission Access – Long-term Entry Capacity Auctions

CUSC Panel and TCMF
April 2008

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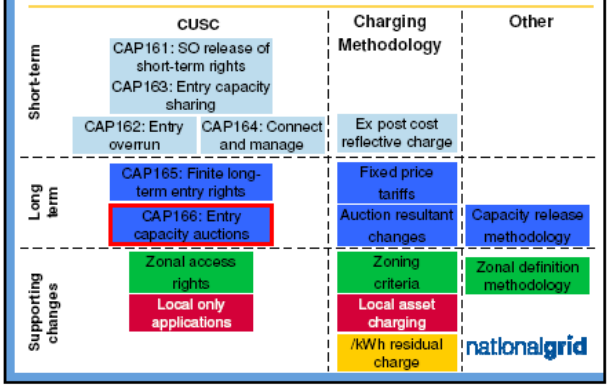
Overview



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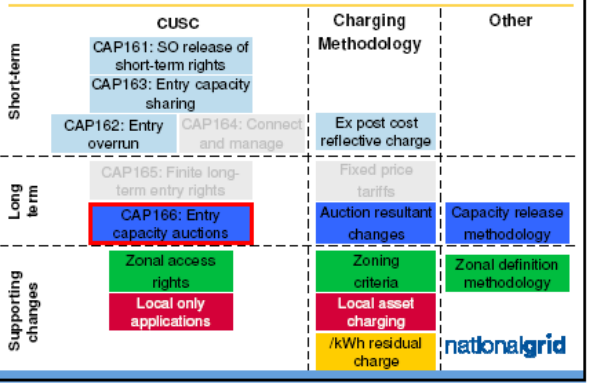
"Capacity Auctions" Straw Man



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Defect

- Existing generators currently have a rolling option for entry rights
- In the constrained period, new entrants have no ability to gain long-term entry rights, even if they value them more highly
  - Creates a barrier to entry
  - May compromise ability to develop an optimally economical transmission system
  - Should secondary trading be at value, when rights holder has not paid value?
- Current access arrangements do not provide certainty for TOs
  - Only 5 days' notice required for TEC decreases
  - May lead to inefficient investment signals
  - Prevents reallocation of existing capacity to future new entrants
- No requirement for financial security from existing generators
  - Insufficient user commitment when compared to new entrants

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Proposed Solution

CAP166: Entry capacity auctions

- All long-term entry access rights to the transmission system to be allocated by auction
- Entry rights would be zonal, and released in annual blocks
- Annual auctions, with capacity allocated pay as bid
- Bids underpinned by user commitment, in form of liability to pay charges and requirement for appropriate financial security
- Capacity allocated to limit of available ("baseline") capacity
- Incremental capacity released outside of a specified period, where unfulfilled bids in excess of zonal reserve price sufficient to pass a regulatory test
  - Would be defined in a separate methodology
- Separate arrangements to be put in place for local infrastructure
- Appropriate financial security required for residual charge

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Applicable Objectives and Recommendation

Objectives

- CAP166 better facilitates CUSC Applicable Objective (a) as the release of capacity at value, and the improved investment signals from long-term bookings, would better allow development of an efficient, co-ordinated and economical transmission system
- CAP166 better facilitates CUSC Applicable Objective (b) as:
  - Access rights for existing capacity would be allocated to those that valued them most
  - Reserved capacity could be reallocated after firm bookings expire
  - Enhanced transparency and certainty of commitments required

Recommendation

- National Grid recommends that CAP166 should be assessed by a joint CAP165-166 Working Group, for a period of 3 months
- National Grid further recommends that certain elements of CAP166 that are common across CAP161-166 be assessed by a sub-group, for a period of 3 months

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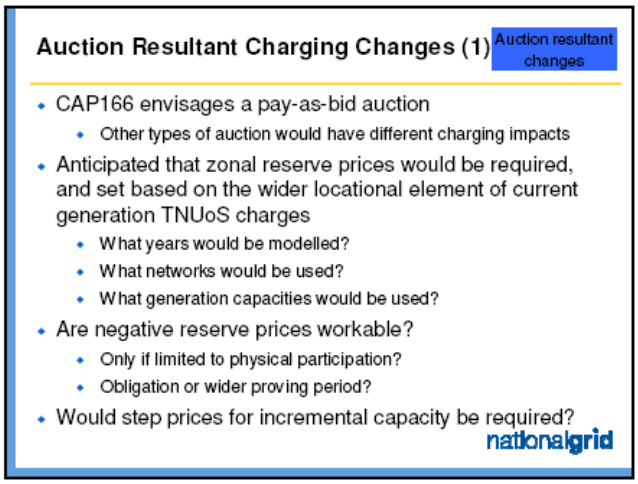
Auction Resultant Charging Changes (1)
Auction resultant changes
CAP166 envisages a pay-as-bid auction
Other types of auction would have different charging impacts
Anticipated that zonal reserve prices would be required, and set based on the wider locational element of current generation TNUoS charges
What years would be modelled?
What networks would be used?
What generation capacities would be used?
Are negative reserve prices workable?
Only if limited to physical participation?
Obligation or wider proving period?
Would step prices for incremental capacity be required?
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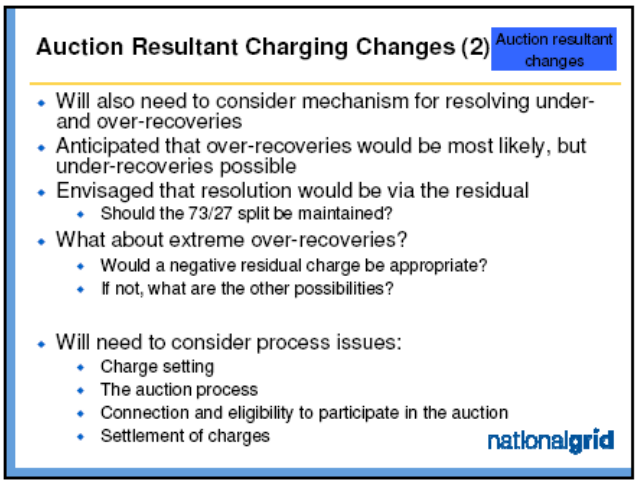
Auction Resultant Charging Changes (2)
Auction resultant changes
Will also need to consider mechanism for resolving under- and over-recoveries
Anticipated that over-recoveries would be most likely, but under-recoveries possible
Envisaged that resolution would be via the residual
Should the 73/27 split be maintained?
What about extreme over-recoveries?
Would a negative residual charge be appropriate?
If not, what are the other possibilities?
Will need to consider process issues:
Charge setting
The auction process
Connection and eligibility to participate in the auction
Settlement of charges
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Meeting Four - 24th June 2008

Gas Access Entry Capacity Auctions

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Agenda

- Life before auctions
- Why the change ?
  - Options considered ?
  - Changed to….
- Subsequent Changes and rationale
- High level of overview of auctions
  - Overview of QSEC
- Lessons learnt

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Life Before auctions

- Shippers could book Entry Capacity at any time for 12 monthly blocks.
  - Could have multiple blocks during a 12 month period capacity could go up and down
  - No link into investment
- No limit on capacity booking
- Fixed price
- Perception of "Gold Plated" system.

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Why the Change ?

- Locational constraints in the autumns of 1997 and 1998 at St.Fergus.
- Resolved via energy rather than entry capacity actions
- Cost circa £20 million
- Therefore industry faced costs and pushed for regime change
- As there was no mechanism to buyback entry capacity an Interim Mod to scaleback capacity holdings was introduced for the spring / summer 1999.

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The Change itself

- Reform of the Gas Trading Arrangements
  - Introduction of Monthly System Entry Capacity Auctions (MSEC) in September 1999.
    - Based on pay as bid
    - SND release (i.e. profiled)
    - 6 month period
    - At each ASEP (capability at ASEP level)
    - Incentive 20% of revenues/costs £5million cap/collar
  - Daily auctions also implemented (Firm and Interruptible)
- On the Day Commodity Market (OCM) developed at the same time

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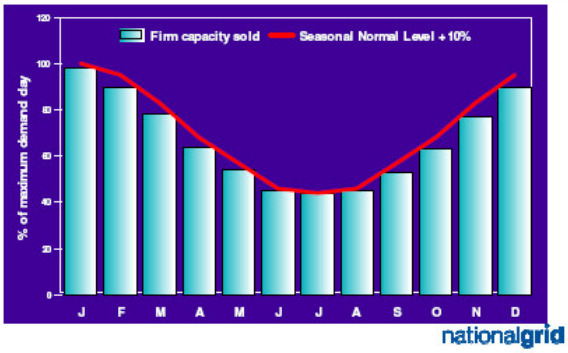
SND profile



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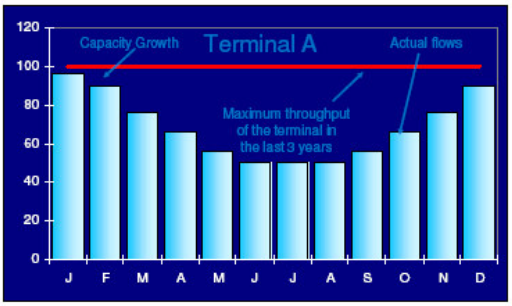
Top Down approach



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Other Options Considered

- Grandfathering of rights (i.e. once bought they are reserved forever)
- Commoditisation (i.e. new charging)
- Auctions provided
  - Equal opportunity
  - Price discovery
  - Efficient allocation process
  - Mechanism to manage entry capacity constraints

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Subsequent changes

- Gas Trade functionality implemented in RGTA (March 2000)
- 2nd MSEC auction run with Variable Profile Auction (5th tranche capacity available at any ASEP if unsold)
- SND +10% (for Oct 2000)
  - Due to perception of capacity availability limited
  - High auction revenue
- Within Day auctions introduced (May 2000)

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Subsequent changes

- 2001 first "top down" MSEC held
  - Based on highest physical maximum in the period auctioning
- Mod 500 (implemented Oct 2002) introduced to provide
  - User commitment/long term booking via QSEC auction
  - Complete "top down" regime
  - First auction run in Jan 2003 for October 2004
- 2002 PCR
  - Introduction of economic test, Incremental Entry Capacity Release Statement and Unit Cost Allowance based prices.

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Subsequent changes

- Buyback incentive target changed on several occasions since 1999.
  - 2002 Target based mechanism introduced (in Licence rather than Network Code)
  - 2004 Locational energy actions included in Entry neutrality and entry capacity incentive

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Subsequent Changes - Pricing

- Entry capacity reserve prices are determined by National Grid's LRMC methodology which reflects the costs of reinforcing the NTS network to transport additional gas between entry and exit points.

Period	Mechanisms	Baseline/Obligated Capacity	Incremental Capacity	Under Over Recovery
< 2002	Administered Prices	Transcost	N/A	Administered Prices
2002 - 2007	Auctions	UCA	Transcost	TO Entry Commodity & Buy-back offset
2007 >	Auctions	Transportation Model	Transportation Model	TO Entry Commodity (including potential rebate) & Buy-back offset

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National Transmission System

All auctions make Entry Capacity available by ASEP

New mechanisms introduce the movement of Entry Capacity between ASEPs

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How we make capacity available

- Long Term System Entry Capacity (LTSEC)
- Monthly Firm (MSEC)
- Rolling Monthly System Entry Capacity (RMSEC)
  - Trade and Transfer RMTTSEC auction implemented effective from June 2008 for August 2008 NTS Entry Capacity
- Daily Firm
- Daily Interruptible

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LTSEC / QSEC	MSEC	RMSEC*	DSEC
• Up to 90% of SO baseline • All pay same for long term capacity per quarter per ASEP	• 4 rounds, 25% available capacity in each • In the 4th round any capacity remaining from the 1st 3 is offered again • Pay as you bid	• 5 days before month end auction any remaining baseline capacity for next month • Pay as you bid	• Bid up to 7 days in advance • Daily Firm • 3 auctions run D-1, hourly within day • Obligated to offer unsold baseline capacity up to 07:00 D • Pay as you bid (zero reserve on D) • Within Day bids may be accepted and begin in the next hour +1 and last rest of day • Daily Interruptible • UIOLI • Capacity sold at 13:00(D-1) • Pay as bid (zero reserve)

GAS DAY (D)

Years 2 to 17 Ahead | Years 1 & 2 Ahead | Month Ahead | Gas Day and Day Ahead

* Note : RMTTSEC auction introduced with effect from June for August capacity

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QSEC Auction - overview

- QSEC (Quarterly System Entry Capacity)
  - Held every September
  - Offers capacity from 18 months out for 15 years (i.e. Sept'08 offer capacity for April 2010 to March 2025).
  - Cleared price auction
  - Reserve Price (P0) and upto 20 incremental price steps
  - Users bid against a "price stack"
    - P0 = 90% of Licence baseline + incremental obligated *(+ substituted in) minus sold *(- substitution out)
  - Potential for incremental signals (release of non obligated and or incremental obligated)
  - To release incremental obligated must pass an NPV test in accordance with the IECR (Incremental Entry Capacity Release Statement)

* Denotes new PCR requirement

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Lessons learnt (QSEC)

- Provides shippers with an equal opportunity to signal their long term requirements
- Provides National Grid NTS with long term signals backed by user commitment for investment. Although this makes it difficult for National Grid NTS to take into account other information
- Allows Shippers the ability to place a value on a scarce product.
- Over time has become more complex
- Relationships between the pricing of different auctions can produce certain behaviours
- Mechanisms to manage the relationship between auction revenues and under/over recovery need to be considered

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A Users perspective on Gas Entry Capacity Auctions

Peter Bolitho

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1996 – The Network Code

- Common rules for all users
- Non-discriminatory access to network
- Administered transmission charges simply a cost recovery mechanism
- NGG firmly a residual player
- Constraints managed through the energy regime

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1997 to 2000 - Competition between energy regulators

- Reform of Gas Trading Arrangements (RGTA), re-branded NGTA
- Producers want commitments from NGG over system expansion for new fields
- Concerns about 'overselling' capacity emerge
- Constraints at St Fergus as reinforcement for Britannia field late
- Situation exacerbated by alleged profiling of flows
- Balancing costs increase significantly to £21m
- Crude Transco Modification 271 to scale-back capacity rights works
- Advance Reservation of Capacity Agreements provide user commitments.

→ Ofgas encourage Transco to propose short-term capacity auctions

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The National Transmission System today

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Entry Capacity Auction chronology 1999 to date

- Oct 99 Short-term entry capacity auctions
- Apr 00 One-off Commodity charge & bid scaling rebate
- July 00 Adjust Commodity if Under/over by >10%. Otherwise K
- July 2001 Buy-back Offset mechanism
- 2002 New Capacity incentives set out in Licence
- Jan 2003 New long term capacity auctions
- 2003 Mods dealing with new entry points
- Mar 2004 TO entry commodity charge to deal with under-recovery
- 2007 Baseline controversy and Judicial Review
- 2007 Trade and Transfer Modifications
- 2008 to 2009 Baseline Substitution Arrangements

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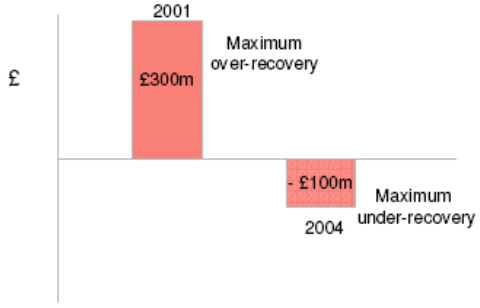
Revenue recovery – "famine to feast"



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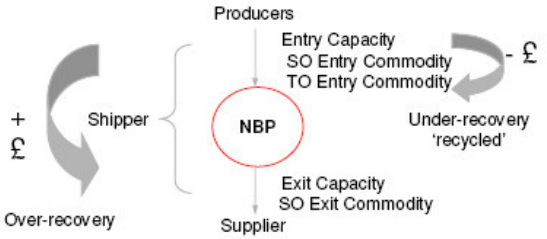
Revenue redistribution



NTS Allowed revenue = Approx £600m / annum

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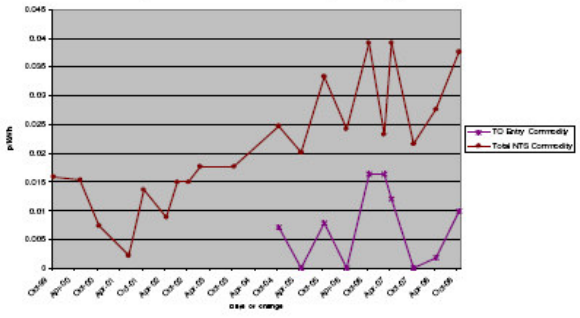
Volatility in NTS Commodity Charges



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Investment signals from auctions

Ofgem say £75m St Fergus investment should be disallowed at last TPCR (inadequate auction signals)

Ormen Lange Field

2006 Inadequate capacity at Easington despite clear need

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Investment signals

- Not always possible for parties to make long-term commitments
- Move away from central planning
- Undue reliance on "user commitments" from long term auctions.
- Potential chilling affect on transmission investment

→ "Just in time investment" soon becomes "just too late investment"

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Triggering incremental investment

"Careful choreography by National Grid to ensure bidders provide 'appropriate' user commitments"

NGG must satisfy NPV over 8 years > 50% project value

Published system models give clues to project costs

Inadequate bids from others may mean Investment not triggered

Bidders try to just meet trigger level

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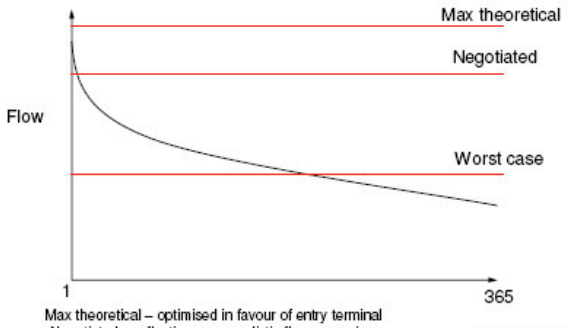
How much to sell? The controversy over baselines?



Max theoretical – optimised in favour of entry terminal
Negotiated – reflecting more realistic flow scenarios

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How much to sell? The controversy over baselines?

- 1999 regime started with a profiled
- 2001 'top-down' approach
- Concerns about buy-back risks
- 2002 baselines linked to investment incentives
- 2007 renegotiated baselines and set below market expectations
- Concerns re Teesside and Easington Capacities
- Fears re LNG deliveries and peak gas deliveries
- Reliance on short-term access rights a problem
- Exxcelerate Judicial Review

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Transfer & Trade & Substitution

- New concept agreed as part of last TPCR
- Shippers see this as a possible solution to inadequate baselines
- Involves the short term transfer of unsold & surrendered access right between entry points.
- Long-term substitution arrangements to be developed to allow the long term transfer of baseline quantities between terminals

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Complexity

- About 70 code modifications
- Around 15 charging methodology changes
- An almost incomprehensible NGG NTS Gas Transporters licence
- Complex incentive arrangements governing investments
- Fragmentation of rules,
- Hiving-off rules into non code documents, System Operator Incentives, Incremental Entry Capacity Release Statement, Entry Capacity Trade and transfer Methodology Statement
- Only National Grid gas can really understand the arrangements

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Gas Entry Capacity Auction Regime - Conclusions

Benefit	Short-term	Long-term
Efficient allocation of a scarce resource	✓✓✓	n/a
Positive investment climate for TSO	n/a	××
Appropriate investment signals	×	××
Lower risk of stranded assets for TSO	n/a	✓
Stability &/or predictability of charges	× ×	××
Low complexity	×	×××
Role of TSO minimised	✓	×××
Enhances regulatory oversight	✓	××
Lower cost/more effective TSO incentives	✓	××

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Questions and observations

- Long-term gas auctions are nothing more than complex user commitments.
- How much capacity should be sold? What should the reserve prices be?
- What form over and under recovery mechanisms should apply?
- What would the mechanism be to include new entry points?
- What if any capacity management tools should the TSO have?
- How to ensure there is good governance of capacity release, auctions methodologies etc and how can users influence future changes to the arrangements?
- The 'ticket to ride' /penal overrun charge regime cannot apply to electricity regime.
- What degree of involvement do you want NGET to have in the market?
- Do more NGET incentives mechanism represent value for money?
- Do you want to spend the next 10 years discussing how to make auctions work?

Long Term System Entry Capacity Auctions - A Users View

The experience of a (Gas) User of the National Grid process for Access to Transmission Networks

Transmission Access Review WG2

centrica

Points to Cover

- Introduction and background
- Comment on the process described
- What's good for Users?
- What's not so good?
- Issues for consideration

Introduction and background

- Mike Young
  - Business Development Manager, Gas Transportation
  - Formerly, member of Modification Panel
  - Chair of Gas Forum Shipper Group
  - Significant involvement in development of Modification Proposals 500/508 and subsequent development of the System Entry Capacity Regime
  - Involvement in Reform of Exit Capacity Arrangements
  - Lead on (Gas) Transmission Price Controls (2002-07 & 2007-12)

Comment on the Process and its context

- National Grid overview of the process
- National Grid has Obligations under its Licence
  - Transmission Price Control
  - Economic & Efficient use of system
  - Incremental Entry Capacity Release
  - System Management Principles

What's good for Users?

- Certainty
  - Capacity **Allocated** is a FIRM FINANCIAL commitment
  - Price at Allocation is fixed
- Long Term
  - Ability to secure capacity 3 - 18 years forward
- Ability to signal incremental requirement (Qualified!)
- Ability to "move" capacity to a different location (Qualified!)

What's not so good?

- Baselines for System Entry Capacity (SEC)
  - Set under price Control
  - What do they represent
    - System Capability?
    - Or more crudely, a means to ensure recovery of Allowed Revenue?
- Reserve Prices
  - Paradox of a market mechanism limited by Allowed Revenue
- Transparency of operation by (SO)
- Signals for Incremental Capacity
  - Co-ordination of overlapping periods
  - Co-ordination of Users
  - Precise timing of incremental requirement
    - Co-ordination with Development Project Plan
  - Rigid application of lead time (42 months)
- Substitution and Transfer of Capacity may erode aggregate system capacity

Issues for Consideration

- Setting of Baselines
- Reserve Prices and correction of Revenue
- True Incremental Capacity
- Risk if applied as sole information source for investment
- Visibility of System Operation
- Balance of Risk/Reward where substitution or transfer
- Co-ordination of requirements (Users and Timing)

Thank you for your attention

Any Questions?

CAP166: Long-term entry capacity auctions Process and allocation of baseline capacity

Transmission Access Working Group 2
Meeting 4, 24th June 2008

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Long-Term Entry Capacity Auctions
Agenda

- Overview
- Auction design
  - Examples
- Issues
  - Negative zones
  - Physical participation
  - Transition
  - Application process
  - Reserve prices
  - Under- / Over-recoveries

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Long-Term Entry Capacity Auctions Overview
Product

- All long-term entry access rights to be allocated by auction
- CAP166 does not consider short-term products
  - Covered by CAP161
- Long-term product would be:
  - Annual blocks of capacity
    - Consistent with existing annual product
  - Released on a zonal basis
    - Capacity would be assigned to nodal agreements, but would be shareable within zone
- Product specification as per CAP165, except:
  - Method of allocation
    - Auction instead of first come first served
  - Associated charges
    - Derived from accepted bids instead of TNUoS
  - Physical participation?

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Long-Term Entry Capacity Auctions Overview
Allocation

- Available ("baseline") entry capacity would be defined for each zone
- Capacity would be allocated to limit of baseline capacity
- Unfulfilled bids in excess of zonal reserve price may trigger release of incremental capacity if a regulatory test passed
  - To be covered next meeting
- Capacity allocated would be underpinned by user commitment, in form of liability to pay charges associated with accepted bids and requirement for appropriate financial security
  - Debate as per CAP165

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Long-Term Entry Capacity Auctions Overview
Process

- Proposed to hold auction annually, to release capacity from following April
  - Likely to be held in winter
    - Locational charge could be set to be used as reserve price
    - Residual charge would be set after auction to aid correct revenue recovery
  - May be relatively little capacity to release after first auction
- Proposed that capacity be released for whichever years demanded
  - Same debate as CAP165
  - Interaction with zonal stability
- Exact requirements for information from bidders relating to price and quantity, and charges to be paid if successful, will depend on auction design chosen…

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Auction Design
Introduction

- Auctions have many different properties, which can have different solutions
  - Number of sellers and bidders
  - Single unit / multi-unit
  - Pay as bid / pay as second highest bid / clearing price (lowest successful or highest unsuccessful)
  - Single round / ascending / descending
  - Closed / open (with different levels of openness)
  - Participation rules
  - Minimum bid increments

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Auction Design
Allocation / Type of auction

	Closed	Open
Pay as Bid	• CAP166? • Gas MSEC Auctions	• Gas DSEC Auctions • Current IFA Auctions
Clearing	• New IFA Auctions	• Gas QSEC Auctions

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Auction Design
Gas Entry Auctions

Auction	Classification	Information Published during auction
QSEC	Clearing Price/Price Step auction	Aggregate demands at each price step per ASEP Stability Measure – First price level where Demand is first less than or equal to Supply
AMSEC	Pay as Bid	Closed – although information published betweens rounds for different capacity
RMSEC	Pay as Bid	Closed
Day Ahead	Pay as Bid	Users can see bid quantities and bid prices by ASEP
Within Day	Pay as Bid	Users can see bid quantities and bid prices by ASEP
Interruptible	Pay as Bid	Closed

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Auction Design
Closed pay as bid (1)

- CAP166 as submitted included a pay as bid auction
- This was envisaged as a single round, closed process
- Generators' bids would specify both price and volume
- Allocate for each zone for each year

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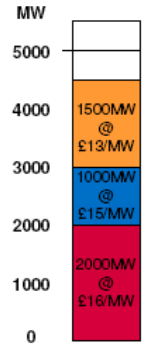
Auction Design
Closed pay as bid (2)



- Zonal baseline of 5000MW
- Reserve price of £13/MW
- Demand less than supply
- 4500MW allocated to 3 users
- 500MW unallocated

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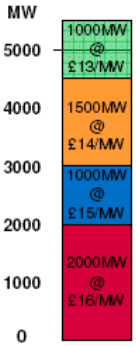
Auction Design
Closed pay as bid (3)



- Zonal baseline of 5000MW
- Reserve price of £13/MW
- Demand exceeds supply
- 4500MW allocated to 3 users
- 500MW (of a 1000MW bid) offered to fourth user

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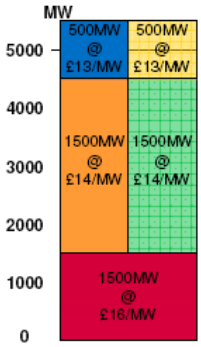
Auction Design
Closed pay as bid (4)



- Zonal baseline of 5000MW
- Reserve price of £13/MW
- Demand exceeds supply
- 4500MW allocated to 3 users
- 250MW offered to each of the remaining users

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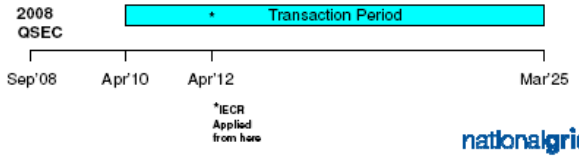
Auction Design
Gas QSEC model (1)

- In Sep'08, capacity will be offered for Apr'10 – Mar'25
- Default 42 month lead time (IECR applied from Apr'12) for reinforcement (which can be flexed using permits)
- The following example:
  - Refers to the constrained period, before reinforcement can be completed (Apr'10 – Apr'12 in this example)
  - Ignores Substitution, Trades & Transfers and non-obligated release



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Auction Design
Gas QSEC model (2)

Demand less than supply

Supply: Available (kWh)	Price Label	Price (p/kWh)	Demand: Max Bid Capacity (kWh)
1532	P_5	0.0229	1263
1494	P_4	0.0222	1223
1456	P_3	0.0214	1286
1418	P_2	0.0212	1318
1380	P_1	0.0204	1341
1342	P_0	0.0198	1341

Price P_0
Unsold 1

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Auction Design
Gas QSEC model (3)

Demand exceeds supply

Supply: Available (kWh)	Price Label	Price (p/kWh)	Demand: Max Bid Capacity (kWh)
1532	P_5	0.0229	1223
1494	P_4	0.0222	1286
1456	P_3	0.0214	1386
1418	P_2	0.0212	1471
1380	P_1	0.0204	1498
1342	P_0	0.0198	1596

Price P_4
Unsold 56

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Auction Design
GB – France Interconnector 2001-08

- Software developed by Questar (US)
- Annual to daily products successfully auctioned for over 7 years
- Customers accede to the IFA Access Rules
- Open 'live' auction format (e.g. eBay)
- Customers bid a price-volume pair; check dialogue box
- Pay-as-bid; currently no reserve prices in any auctions
- Minimum 15min period followed by 2min refresh; after closure process initiated
- 'On screen' traffic lights for full, partial, no allocation
- Customer can see all bids but only their own name
- Auction configuration includes minimum bid increment
- Hosting/managed service currently by LogicaCMG (Nottingham)
- Hardware owned by National Grid (co-owned NGIL & RTE)
- Recent comms & database upgrades
- National Grid procured IPR to software

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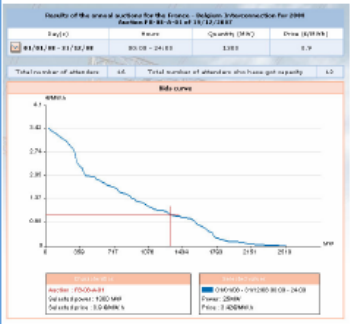
Auction Design
GB – France Interconnector 2009+

- National Grid & RTE procuring a European 'best of breed' cross-border explicit capacity auction system; 'go-live' planned Q2 2009



- High degree of configurability in specification; with expectation of:
- Closed auction format
- Customers submit a bid stack of up to 10 price-volume pairs
- Bids can be over-written during submission period
- Pay-as-clear (lowest marginal price)
- Auction results published (example)
- Fully web-enabled, external hosting

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Long-Term Entry Capacity Auctions Issues
Negative zones

- If based on the locational element of TNUoS, reserve prices in many zones will be negative
- In theory, generators could bid progressively less negative prices
  - Generators would continue to be paid based on their export over the winter period in question?
- Risk that capacity could be sterilised by bidders with little or no intention of running (or ability to)
  - Reserve price would collapse to zero
- Might be avoided by constraining bids to CEC or local capacity level due to be held during relevant period
  - Assumes a material cost to holding these

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Long-Term Entry Capacity Auctions Issues
Physical participation

- Participation may need to be limited to physical players to enable negative reserve prices to be used
- Under CAP165, in relation to extending participation to non-physical players we have previously noted that:
  - There is no non-physical category of CUSC user
  - Poor investment signals and unused capacity might result
  - Gaming might occur
  - Liquidity may not be increased?
  - Inconsistency with CAP150 etc
- Is CAP166 different to CAP165 in this respect?

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Long-Term Entry Capacity Auctions Issues
Transition

- Proposal is that all existing capacity would be reallocated
  - What is the appropriate forum for the property rights debate?
- Initial auction would be held in winter 2009/10 to allocate capacity from 1 April 2010
- System is currently planned to accommodate a proportion of total TEC released
  - Implies initial baseline should be less than sum of existing TEC
  - Or that additional cost may be incurred in releasing total TEC
- Other issues with baselines:
  - How would existing over-booking in Scotland be resolved?
  - Calculation in unconstrained zones
  - Treatment of planned reinforcements during transition
    - User commitment would be removed by user relinquishing access rights

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Long-Term Entry Capacity Auctions Issues
Application process

- Wider access rights would be explicitly de-linked from local connection
  - Wider access rights would be auctioned once a year
- Proposing that new connectees would apply at least 3 months before the annual auction to get an offer for a local connection
- This offer could be held open until the resolution of the auction process, and the user would have the option of accepting (or otherwise) the local connection offer dependent on the outcome of the auction
- Potential link to annual application windows under the offshore regime

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Long-Term Entry Capacity Auctions Issues
Reserve prices

- CAP166 envisages zonal reserve prices
  - Users should not be paying less than a cost-reflective charge
- These could be based on the wider locational element of current generation TNUoS charges
  - Is current ICRP methodology reflecting appropriate costs?
- What years would these be based on?
- What capacities would be used?
  - At first auction, no capacity has been allocated
  - Could use zonal baseline capacities
    - Would need to scale these to demand
    - How would these be allocated to nodes – scale by CEC?
  - In future years can include previously sold rights
    - Defined nodally, although these can be shared anywhere in zone
- Consider step prices next time

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Long-Term Entry Capacity Auctions Issues
Under- / Over-recoveries

- Anticipated that over-recoveries would be most likely (assuming a reserve price), but under-recoveries would also be possible
- Envisaged that resolution would be via the residual
  - Should existing 73/27 split be maintained?
- Currently £50m locational (£175m-£125m), £315m residual
  - Most extreme under-recovery would result in a £175m (56%) increase in residual
  - Potential for over-recovery is unlimited, but would require a 630% increase in current locational revenue to fully offset residual
  - Although unlikely, would a negative residual be appropriate?
  - Alternatively, could:
    - Discount demand residual – but would violate 27/73 split
    - Discount BSUoS – but would be transferring money from TO to SO price control

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Meeting Five – 9th July 2008

ofgem Promoting choice and value for all gas and electricity customers

Transmission Access Review

Ofgem presentation at TA Working Groups
Stuart Cook
Director - Transmission

WG 1 - 8 July 2008
WG2 – 9 July 2008
WG3 – 16 July 2008

ofgem Promoting choice and value for all gas and electricity customers

GB transmission network will need to connect a substantial volume of new generation

Existing arrangements are not fit for purpose. Significant queue of generators waiting to connect. Transmission investment lags behind generation investment

- The existing GB transmission system connects **c80GW** of generation to meet around **60-65GW** peak demand
- To meet 2020 targets will require an ***additional* 60GW+** of renewable capacity plus:
  - thermal (fossil) back up plant given intermittency
  - new nuclear generation
  - around 20GW of existing generation is expected to close by 2020 and distributed generation will also have an impact
- Majority of new connections for ***onshore and offshore wind***, but also ***nuclear, gas and clean coal.*** Connections may be remote from the existing network resulting in potential planning difficulties

Longer term targets create major uncertainties and challenges for Ofgem, HMG and companies . This isn't just a renewables issue. Need for radical reform and innovation.

2

ofgem Promoting choice and value for all gas and electricity customers

Ofgem's key principles for enduring transmission access arrangements

- **Protecting customers' interest** through reform is vital
  - Long term user commitment from generators is key – avoids transfer of stranding risk to customers and improve the quality of information of future demand for transmission capacity
- Existing generators **do not have "evergreen" rights** to the system (but we are open to "legal" arguments)
- It is important to have **long-term tradable rights**
  - Users can sell rights on a permanent or temporary basis allowing lower carbon technologies to displace existing and reallocation of spare capacity
- **Overselling capacity/connect and manage** not ruled out can be considered, based on proper assessment of costs (eg constraints) and benefits (eg lower carbon emissions)

3

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The TAR package

Enduring access arrangements	• Amendment proposals on commercial arrangements and charging methodology • Modular approach, capable of delivering a range of different regimes • Possible implementation around April 2010

4

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The TAR package

Enduring access arrangements	• Amendment proposals on commercial arrangements and charging methodology • Modular approach, capable of delivering a range of different regimes • Possible implementation around April 2010
Short term measures (a form of "connect & manage")	• Improving management of existing "queue" of generators • Measures to release and utilise the full capacity of the system • Scope to connect more generation through limited derogations from security standards? Criteria include: Benefits > Costs. • Concerns about market power? Incumbents wanting to advance generation projects asked to auction existing capacity?

5

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The TAR package

Enduring access arrangements	• Amendment proposals on commercial arrangements and charging methodology • Modular approach, capable of delivering a range of different regimes • Possible implementation around April 2010
Short term measures (a form of "connect & manage")	• Improving management of existing "queue" of generators • Measures to release and utilise the full capacity of the system • Scope to connect more generation through limited derogations from security standards? Criteria include: Benefits > Costs. • Concerns about market power? Incumbents wanting to advance generation projects asked to auction existing capacity?
Planning & Incentives	• TSOs to publish a major technical study by end of 2008. Brought together through ENSG • Ofgem to develop sharper incentives for TSOs, in particular, new investment incentives for TOs to take some of stranding risk (but with higher reward for timely & efficient investment) • Linked to ongoing review of SO incentives

6

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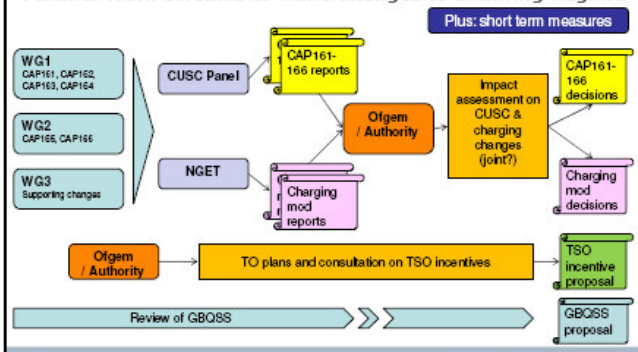
Parallel Work Streams to Make Changes to Enduring Regime



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Our expectations (enduring arrangements)

- WGs are expected to:
  - Consider linkages (eg mutual dependency/enhancement/exclusion) between proposals, bearing in mind the over-arching framework to be established
  - Develop, assess and report on evidence (wherever possible, quantitative) for a manageable number of viable options
  - Be mindful of CUSC and other obligations (e.g. prohibition on undue discrimination)
- CUSC Panel is expected to:
  - Consider WG reports. Submit report to the Authority setting out assessment of options and a recommended option for each CUSC amendment proposal
  - Be mindful of CUSC and other obligations (e.g. prohibition on undue discrimination)
- NGET is expected to:
  - Consult on charging options arising from WGs
  - Submit report to the Authority setting out assessment of options and charging modification proposals
- Ofgem/Authority is expected to:
  - Provide an appropriate steer on analysis and direction
  - Conduct Impact Assessment(s) on proposals, leading to decision on changes

Authority to report on progress to the Secretary of State by end-2008. Government will consider legislation in the event of delay or resistance.

8

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Some initial observations on current topics of debate

- Our starting point: the regime should permit non-physical players to acquire and trade capacity
  - Limiting to physical players will restrict market activity
  - We consider that it works in gas but, would need to be coupled with effective UIOLI, etc
- In general, auctions provide the most effective way of allocating scarce capacity. Happy to consider views about the merits of an auction-based approach for the non-short-term capacity. But, some questions:
  - Need to ensure that the short-term and non-short-term arrangements 'hang together'
  - Alternative approaches (e.g. administered price) may not afford the flexibility, for example, to allow parties to signal both volume and prices
  - We will need to see an informed assessment of the merits of alternative options.
- Credit cover - do we need to distinguish between Value at Risk (VAR) and the risk of party default?
  - Value at risk - will depend on: the extent to which the relevant assets can be used now or in the future by a different party
  - The risk of party default - will depend on the particular circumstances of the party

9

CAP166: Long-term entry capacity auctions Incremental Release Process and Strawman

Transmission Access Working Group 2
Meeting 5, 9th July 2008

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Long-Term Entry Capacity Auctions
Agenda

- Gas Incremental Capacity Release Process
- Electricity Long-Term Entry Auction Strawman

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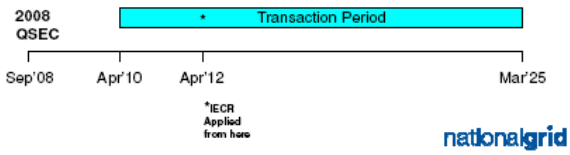
Gas Incremental Capacity Release Process
Overview

- Auction held annually selling quarterly blocks
- In Sep'08, capacity will be offered for Apr'10 – Mar'25
- Default 42 month lead time for reinforcement
  - Incremental Entry Capacity Release (IECR) would apply from Apr'12
  - This can be flexed using permits, but declared before auction



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Gas Incremental Capacity Release Process
IECR methodology – step 1

- 34. In respect of any ASEP where a minimum quantity of incremental capacity is demanded in any quarter National Grid will consider releasing incremental capacity to meet that demand.
  - i.e. National Grid will assess each quarter in which demand exceeds supply

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Gas Incremental Capacity Release Process
IECR methodology – step 2

- 35. National Grid will, for the quarter in question plus the subsequent thirty one quarters (or less where this would be beyond the period for which capacity has been offered) determine the net present value (NPV) of the revenue from bids for incremental entry capacity which would be accepted if the given quantity of incremental entry capacity was released.
  - i.e. the NPV of the revenue associated with the incremental demand is calculated over 32 quarters

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Gas Incremental Capacity Release Process
IECR methodology – step 3

- 36. If the NPV equals at least 50% of the "estimated project value", then National Grid would seek approval from the Authority to designate that quantity of incremental capacity as incremental obligated entry capacity under the terms of the Licence….
  - i.e. incremental capacity is triggered if the NPV of the incremental revenue is at least half the project value

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Gas Incremental Capacity Release Process
Project value

- Project value used to be based on the Unit Cost Allowance

  Project value = Incremental capacity x UCA x Cf_1

- This was changed because of cost reflectivity concerns and the inconvenience of having to reopen the PCR to introduce a new UCA at a new node

- Project value is currently derived from the step prices

  Project value = Incremental capacity x Initial price x Cf_2

- The initial price is calculated using nodal incremental kms from the transport model

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Gas Incremental Capacity Release Process
IECR worked example (1)

- Data from NPV example in IECR Methodology

Available (GWh)	Price Step	Price (p/kWh/day)	Estimated Project Value (£m)
150	P_5	0.06	20
140	P_4	0.05	16
130	P_3	0.04	12
120	P_2	0.03	8
110	P_1	0.02	4
100	P_0	0.01	0

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Gas Incremental Capacity Release Process
IECR worked example (2)

- Bids received for a selection of quarters

Available	Price Step	Price	Q3	Q4	Q5	Q9
150	P_5	0.06	120	120	110	100
140	P_4	0.05	120	120	110	100
130	P_3	0.04	130	130	120	100
120	P_2	0.03	135	135	120	110
110	P_1	0.02	140	135	130	120
100	P_0	0.01	145	140	131	131

Note: some quarters excluded for clarity

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Gas Incremental Capacity Release Process
IECR worked example (3)

- Identify first step for which demand >= supply

Available	Price Step	Price	Q3	Q4	Q5	Q9
150	P_5	0.06	120	120	110	100
140	P_4	0.05	120	120	110	100
130	P_3	0.04	130	130	120	100
120	P_2	0.03	135	135	120	110
110	P_1	0.02	140	135	130	120
100	P_0	0.01	145	140	131	131

Note: some quarters excluded for clarity

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Gas Incremental Capacity Release Process
IECR worked example (4)

- Allocate at lowest step where demand <= 130

Available	Price Step	Price	Q3	Q4	Q5	Q9
150	P_5	0.06	120	120	110	100
140	P_4	0.05	120	120	110	100
130	P_3	0.04	130	130	120	100
120	P_2	0.03	135	135	120	110
110	P_1	0.02	140	135	130	120
100	P_0	0.01	145	140	131	131

Note: some quarters excluded for clarity

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Gas Incremental Capacity Release Process
IECR worked example (5)

- Calculate NPV of incremental revenue

	Q3	Q4	Q5	Q9
Capacity to release	30	30	30	20
Clearing price	0.04	0.04	0.02	0.02
Days per quarter	92	91	91	91
Incremental revenue	1.10	1.09	0.55	0.36
NPV of incremental revenue	6.63			

Note: some quarters excluded for clarity

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Gas Incremental Capacity Release Process
IECR worked example (6)

- Compare NPV to 50% of project value

	Q3	Q4	Q5	Q9
Capacity to release	30	30	30	20
Clearing price	0.04	0.04	0.02	0.02
Days per quarter	92	91	91	91
Incremental revenue	1.10	1.09	0.55	0.36
NPV of incremental revenue	6.63			
50% of project value	6			

Note: some quarters excluded for clarity

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Electricity Long-Term Entry Auction Strawman
Product and process

- All long-term entry access rights to be allocated by auction
- Long-term product would be:
  - Annual blocks of capacity
    - Consistent with existing annual product
  - Released on a zonal basis
    - Capacity would be assigned to nodal agreements, but would be shareable within zone
- Proposed to hold auction annually, to release capacity from following April
  - Likely to be held in winter
    - Locational charge would be set to be used as reserve price
    - Residual charge would be set after auction to aid correct revenue recovery
- Capacity would be released for whichever years demanded
  - But interaction with zonal stability

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Electricity Long-Term Entry Auction Strawman
Allocation and auction design

- Available ("baseline") entry capacity would be defined for each zone
- Open auction with monotonic bids cleared at step prices
- In constrained period, capacity would be allocated to lower of limit of baseline capacity and maximum demand at appropriate price step
- In unconstrained period, demand at higher price steps may trigger release of incremental capacity if a regulatory test passed
  - Test NPV of Incremental Revenue against Project Cost
- Capacity allocated would be underpinned by user commitment, in form of liability to pay charges associated with accepted bids and requirement for appropriate financial security

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Auction Design
Cleared vs pay as bid

- Pay as bid auctions recover the full value that bidders place on the product
- Cleared auctions give bidders some protection from overvaluing the product reducing the effect of winners curse.

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Auction Design
Open vs Closed

	Efficiency	Entry	Collusion
Open	Open auctions are more likely to allocate capacity to bidders who value it the most	New entrants may be deterred by stronger bidders	Can create conditions which facilitate collusion
Closed	Bidder who values capacity most may not place the highest bid	New entrants may be encouraged by the uncertainty of who will win	Less susceptible to collusion

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Electricity Long-Term Entry Auction Strawman
Reserve prices

- Reserve prices would be set on a zonal basis
  - Users would not be paying less than a charge reflective of long-term investment costs
- These would be:
  - Based on the wider locational element of current generation TNUoS charges
  - Set for the next 5 years
    - Subsequent years would use the fifth year
  - Use baseline capacities
    - Scaled nationally by demand
    - Allocated nodally by scaling by Local Connection Capacity
    - Previously released incremental capacity would be added to baseline capacity in relevant years

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Electricity Long-Term Entry Auction Strawman
Step prices and project costs

- 20 step prices would be set in each zone in 2.5% increments over baseline (to 150% of baseline capacity)
  - Calculated by increasing relevant baseline in reserve price model by 2.5%
  - Scaling down to national demand would correspondingly decrease generation in other zones
- Project costs could be based on UCAs in licence
  - Likely to be relatively few new zones
  - Alternatively could derive trigger costs from prices
- Incremental capacity would be released where NPV of incremental revenue exceeded 50% of project cost

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Electricity Long-Term Entry Auction Strawman
Constrained, demand less than supply

Supply		Demand	
Available (MW)	Price Label	Price (£/kW)	Max Bid Capacity (MW)
5625	P_5	10.50	4050
5500	P_4	10.40	4550
5375	P_3	10.30	4550
5250	P_2	10.20	4700
5125	P_1	10.10	4900
5000	P_0	10.00	4900

Price P_0 Unsold 100

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Electricity Long-Term Entry Auction Strawman
Constrained, demand exceeds supply

Supply		Demand	
Available (MW)	Price Label	Price (£/kW)	Max Bid Capacity (MW)
5625	P_5	10.50	4200
5500	P_4	10.40	4700
5375	P_3	10.30	4800
5250	P_2	10.20	5250
5125	P_1	10.10	5500
5000	P_0	10.00	6000

Price P_3 Unsold 200

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Electricity Long-Term Entry Auction Strawman
Unconstrained, demand exceeds supply

Supply		Demand	
Available (MW)	Price Label	Price (£/kW)	Max Bid Capacity (MW)
5625	P_5	10.50	4200
5500	P_4	10.40	4700
5375	P_3	10.30	4800
5250	P_2	10.20	5250
5125	P_1	10.10	5500
5000	P_0	10.00	6000

Price P_2 if NPV test met

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Electricity Long-Term Entry Auction Strawman
Regulatory test example (1)

- Try to release additional 250MW from Year 5

Available	Price Step	Price	Yr5	Yr6	Yr7	Yr8
5625	P_5	10.50	4200	4450	3950	4150
5500	P_4	10.40	4700	4950	4450	4650
5375	P_3	10.30	4800	5050	4550	4750
5250	P_2	10.20	5250	5500	5000	5200
5125	P_1	10.10	5500	5750	5250	5750
5000	P_0	10.00	6000	6250	5750	5950

Note: further years would be considered

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Electricity Long-Term Entry Auction Strawman
Regulatory test example (2)

- Compare NPV to 50% of project value

	Yr5	Yr6	Yr7	Yr8
Capacity to release (MW)	250	50	250	200
Clearing price (£/kW)	10.20	10.30	10.10	10.20
Incremental revenue (£m)	2.55	0.52	2.53	2.04
NPV of incremental revenue	6.27			
50% of project value	5			

- 250MW of incremental capacity would be released

Note: further years would be considered

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Electricity Long-Term Entry Auction Strawman
Lead times and buyback

- National Grid as GBSO would nominate start of unconstrained period for each zone for each auction
  - Arrangements for TO nominations to GBSO would be developed in STC
  - Incentive arrangements may apply outside of CUSC
    - E.g. gas permit scheme
- Firm access rights would apply from start of booking period
  - Necessary to develop capacity buyback product?
  - Funding of energy and capacity buybacks would be considered outside of CUSC
    - May be appropriate to incentivise TOs

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Electricity Long-Term Entry Auction Strawman
Negative zones and physical participation

- Reserve prices in many zones are likely to be negative
- Generators could bid progressively less negative prices
  - Generators would continue to be paid based on their export over the winter period in question
- Risk that capacity could be sterilised by bidders with little or no intention of running (or ability to) would be avoided by constraining bids to CEC or local capacity level due to be held during relevant period
- Aside from Negative Zones, physical participation may increase liquidity of trading but at risk of poor investment signals and potential unused capacity, as well as gaming

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Electricity Long-Term Entry Auction Strawman
Under- / Over-recoveries

- Anticipated that over-recoveries would be most likely (assuming a reserve price), but under-recoveries would also be possible
- These would be resolved via the residual, maintaining the existing 73/27 split
- Currently £50m locational (£175m-£125m), £315m residual
  - Most extreme under-recovery would result in a £175m (56%) increase in residual
  - Potential for over-recovery is unlimited, but would require a 630% increase in current locational revenue to fully offset residual
  - Although unlikely, would a negative residual be appropriate?
  - Alternatively, could:
    - Discount demand residual – but would violate 27/73 split
    - Discount BSUoS – but would be transferring money from TO to SO price control

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Electricity Long-Term Entry Auction Strawman
Application process

- Wider access rights would be explicitly de-linked from local connection
  - Wider access rights would be auctioned once a year
- Proposing that new connectees would apply at least 3 months before the annual auction to get an offer for a local connection
- This offer could be held open until the resolution of the auction process, and the user would have the option of accepting (or otherwise) the local connection offer dependent on the outcome of the auction
- Potential link to annual application windows under the offshore regime

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Electricity Long-Term Entry Auction Strawman
Transition

- All existing capacity would be reallocated
  - What is the appropriate forum for the property rights debate?
- Initial auction would be held in winter 2009/10 to allocate capacity from 1 April 2010
- System is currently planned to accommodate a proportion of total TEC released
  - Implies initial baseline should be less than sum of existing TEC
  - Or that additional cost may be incurred in releasing total TEC
- Other issues with baselines:
  - How would existing over-booking in Scotland be resolved?
  - Calculation in unconstrained zones
  - Treatment of planned reinforcements during transition
    - User commitment would be removed by user relinquishing access rights

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Notes on Auctions

After the meeting last week I decided to have a look at some of the literature on auctions. I pulled out the paper by Binmore and Klemperer on the 3G auctions[1]. These chaps were part of the team that developed the auction process and so the paper is generally positive. They discuss the process of developing auctions and I found some of their comments very helpful. As these guys are very well respected in the area I think that we ignore their advice at our peril. I've tried to summarise below some of the main points that resonated with me. This is not meant to be a full overview of the paper. I recommend reading the conclusions of the paper as it gives 'lessons learned'. The auction process is also discussed in the book 'The Undercover Economist' by Tim Harford which describes some of the things that can go wrong in a badly designed auction.

Key Quotes/Points

- 'A one size fits all is a very bad principle in auction design'
- 'A well-designed auction is the method most likely to allocate resources to those who can use them most valuably'
- 'Of course companies are taking huge risks in bidding in an auction'
- 'They are buying into a lottery that might result in huge losses or huge gains'
- When there are too few bidders, an auction may not be the best approach
- The aims of the auction need to be well-understood before it can be designed
- The auction design team involved a large number of experts
- The auctions process was tested thoroughly using computer simulations and laboratory experiments with volunteers
- Other 3G auctions in the rest of Europe produced much lower incomes
- Auction literature normally discusses informational issues but industry structure is more important in designing the auction
- 'The really bad mistake in running an auction is just to take an auction design off the shelf'
- 'Auction design is a matter of 'horses for courses', not one size fits all; each economic environment requires an auction design that is tailored to its special circumstances'
- Unless they are well-designed, auctions can be open to collusion and may not be good for new entrants
- 'Starting the planning early was invaluable in giving us time to carefully think through and test our ideas'

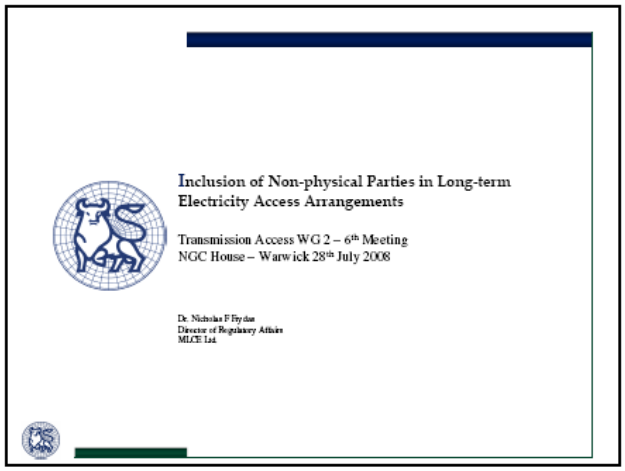
My Views

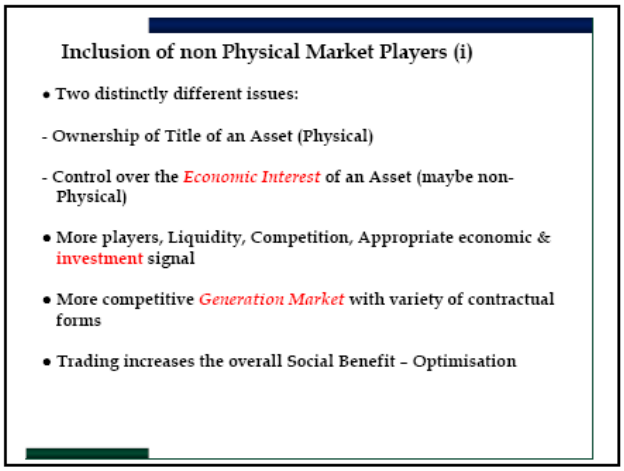
The authors of this paper are recognised experts in the area of auction design. I am not an economist and therefore need to defer to them. After reading this and a couple of other articles I feel that as a group we do not have the skills or the time to design and test an auction and it would be irresponsible of us to adopt this approach. There are two ways forward that I can see. The first is to spend time and money on employing economists to design and test the process for us. This is likely to be expensive and it is not clear that there is definitely an advantage of the auction approach in the longer term. The alternative is to remove CAP166 from the table and focus on CAP165 for long-term allocation of rights.

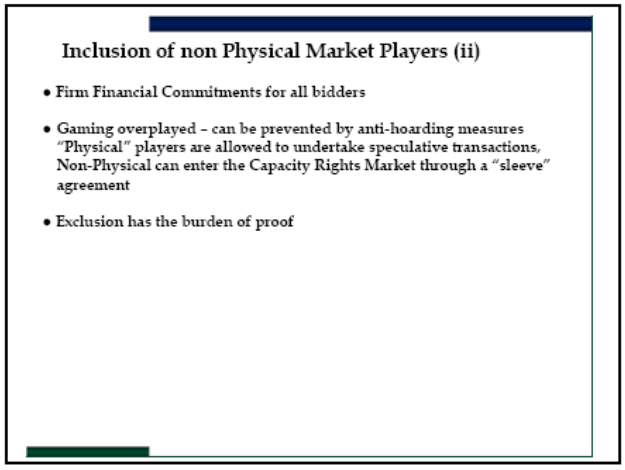
[1] Binmore K and Klemperer P, The Biggest Auction Ever: The Sale of the British 3G Telecom Licences (http://www.economics.ox.ac.uk/index.php/staff/klemperer/)

C McClay, British Energy. July 2008

Meeting Six – 28th July 2008







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Observations on the Nature of Access Rights

28 July 08

Stuart Cook
Director - Transmission

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Factors which will guide our thinking if we asked to decide on "access rights"

Our primary duty – "to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition".

In no particular order, we will consider factors including the need to:

- Contribute to the achievement of **sustainable development**
- **Security of supply** - secure a diverse and viable long-term energy supply.
- Be sensitive to **expectations** of licence holders
- **Avoid undue discrimination**
- Reflect **legal constraints**

The move from the MCUSA to CUSC opened the possibility for change

CAP043 – Transmission Access (Definition) (2003)- When parties become CUSC signatories this is on the basis that the CUSC can be subject to change following due process

We are open to views which are legally robust and consistent with our duties

2

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There are circumstances where it is unlikely to be appropriate to change "access rights"

In the case of future rights ...

Where parties have made a non-reversible financial commitment, and where a change in rights might:

- Undermine sustainable development
- Undermine security of supply
- Conflict with the expectations of licence holders
- Result in undue discrimination
- Be open to legal challenge

→ **Enduring Access Arrangements**

We will work to make the enduring access arrangements as "future proof" as possible (recognising that HMG and European policy can change)

But, currently, we do not believe these factors apply to so called "evergreen" rights

3

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We have long considered rights under the CUSC to be unclear . . .

- **Transmission access and losses under NETA (2001)** - *A further concern is that rights made available to participants to use the transmission system (access rights) are **not well-defined***
- **TPCR4 Third Consultation (2006)** – *we would prefer to move towards a system which…**clearly defines** the access rights that users will receive*
- **CAP142 – Temporary TEC exchanges (2007)** - *We therefore think that it is important to question **whether the rights and obligations associated with existing access products are sufficiently well defined** to allow the development of a well-functioning traded market*
- **TAR Call for Evidence (2007)** - *it is not obvious that the industry codes provide a **clear definition** of the rights associated with TEC and that it may be inappropriate for TEC holders to consider they hold an enduring property right to use the transmission system*

4

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. . . there are features of the existing rights which suggest they are not "evergreen" . . .

There is no matching of rights and obligations - financial commitment is not aligned with the longevity of the underlying investment

- Users are only required to commit to one year of liabilities
- Users can decrease TEC not less than five business days prior to the 30 March (CUSC, §5.6)
- Users are only required to give six months notice before disconnection CUSC (CUSC, §6.3)
- No scope for meaningful trading of future TEC

What Ofgem has said in the past

- **Transmission access and losses under NETA (2001)** - *rights to be traded must be defined in a way which ensures that … reflects the **temporal and spatial nature of transmission constraints**.*
- **CAP043 – Transmission Access (Definition) (2003)** - *TEC defines a generator's maximum allowed export onto the System **in a financial year***
- **CAP068 – Competing requests for TEC (2004)** - *Ofgem considers that the existing first come first served mechanism for TEC applications and the granting of the same level of access right to a party **in the subsequent year** once TEC is purchased ….*
- **TAR Seminar (2008)** - *Existing generators **do not have "evergreen" rights** to the system*

5

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. . . and "evergreen rights" do not appear consistent with wider policy interests

- Existing arrangements appear to favour incumbents over new entrants
  - Can act to inhibit new, unrelated generation
  - When times are good incumbents benefit, when bad they can simply hand back rights or mothball to save money
- If rights are enduring, how long do they last?
  - LCPD opted-out plant?
  - Decommissioned nuclear plant?
- Scope for plant to jump the queue by securing an extension

We are open to views which are legally robust and consistent with our duties

6

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Observations on the Merits of Auctions

28 July 08

Stuart Cook
Director - Transmission

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The use of auctions has sound theoretical underpinnings

- *In reality with market imperfections, auctioning a product is the best way of ensuring efficient allocation, and revealing diffusely held information in multi-round systems* (Professor Newbery 2002)
- *The simplest explanation of the continuing popularity of auctions is that auctions often lead to outcomes that are efficient and stable* (Professor Paul Milgrom – Stanford University, 1987)
- *There are gains to using a well-designed auction* (Dr Valeen Afualo and Dr John MacMillan – University of California, 1996)
- *Auction theory is one of economics' success stories. It is of both practical and theoretical importance: practical importance, because many of the world's most important markets are auction markets, and good auction theory has made the difference between successful auctions and disastrous ones* (Edgeworth Professor Paul Klemperer – University of Oxford, 2001)
- *Well-designed auctions work well for allocating idiosyncratic properties efficiently* (Professor David Newbery – University of Cambridge, 2002)
- *Auctions are being used increasingly to discover price and determine allocations* (Professor Lawrence M Ausubel – University of Maryland, 2004)
- *A good auction design promotes both an efficient assignment of rights and competitive revenues for the seller* (Professor Peter Cramton – University of Maryland, 2007)

8

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Where are auctions seen to work well?

- **Balancing Mechanism** –*an auction of the right to generate more or less than planned* - a type of Dutch auction where the cheapest bid/offer is accepted and dispatched (subject to dynamics and constraints)
- **EU ETS** - in January 2008, the European Commission proposed a number of changes to the scheme, including...a turn to auctioning a greater share (60+ %) of permits rather than allocating freely. Auctioning seen as the answer to over-allocation and inherent windfall gains in phase 1
- **Electricity interconnector** usage in Europe
- **Auction of generation capacity** in France and elsewhere

Other Examples
- Property
- Financial instruments
- Mobile phone licences
- Water
- Pollution permits
- US radiospectrum and UK bandwidth
- Business-to-business autoparts auctions
- Ebay!
- Gas!

9

ofgem Promoting choice and value for all gas and electricity customers

How else could it be done?

If we accept that there will be scarce capacity (at least in the short term) how else can this be allocated in an equitable manner?

To misquote Sir Winston Churchill:

"Indeed, it has been said that auctions are the worst way of ensuring efficient allocation, except all those other forms that have been tried from time to time."

The challenge is the design

10

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Some potential lessons from other auctions

- Design it to achieve the objectives

- Build in a process to allow price discovery / transparency
- Minimise transaction costs
- Keep it simple - complexity undermines the benefits. But auctions do not have to be complex:
  - A lot of auction complexity is centred around minimising the risk of collusion
  - But, unlike other auctions e.g. 3G, the aim is not to maximise the revenue of the seller

11

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Promoting choice and value for all gas and electricity customers

Objectives of a long-term entry capacity auctions regime

Transmission Access Working Group 2
Meeting 6, 28th July 2008

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Long-Term Entry Capacity Auctions
Objectives (1)

- The primary objective of long-term entry capacity auctions regime is to implement a mechanism to allow parties to signal both volume and price. This means that:
  - In the constrained period, scarce capacity can be allocated to those parties that value it most; and
  - In the unconstrained period, greater flexibility can be given in the provision of an economic justification for the release of additional capacity.
- A further overarching objective is that the process in both periods should be consistent, such that the boundary between the two can be flexed.

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Long-Term Entry Capacity Auctions
Objectives (2)

- A final objective is that parties booking long-term capacity should be prepared to pay at least a cost-reflective charge for it (i.e. there should be a reserve price). If parties are not willing to pay such a charge, capacity should be held back and released in the short-term.

Note that these objectives are in addition to those for the user commitment that would result from the temporally defined bookings of capacity given by a long-term entry capacity auctions regime.

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Long-Term Entry Capacity Auctions
Implications of objectives (1)

- Objective of allowing parties to signal both volume and price in both the constrained and unconstrained periods implies an auction in all timescales
- This also meets the objective of being able to flex the boundary between the two periods
- However, other arrangements might be simpler?
  - Should simplicity be an objective?

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Long-Term Entry Capacity Auctions
Implications of objectives (2)

- Objective of allocating scarce capacity efficiently most likely to be achieved in an open auction

...the efficient bidder generally wins an ascending auction, because if a high-valuation bidder is initially outbid it can always raise its bid later. By contrast, a sealed bid auction... is not generally efficient. The reason is that bidders cannot revise their initial bids, and a bidder with a lower valuation may therefore win at a price that a bidder with a higher valuation could have beaten but did not because it was hoping to win more cheaply. (Paul Klemperer, Competition Commission, 2005)

- But strong incumbents can deter entry
- Availability of information can facilitate collusion
  - This is not an issue in the unconstrained period?
  - Is it an issue in the constrained period?

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Long-Term Entry Capacity Auctions
Implications of objectives (3)

- Final objective of not selling below an investment cost reflective level in long term auctions implies a reserve price
  - Should obligated baseline capacity be released with a zero reserve price in the short-term?
- The strawman previously presented by National Grid is not inconsistent with these objectives
  - Same auction solution for both periods
  - Open, cleared price auction
  - Zonal reserve prices
  - But reasonably complex

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Zonal interaction in long-term entry capacity auctions

Transmission Access Working Group 2
Meeting 6, 28th July 2008

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Long-Term Entry Capacity Auctions
Zonal interactions – introduction

- CAP166 assumes that zonal baseline capacities would be defined
- Capacity would be allocated to the limit of these baselines
- If there was unsold capacity in one zone and residual demand in another, there may be a need to move unsold capacity between zones
- Equally, even if there was no unsold capacity, users in one zone might value capacity more than those in another zone
  - In this situation, should capacity should be moved?

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Long-Term Entry Capacity Auctions
Zonal interactions – gas regime

- "Substitution" is the permanent moving of unsold obligated capacity in the unconstrained period
- A "Transfer" is a temporary move of previously unsold obligated capacity in the constrained period
- A "Trade" (in this context) is the sale of previously sold capacity at an entry point
  - Initial allocation is to recipients at same entry point; and this is
  - Followed by allocation to highest bidders at other entry points
- In the long-term, baseline capacities are obligated at each entry point, so would not sell baseline capacity for which there is demand from one entry point to a bidder at another entry point (even that bidder would value it more highly)
  - If permitted in electricity, this might be termed "Inter-zonal competition"

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Long-Term Entry Capacity Auctions
Zonal interactions – substitution

- National Grid initially envisaged that Substitution would be a subsequent evolutionary development of the CAP166 regime
- However, zones likely to be smaller than originally envisaged
- Therefore, need to include substitution in CAP166?
- Unsold zonal baseline capacity could be allocated to bidders with initially unfulfilled bids (in excess of zonal reserve price) in other zones
  - Would need to prioritise recipient bidders (either by highest bid or by greatest differential between bid and relevant reserve price)
  - Would need to calculate exchange rates

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Long-Term Entry Capacity Auctions
Zonal interactions – inter-zonal competition

- Should parties be allowed to compete for capacity between zones?
  - i.e. Parties in Zone 1 might be prepared to bid more than the reserve price for capacity, but a party in Zone 2 might value it more
- Might give economic efficiency but would give significant uncertainty for bidders
- If to be included, two potential options
  - Allow party from zone 2 to compete for capacity in zone 1
  - Allocate capacity by considering bids nationally

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Long-Term Entry Capacity Auctions
Zonal interactions – potential methodology

- Provisionally allocate capacity on a zonal basis
- For initially accepted and unfulfilled bids, calculate difference between bid and relevant reserve price
- Calculate inter-zonal exchange rates
- For nationally top ranked unfulfilled bid, calculate whether differential between bid and reserve price multiplied by relevant exchange rate exceeds that for initially accepted bids in other zones
- If so, capacity would be reallocated
- Test next bid

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Meeting Seven – 7th August 2008

Alternative approach to long-term capacity auctions

Simultaneously cleared nodal auction

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Introduction

- Generation zoning work suggests long-term stable zones will be small, and in some cases single nodes
- Long-term capacity auction strawman envisages….
  - Baseline capacity established for each zone
  - Users in zone compete for capacity in auction
  - [Substitution, transfer & trading arrangements between zones if necessary]
- In order to ensure all issues wrt long-term auctions are explored, a nodal auction strawman is required

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Nodal auction strawman

- Annual auction for blocks of capacity made up of whole (financial) years
- Users at all nodes bid for entry capacity
  - e.g. £20/kW up to 600MW in 2010, etc.
- SO accepts bids in price order, whilst honouring system constraints at peak
  - Need to consider both intact and credible outage conditions
- Transmission system reinforcements triggered if (additional bid revenue)>(reinforecement cost)

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Simple example

- 7 node model with 8 generators bidding for capacity
- Single year
- Optimisation seeks to maximise SO profit
  - =(Bid revenue)-(Reinforcement cost)
- Optimisation can vary:
  - Bids accepted
  - Capacity of each circuit
  - Voltage angles
- With the following constraints:
  - Circuit flow < Circuit capacity
  - Mismatch = 0 (Kirchoff's Law)
  - Baseline<Capacity of each circuit<SO defined Limit
  - 0<Bids accepted<User defined limit

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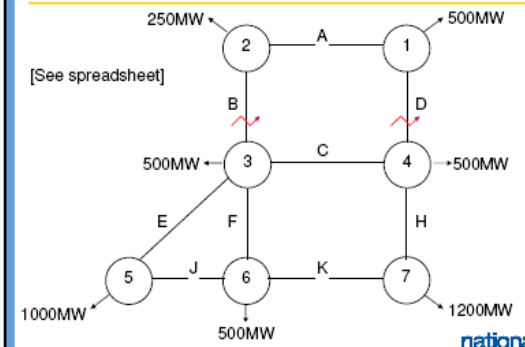
Simple example
The network

[See spreadsheet]



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Meeting Eight – 21st August 2008

Simultaneously cleared auction

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Introduction

- All users would bid for nodal (or zonal) capacity
- Capacity would be allocated by an optimisation which seeks to maximise bid revenue subject to system constraints
- Incremental capacity would be triggered if test is met
  - e.g. NPV(add bid revenue) >= 50%.NPV(reinf cost)
- Open, ascending multiple round, pay as bid auction envisaged

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Who am I competing with?

- This type of auction may make it difficult for participants to understand who they are competing with
  - Not always intuitive on small example network, likely to be even more challenging with large network – Therefore, it may be difficult to achieve price discovery
  - Q: Is this always the case if you want to include inter-nodal (zonal) effects?
- This may also lead to volatility between rounds
- Action: Can we come up with a set of system constraints which capture the majority of capacity bottlenecks, but are simple and transparent?

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What is the baseline?

- How much capacity should be offered in the auction, bearing in mind the need for a plant margin and current SQSS assumptions?
- Interaction with SQSS review
- Action: How would a capacity margin be modelled?
  - Scale demand up?

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I want capacity across multiple years

- If you treat all years separately, you may get capacity allocated to a power station in some years but not others
- Optimising across a number of years means a huge optimisation problem, with lower transparency
- Action: Create two strawmen?

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How will system expansion be modelled?

- The current access queue suggests that capacity will not be unconstrained within [4] years
- Modelling system expansion constraints means that incremental capacity will be allocated to those that value it most
- How should it be done?
  1. Should we add planned reinforcements to the model in future years?
  2. Should we only model system expansion constraints in future years
- Action: Compare 1&2

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Mrs Sarah Hall
Technical secretary
TAR – WG CAP165-166
National Grid House
Warwick

19 August 2008

Dear Sarah,

Inclusion of Non-physical Parties in Long-term Electricity Access Arrangements

I am pleased to have the opportunity to respond to the above deliberations under WG 2 (CAP 165-166). The position below reflects not only the opinion of Merrill Lynch Commodities (Europe) Trading (MLCE) but of several other active wholesale energy traders in the UK power market the opinion of whom I seeked before drafting this response.

In principle the exclusion of "Non-physical Parties" in proposed "Long-term Electricity Access Arrangements", is discriminatory and against the spirit of a liberalised competitive market, in which different participation capacities bring forward increased liquidity, competitiveness and efficiency. Both in terms of the EU Treaty guarantees of freedom of investment, and in terms of the enshrinement of objectivity and non-discrimination in transmission access as principles at the core of the internal electricity market directive, the *a priori* exclusion of one class of bidder would seem highly questionable under European law. From the outset the question is phrased the wrong way around. There should be a starting assumption of inclusion with the need to prove the case for exclusion otherwise there is more risk of discrimination.

In competitive energy markets there is a difficulty to legislate between "physical" and "non-physical" players as there are two distinctly different issues between:

- Holding the title of a physical Asset (for example a power station)
- Controlling the economic interest of the Asset (for example a Tolling Agreement)

with both classes of Market Players potentially taking either role and therefore having a vested interest into System Access arrangements.

Allowing all parties to participate in access arrangements, improves competition and liquidity for capacity so that where there is a scarce resource, a useful investment signal is developed. Different capabilities may facilitate the entry to the Market of new players particularly if they are small in size and cannot handle the Transmission Risk. Also, the generation market becomes more competitive as a variety of contractual forms are allowed to exist. For example, tolling arrangements and optimisation for merchant plants where capacity is managed by the "off-taker" who may very well be a "Non-Physical" player. Preventing broad access only acts to further cement the vertically integrated model that the UK has drifted towards, and has recently come under fire as not adequately "competitive", by creating a cosy club of like minded interests that will not compete against each other for capacity.

At this point the case of Australian policy deliberations on "Emission Allowances Auctions" should maybe brought into attention:

In a recent Australian policy document the issue of narrowing participation was dismissed, the issue being whether participation at auctions should be universal or restricted to "liable – CO2" entities only. Universal participation would allow non-liable entities, including financial intermediaries, to participate in auctions. Feedback from some entities has indicated concern that the participation of non-liable entities in auctions may result in speculation and the bidding up of prices.

The Australian Policy Decision concluded that: "An auction is more likely to deliver accurate price signals if the field of bidders is competitive. Smaller liable entities may need to use the services of specialist financial intermediaries to help them manage their emissions obligations over the year, as it would be too expensive and inefficient for them to directly participate in auctions."

Perhaps it is worth adding to the commercial arguments the fact that the financial transmission rights markets in the US also permit non-physical players to participate. The reason for that is exactly that financial players, if subject to the same collateral and anti-hording requirements as the rest of the market participants, can bring additional liquidity to the market and offer risk management services to smaller participants that may not have the same capability.

The risk of a 'non-physical' player buying access rights and triggering investment costs that may not be used is no higher than it is for any other party. Obviously Access Arrangements will be designed around some "anti-hoarding" measures, by which access rights may be either transferred in secondary trading or lost if not used by an appropriate deadline. The firm financial commitment for buying capacity and securitising the subsequent TNUOS charges is a real cost for all bidders.

The discussion on gaming is also overplayed. Capacity speculation within networks is not viable when there are appropriate anti-hoarding measures in place, and in any case there can be no provision on which class of Market Player may trade purely on speculative basis. On the other hand no legislation can prevent non-physical players acting on the capacity market through a physical player and a "sleeve" arrangement. Taking as an example the UK Gas Market, abusive squeezes in the gas capacity market have not worked as capacity simply becomes free for those that can physically utilise it. There is no case of abusing gas shippers following the introduction of the auction mechanism. Again this argument on gaming must be proven, not disprove.

Transmission Access Review represents a significant overhaul of the UK Electricity Market and all possibilities should be considered before the scope is narrowed in line with particular interests. The argument that because of current arrangements, only physical parties can apply for Transmission Entry Capacity (TEC) and therefore, in order to allow non-physical parties to trade access, a new category of non-physical user would need to be included and the CUSC would need to be substantially rewritten to separate access rights from users' obligations, is not sufficient to justify an exclusion. TAR is a major exercise and if it requires substantial changes to CUSC so be it. The Technical Obligations and Capabilities (in Connection Conditions of the Grid Code) for which the physical players are rewarded (Ancillary Services etc.) should remain linked to physical generation equipment.

Nick Frydas

Meeting Nine – 4th September 2008

Simultaneously cleared auction - update

Questions from last meeting and further thoughts

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Modelling of transmission system constraints

- Can we come up with a set of system constraints which capture the majority of capacity bottlenecks, but are simple and transparent?
  - Transmission system design analysis ongoing to assess this
    - Interaction with work on pre-defined sharing zones
  - Identified further questions regarding the extent of local works
    - Two generators apply for local works in the same area
    - Works required to accommodate 1 generator takes 1 year
    - Works required to accommodate both generators take 5 years
    - We don't want to go to the trouble of designing an auction if we just move the f-c-f-s problem elsewhere!

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Capacity margin

- How would a capacity margin be modelled?
  - Current SQSS
    - In initial study:
      - Conventional generation modelled @ 100%
      - Wind generation modelled @ 72%
    - For 20% plant margin, scaling gen to meet demand achieves availability factors of:
      - Conventional – approx 83%
      - Wind – approx 60%
    - Go with this approach?
      - Model bid volume at 100% (conventional) or 72% (wind)
      - Allow Sum (bids) > Demand
      - Scale generation to meet demand
  - Revised SQSS
    - 1MW booking = 1MW reinforcement
    - Generation = demand

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Multiple years

- I only want capacity across multiple years
  - Auction round 1
    - User specifies minimum acceptable outcome in terms of number of years of access
      - E.g. A power station bids for 10 years of capacity, and indicates that the minimum acceptable solution is to have capacity allocated in 8
    - Perform a separate optimisation for each year
    - Assess results across all years
    - If minimum acceptable outcomes are not met, remove relevant power stations from all years
      - What if there are > 1? Remove furthest away first?
    - Repeat optimisation
    - Publish results
  - Auction round 2
  - Etc.

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System expansion

- How should system expansion be modelled?
  - Committed transmission system reinforcements included in model for future years
  - System design studies performed to calculate volume of additional capacity that could be made available in specified timescales if reinforcement cost is met

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Alternatives

- Treatment of system interactions
  - Ignore
    - Separate zones
  - Include
    - Simultaneously cleared
      - Nodal
      - Zonal
- Treatment of existing (baseline) capacity and incremental capacity
  - Separate
    - Assume unconstrained after [4] years
    - Auction for incremental capacity unnecessary?
  - Together
    - Model incremental capacity constraints

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Meeting Ten – 11th September 2008

Long-term entry capacity auctions

11 September 2008

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Agenda

- Options
  - Treatment of zonal interactions
  - Modelling of incremental capacity
  - Treatment of baseline and incremental capacity
  - Pricing
  - Treatment of multiple years
  - Treatment of capacity margin
- Issues
  - "Local" works interaction
- How do we move forward?
  - Can we populate top 2 or 3 straw men?
  - Another approach?
- Next steps

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Options 1
Treatment of zonal interactions

- Ex ante
  - Separate zones
    - Zonal interactions included in setting zonal baselines ex ante
    - Assumptions need to be made about demand in each zone
    - [Option to develop substitution, transfer and trade arrangements in the future]
- Ex post
  - Simultaneously cleared
    - Network demand and boundary capabilities modelled
    - Demand in each zone discovered from bids
    - Could be zonal [more transparent, less accurate] or (in the extreme) nodal [less transparent, more accurate]
    - Note: work ongoing to assess zonal option

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Options 2
Modelling of incremental capacity

- Assume unconstrained after [4] years
  - User commitment associated with binding auction bid means that only serious projects bid, and this volume can be accommodated in [4] years
- Model constraints on system expansion
  - Committed reinforcements included in baselines for future years
  - Transmission system design analysis performed ex ante by transmission licensees to establish reasonable rates on system expansion by boundary

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Options 3
Treatment of baseline and incremental capacity

- Separate
  - May simplify auction
  - Difficult to handle interaction between spare baseline capacity and incremental capacity
- Together
  - More complex
  - Consistent treatment of baseline and incremental capacity

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Options 4
Pricing

- Pay-as-bid
  - Users pay different prices for the same service
- Uniform price
  - Same price for the same service
  - Concern that market power leads to inefficient allocation
    - Self-correcting?

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Options 5
Treatment of multiple years

- Treat all years together
  - Most accurate, least transparent
    - Separate zones = ?
    - Simultaneous cleared – include all years in optimisation
- Separate treatment of each year
  - User specifies minimum acceptable outcome
    - User does not get the opportunity to increase bids in years in which they are not successful
  - For multi-year bookings, threshold no of years specified
    - E.g. users that are successful in 8 years out of 10, get the other 2 years?
  - Dynamic auction with no constraint on direction of bids
    - Allows users to increase bids for years in which they are unsuccessful
    - Auction may never close out!
- Note: for transmission, NPV test must look across multiple years

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Options 6
Treatment of capacity margin

- Current SQSS
  - SQSS capacity factors (e.g. 60% for wind; 83% for conventional) used in setting baselines (ex ante) or network model (simultaneous cleared)
- Revised SQSS
  - No scaling of generation behind export boundary
  - A number of studies (ex ante) or optimisation loadflows (ex post) are required with "slack" moved to import side of each boundary

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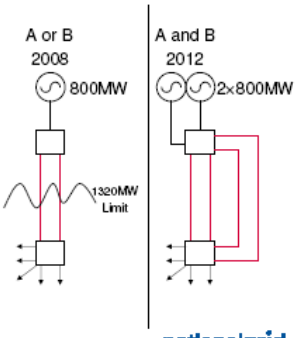
Issues
Local/wider interaction

- Options
  1. First-come-first-served for local connections
     - Simple
     - Makes wider auction more straightforward / transparent
     - Inconsistent with treatment of wider system constraints
  2. Include local capacity constraints in auction
     - Capacity to those that value it most
     - Auction more complex / less transparency
     - Makes it difficult for users to hold different levels of local and wider transmission access



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How do we move forward?

- Can we populate top 2 or 3 straw men?

1. Separate zones
   - Modelling of incremental capacity
   - Treatment of baseline and incremental capacity
   - Pricing
   - Treatment of multiple years
   - Treatment of capacity margin
2. Simultaneously cleared
   - Modelling of incremental capacity
   - Treatment of baseline and incremental capacity
   - Pricing
   - Treatment of multiple years
   - Treatment of capacity margin?
3. ?

- Another way?

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Next steps

- Comparison of straw men
- Oxera proposal

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Transmission Access: P166 Auction Design –Volume and Duration Model

Bill Reed

RWE
The energy to lead

Auction design objectives

- Economic and efficient investment in transmission system based on
  - Appropriate long term user commitment
- Auction design
  - "Best" price for product sold (transmission access)
  - Revenue recovery
- Non discriminatory entry arrangements

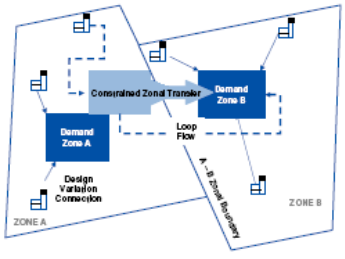
Start at the finish!– Outcomes for model (Illustrative)

		Liability for Charges									
	Charges	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Existing User	LOCAL										
	WIDER										
	CONSTRAINTS	Investment Costs Sunk – No Charge									
Incremental Capacity	LOCAL										
	WIDER										
	CONSTRAINTS	Investment Costs Sunk – No Charge									
"Return to Service"	LOCAL										
	WIDER						Investment				
	CONSTRAINTS	Investment Costs Sunk						Investment Costs Sunk			
New Capacity	LOCAL	Investment									
	WIDER	Investment									
	CONSTRAINTS					Investment Costs Sunk – No Charge					
Connect & Manage	LOCAL	Investment									
	WIDER		Investment								
	CONSTRAINTS							Investment Costs Sunk – No Charge			
Duration of liability for charges											

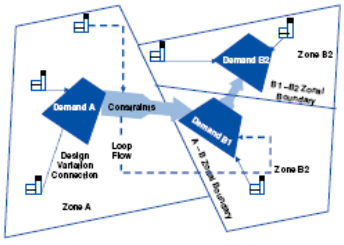
The problem

- Problems with multi round simultaneously cleared auction
  - Interaction between nodes/zones
  - Multi years
  - Price discovery (different demand curve at nodes)
  - Interaction between long run and short run
  - Product definition (TEC/CEC..)
  - Local, wider and non locational issues
  - Interaction with SQSS

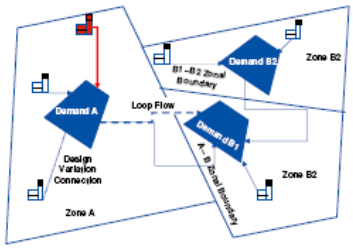
Auction Round 1 - Concepts



Auction Round 2 – Further Constraints



Auction Round 3 – Unconstrained!



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The Volume and Duration Auction Concept

- Annual auction based process designed to discover the nodal transmission charges
- NGET determines
  - long term cost reflective charges at the node (LRMC)
  - ex ante charge for cost of constraints (SRMC)
- Users have opportunity to accept the charges
- Accepted prices are "fixed" or known for duration

RWE

The auction

- Input: Users bids in form of volume (MW) and duration (years)
- SO evaluates bids received
  - Optimisation model based on ICRP approach for the whole system for duration of bids
- Cost-reflective charges derived for each node for each year
  - Nodal Local charge (£/MW)
  - Positive or negative nodal (or zonal) locational tariffs (£/MW)
  - Residual non locational charge (£/MWh)

RWE

Constraint costs (SRMC)

- Nodal based charge derived for each node for each year
  - Derived from Ex ante estimate of constraint cost (SRMC)
  - Based on ex ante assumption of bid/offer spread
- Options for charge
  - Fixed
  - Indexed
  - Contract for difference: one-way, two-way, capped, collared?

RWE

Multiple Rounds

- After first round:
  - Parties can accept offer or
  - Reduce volume and duration
- SO will then run a further optimisation
  - Accepted parties may see prices reduce to a "cleared" price
  - Accepted parties cannot see prices rise
- Auction ends when no further [significant] changes to volume or duration received?

RWE

Users perspective

- Users have opportunity to fix (hedge) the long run and short run costs of using the transmission system
  - Users can fix the local and wider elements of the locational tariff
  - Users can fix the residual tariff
- Users have opportunity to fix (hedge) the constraint charge
  - Users could accept risk to manage the variable constraint costs
- Users can understand the long term and short term costs at each node but over and under recovery mechanisms are important

RWE

SO/TO perspective

- Users acceptances for basis for revenue recovery
  - Fixed MW charges recover the long run marginal cost of investment in the transmission system
  - Constraint charge recovers the ex ante estimated short run constraint costs
- Over and under recovery mechanism required to ensure revenue adequacy
  - i.e. recovery of actual costs where they vary from the fixed LRMC and SRMC charges

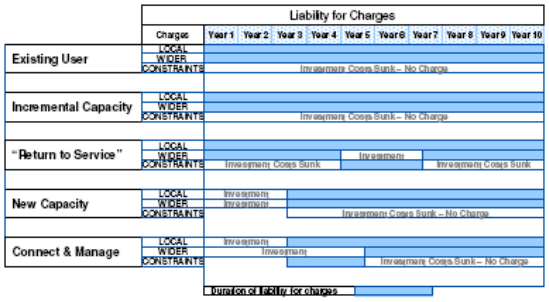
RWE

Over and under recovery

- Number of different options:
  - LRMC recovery through adjustments to non locational residual
  - SRMC shortfall recovery through non locational BSUoS or..
  - SRMC shortfall recovery through zonal locational BSUoS or..
  - SRMC surplus through relief from £/MWh cost
- Incentive scheme for SO/TO required for efficient management of over/under recovery

RWE

Outcomes… (Illustrative)



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Conclusions: The volume and price solution

- Resolves Interaction between nodes/zones
- Allows Multiples of years to be bid
- Enables price discovery (different demand curve at nodes)
- Solves the interaction between long run and short run
- Parties have a defined product (TEC/CEC..)
- Nodal model enables Local and wider issues to be determined
- System remains SQSS compliant

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Nature of user commitment

- Debate surrounds **how** to calculate not **why**
  - How: - cost reflective FSL, TNUoS multiplier, UCA…
- Why? To ensure user turns up and does what he says he's going to do!
- Under volume and demand model (and others?):
  - Manage pre commissioning liabilities through construction agreement – don't complete, don't connect, liable for "stranded" costs however calculated (as now)
  - Negative zones issue as above….liable for costs

RWE

User commitment – further thoughts

- If completed then close
  - Liability for TNUoS for duration of booking
  - Security issues but…recognise that licensed and consented power station has been built at the site
  - Someone will use it and use the transmission system…
  - Or else the power station (and transmission) is stranded
- Issue applies to all existing (i.e. completed) power stations
  - Including CCGT, coal, nuclear, LCPD plant, wind etc…

RWE

Meeting Eleven – 23rd September 2008

Developments to simultaneously cleared auction model

23 September 2008

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Agenda

- Revised 12-node spreadsheet model
- Simplified approach to dealing with multiple years
- Managing the network analysis required
  - Registration of interest
- Discussion around "close out" rules

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Revised 12-node spreadsheet model

- Revised spreadsheet model
- Example network used to demonstrate marginal overrun pricing in WG1 copied
- Developments
  - Inclusion of negative generator with zero cost at slack node allows generation > demand
  - Individual circuit ratings ignored – specified boundary constraints only
    - Suggested boundary constraints for part of the network (and associated issues) will be available 1 October
  - Attempt at an approach for multiple years
- Suggested further developments
  - Multiple generators at each node
  - Sensible build-up of generation in future years
  - Auction testing

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Dealing with multiple years Simplified approach

- Based on giving precedence to those that are willing to commit for long-term
- Firstly hold auction for [10] year blocks
  - Users indicate Start Year and Price/MW
  - Need to (separately) optimise each year in which capacity is booked
  - Users unsuccessful in any single year are removed
  - In subsequent rounds, users can optimise Start Year and Price/MW
- Then, hold auction for [5] year blocks
- Finally, hold auction for single years

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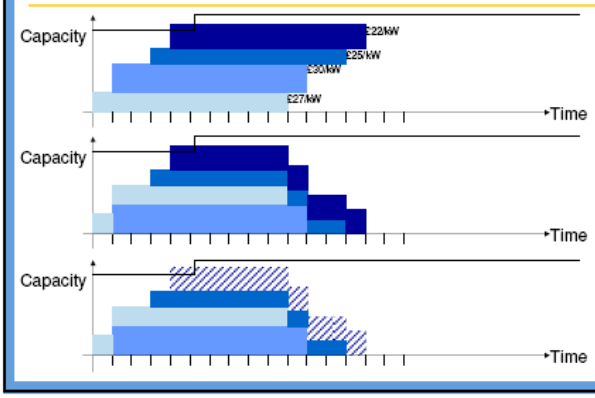
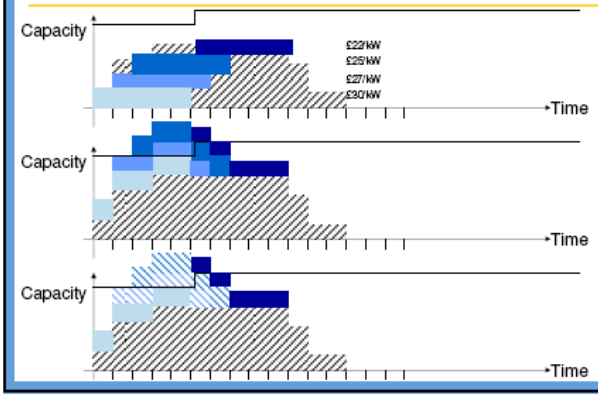
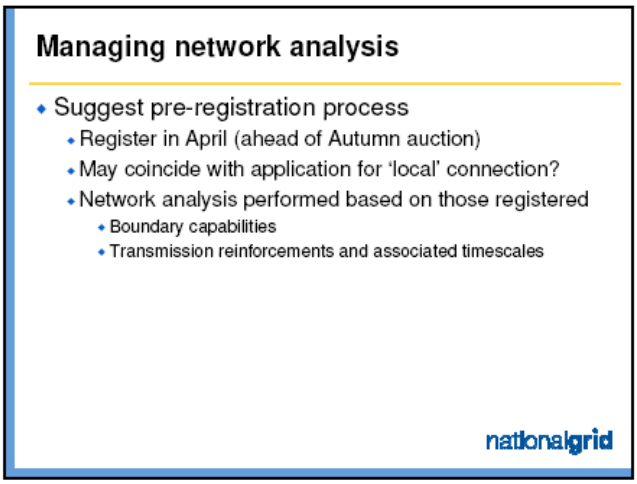
Auction for [10] year blocks



Auction for [5] year blocks




Managing network analysis
Suggest pre-registration process
Register in April (ahead of Autumn auction)
May coincide with application for 'local' connection?
Network analysis performed based on those registered
Boundary capabilities
Transmission reinforcements and associated timescales
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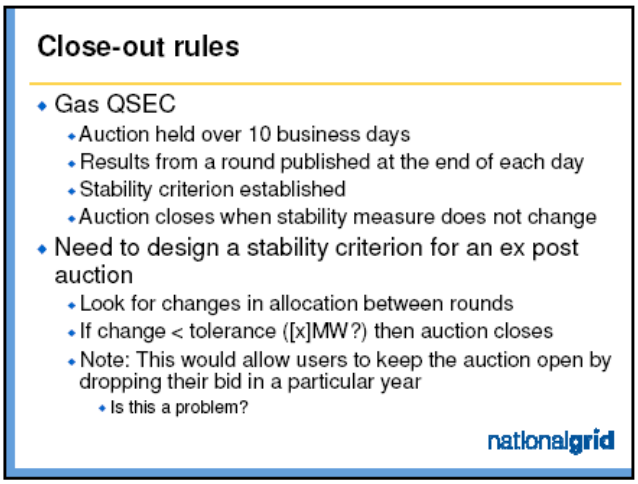
Close-out rules
Gas QSEC
Auction held over 10 business days
Results from a round published at the end of each day
Stability criterion established
Auction closes when stability measure does not change
Need to design a stability criterion for an ex post auction
Look for changes in allocation between rounds
If change < tolerance ([x]MW?) then auction closes
Note: This would allow users to keep the auction open by dropping their bid in a particular year
Is this a problem?
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Allocating Scarce Capacity Using the Simple Auction

Introduction

This note explores the use of the simple auction model for allocating scarce capacity (before all required reinforcements can be built) and highlights some issues with this approach.

Assumptions

- There is a separate auction for each zone in the system
- The volume of capacity available in a zone is allocated by National Grid and is known by participants ahead of the auction
- The auction is marginal and multiple rounds
- The purpose of the auction is to discover how much the participants in a zone value the capacity relative to each other
- The auction cannot discover how much a participant in zone A values capacity relative to a participant in zone B as each zone is independent
- As the auction in each zone is independent any over or under recovery in a zone is allocated back to the participants in that zone
- The auction closes when there are no further changes in bids

Auction Testing

This auction model can be tested using a simple thought experiment.

Imagine a zone with two participants (initial simplifying assumption) with only enough capacity for one participant. The auction is conducted under the above assumptions. Both participants will be willing to keep bidding up as they know that only a certain amount of revenue can be recovered in the zone and they will get any over-recovery back through the residual i.e. in the simple auction they will pay the same amount on out-turn whatever they bid.

The same argument can be extended to more than two players; we simulated the auction in with 3 people and got the same result.

The issue is that the auction is trying to find the relative value of capacity to participants in a zone rather than the absolute value. It's easy to say that you value it £1 more than someone else when you don't have to put your money where your mouth is.

Alternatives

The issue with the simple auction as described is that the cost recovery required in a zone is essentially pre-defined and so the costs to a participant are independent of their bid. Modifications to this process will now be considered.

Single Residual

In discussions within the auction sub-group it has been suggested that instead of smearing over-recovery back only to participants in the zone there should be a single recovery over all zones; this is what happens in gas auctions. However, in this auction we are dealing with the constrained period where the volumes available in each zone are allocated by National Grid, rather than the unconstrained period which is considered in the gas auctions. Smearing the residual across all players links the zones and implicitly compares bids in zone A with zone B; if a participants in zone A pay more it is implied that they value capacity more than those in zone B. However,

Cathy McClay, 22nd September 2008

the level of over or under recovery in a zone is driven as much by the initial National Grid allocation process as by the desire for capacity in a zone. This initial capacity could have been allocated between zones in a large number of ways. Participants should not be penalised if there is a shortage in the zone due to the allocation process.

A single residual is simply a cross-subsidy between participants in different zones and should therefore be avoided.

Single Round Auction

The auction will close if there is simply a single round with the participants putting in their best price. This does not remove the inherent defect that the price paid is not linked to the price bid. Participants could therefore simply enter the highest bid allowable.

Timed Auction

The process could be a multiple round which closes at a fixed time (known or unknown by participants). The rational approach in this auction is to treat it as a single auction and enter the highest bid allowable from the beginning.

Transfer of Capacity between Zones

If all the zones are independent, a single residual is simply a cross-subsidy between zones. An alternative might be to have the potential to transfer capacity between zones at the end of each auction round depending on the relative bidding between zones. However, this is likely to be complicated and would require detailed working up, something I have not attempted at this stage.

Summary

The key difference between the auction of entry capacity and standard auctions is that the total allowable revenue is known before the auction begins. Many of the benefits of auctions are removed before the process begins. If the absolute value of capacity to a participant is not considered in the auction then signals of relative value are reduced.

The simple auction as originally designed is flawed and will not deliver the required result as the process will not close. The alternatives considered here can make the auction close but at the expense of not delivering the intended objective of the auction. The easiest change is to have a single residual. However, this creates a cross-subsidy between zones; the outcome between zones is driven as much by the initial allocation of capacity as by the relative value of capacity to users in different zones.

A key message of this work is the importance of testing the auction design. A five minute simulation of the simple auction revealed that it didn't work quite as we expected. This testing is equally important for the nodally cleared auction.

Cathy McClay, 22nd September 2008

Meeting Twenty Three – 27th November 2008

CAP166: Capacity Auctions

Consultation Alternative:

Implementing Reserve prices

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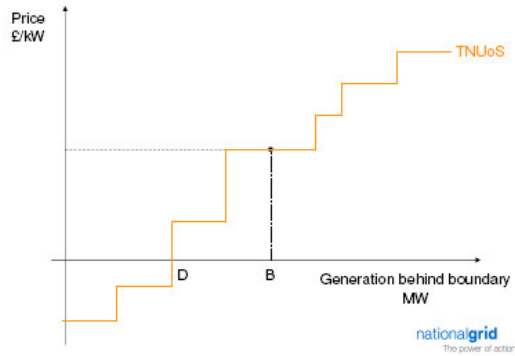
Boundary transmission supply function



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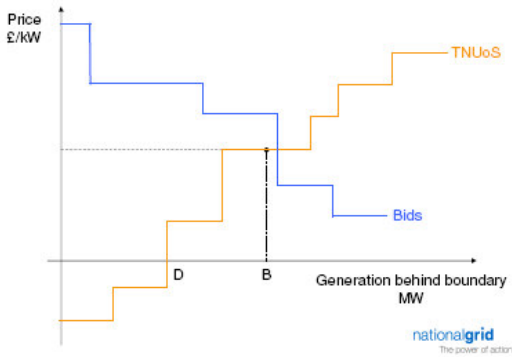
Boundary transmission demand function



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Objective function

Maximise [bid revenue – reinforcement cost]

- Reinforcement cost provided by transmission supply function
  - Boundary by boundary
    - Mapping of generation zones to boundaries is crucial
  - Based on TNUoS differentials for different boundary flows

4

Modelling

Zonal TNUoS tariffs broken down to SYS boundary TNUoS differentials

TNUoS boundary differentials modelled for baseline capacity only

- Example model did not reinforce Boundary B9
  - Plant in North England not meeting boundary reserve
  - This removes a need to reinforce B9, and lowers the effective reserve price for North Scotland plant
  - North Scotland bids accepted despite being below sum of reserve price
  - How do we model negative boundary differential associated with import?
    - Shift tariffs?
    - Restructure transmission supply function?
- Do negative TNUoS boundary differentials work?

5

CAP166: Capacity Auctions

Closure Rules

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Auction Stability

The Long Term Auction will close early if Stability is reached.

Stability is reached if in respect of any Annual TEC invitation date, the cleared price after 17:00 on that Annual TEC invitation date remains identical to the prevailing cleared price in respect of bids submitted by Users by 17:00 hours on the immediately preceding Annual TEC invitation date in all but [2 or fewer] [Charging Zone or Boundary] [and Financial Year combinations].

7

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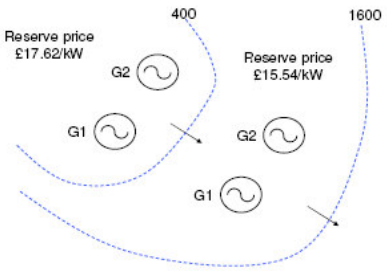
Closure Rules: Example



*Reinforcement not possible until 2015

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Closure Rules: Example

See Excel spreadsheet

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Closure Rules: Questions

Circumstances in which allocation changes but cleared price does not?

- Two users competing for capacity essentially swap bids

Do we need a minimum number of rounds?

Do we need a materiality test?

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Scottish Boundary Derogation

27 November 2008

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Derogation

1 PART OF THE TRANSMISSION SYSTEM FOR WHICH RELIEF IS GIVEN	2 NATURE OF RELIEF	3 DEROGATION PERIOD	4 DETAILED DESCRIPTION OF RELIEF GRANTED		
			ISSUE	INTERIM SOLUTION	LONG TERM SOLUTION
Cheviot Boundary transmission circuits • Eccles – Stella West • Strathaven – Harker • Relevant 132kV circuits from Galashiels	GB Security and Quality of Supply Standard ("GBSQSS") Design of Main Interconnected Transmission System Criteria Paragraph 4.1 – 4.13	31 March 2012	Unacceptable overloading of remaining circuits (under Planned Transfer plus appropriate Interconnection Allowance conditions)	Application of pre-fault constraints to generation in Scotland to permit compliance with GBSQSS Section 5 (Operational Standards). Review of GBSQSS planning criteria to ensure adequacy of assumptions made about wind generation when identifying background conditions used when assessing GBSQSS compliance.	Transmission system reinforcement works: • On the Cheviot boundary circuits to increase transfer capacity from Scotland to England to 2.86W. These works are planned for completion by end December 2010. • Reconductoring of the Heysham ring and upgrade of the existing 275kV route between Stella West and Norton to 400kV to increase transfer capacity from Scotland to England to 3.3GW. These works are planned for completion by end October 2011. Further work is required to fully address the identified compliance issues and detailed proposals have not yet been developed. The Licensee will investigate and expects to bring forward proposals as part of the next price control review.

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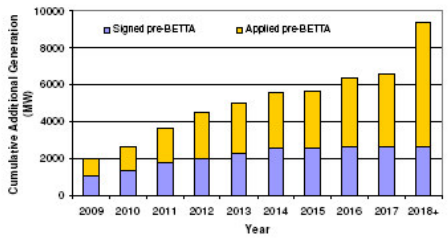
Contracted Scottish Generation pre-BETTA



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TAR WG2 – Subgroup
CAP166 Issues

Hilton - Leamington, Tuesday 25th November 2008

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LCN Interaction

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LCN – Interaction between "Local" and "Wider" Works

CAP166 Working Group Consultation defined two approaches

- Approach 1: *Auction Result drives LCN Allocation*
- Approach 2: *LCN Allocation drives Auction Result*

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Approach 1: *Auction Result drives LCN Allocation*

Transition Only

Enduring & Transition

- **Existing TEC rights withdrawn:** Users granted LCN MW level equal to the pre-existing TEC and a LCN effective date equivalent to the TEC Effective date
- **User wishes to vary LCN** (either MW or effective date)
  - No: Process ends
  - Yes: Following Steps completed
- **New Users:** Follow Process from this point onwards
- **Earliest LCN Date calculated:** Earliest possible date *each project's* "local" works can be completed – *ignoring* resource constraints
- **Backstop LCN Date calculated:** Earliest possible date *a group of projects* "local" works can *all* be completed – *allowing* for resource constraints

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Approach 1: *Auction Result drives LCN Allocation*

Enduring & Transition

- **Conditional on Auction results:** Both the earliest and backstop LCN effective dates are conditional depending on the results of the next wider auction
- **User Bids in Auction:** User can Bid for wider rights in the next auction, but only for rights that are effective on or after its "Earliest LCN Effective Date"
- **Users successful in auction:** These Users will have their LCN effective date aligned with the first year in which they have secured a non-zero volume of wider access
- **Users unsuccessful in auction:** These Users will have their LCN effective date moved to their "Backstop LCN Effective Date"

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Approach 1: *Auction Result drives LCN Allocation*

Enduring & Transition

- **Further Optimisation:** Those Users who did not secure wider access may have their LCN date optimised ahead of their Backstop LCN date depending on the following:
  - **Auction Model results:** Auction model analysis performed to see in which order the losing bids would have secured access if unlimited capacity had been available. Any unallocated LCN capacity then optimised according to this order
  - **First Come First Served:** Alternatively if there is scope to bring forward any unsuccessful auction participants then this may be done through advancing Users on a first come first served basis (on time of signature of offer for connection / use of system)

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Approach 2: *LCN Allocation drives Auction Result*

Transition Only

Enduring & Transition

- **Existing TEC rights withdrawn:** Users granted LCN MW level equal to the pre-existing TEC and a LCN effective date equivalent to the TEC Effective date
- **User wishes to vary LCN** (either MW or effective date)
  - No: Process ends
  - Yes: Following Steps completed
- **LCN Commencement Date calculated:** Date is the earliest each project can have its local works constructed accounting for construction resource constraints
  - In the event two or more projects are subject to a common resourcing constraint all are given the same date – the date by which all works can be constructed
- **No further optimisation of LCN Effective dates**

20

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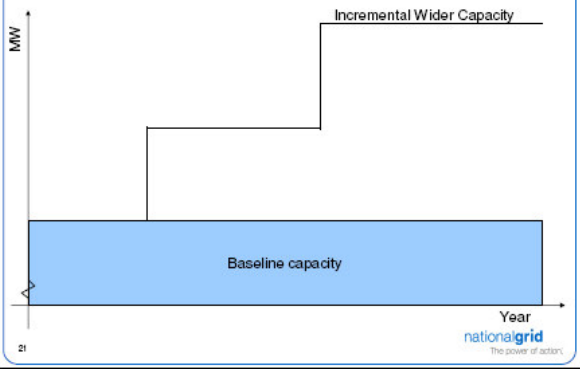
Worked Examples – Approach 1



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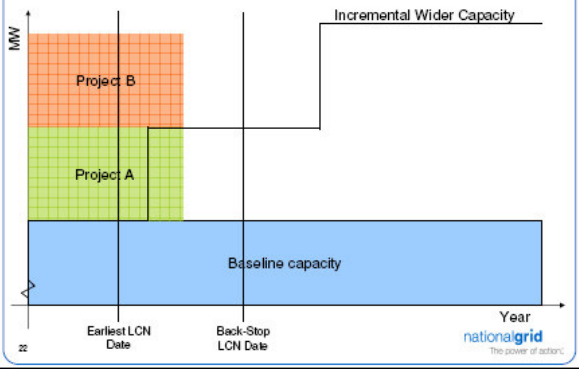
Scenario 1 – Wider Constrains Local



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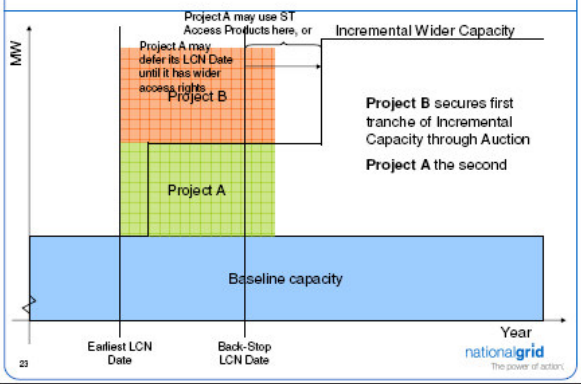
Scenario 1 – Wider Constrains Local



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Wider Constrains Local - Conclusions

Wider Access supply constrains ability of Generators to achieve their "Earliest LCN Date"

- Generators have to be successful in auction to get Earliest LCN Date

Otherwise Generators must wait until their Back-stop LCN Date

- Backstop LCN Date calculated to allow TOs to complete all contingent local works on schedule

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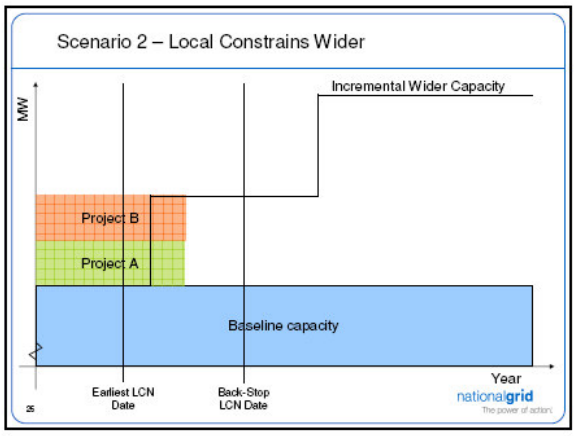
Scenario 2 – Local Constrains Wider
MW
Incremental Wider Capacity
Project B
Project A
Baseline capacity
Year
Earliest LCN Date
Back-Stop LCN Date
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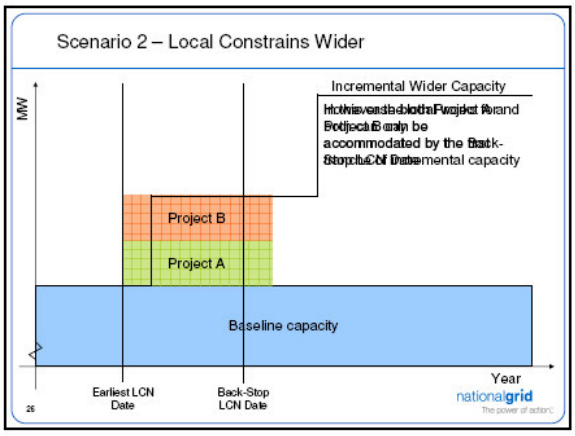
Scenario 2 – Local Constrains Wider
MW
Incremental Wider Capacity
Project B
Project A
Baseline capacity
Year
Earliest LCN Date
Back-Stop LCN Date
nationalgrid
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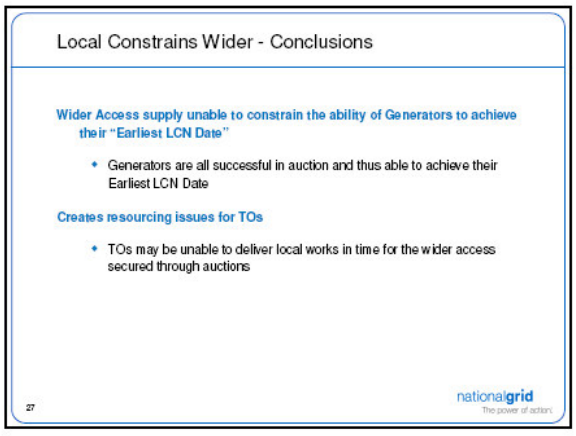
Local Constrains Wider - Conclusions
Wider Access supply unable to constrain the ability of Generators to achieve their "Earliest LCN Date"
Generators are all successful in auction and thus able to achieve their Earliest LCN Date
Creates resourcing issues for TOs
TOs may be unable to deliver local works in time for the wider access secured through auctions
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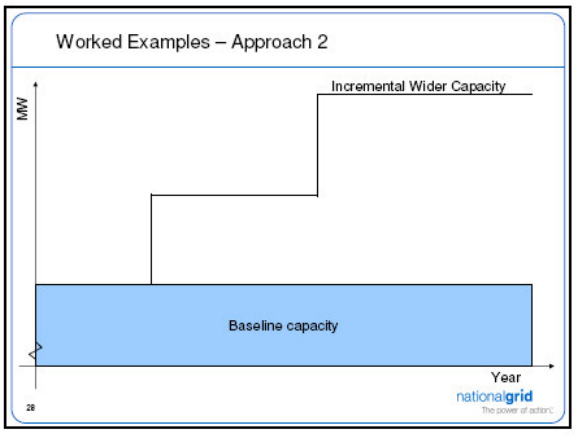
Worked Examples – Approach 2
MW
Incremental Wider Capacity
Baseline capacity
Year
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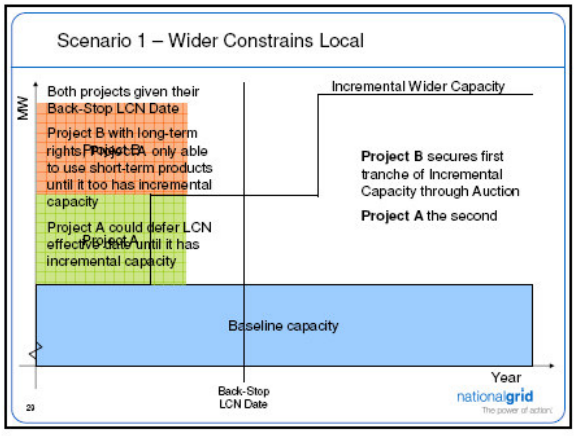
Scenario 1 – Wider Constrains Local
MW
Both projects given their Back-Stop LCN Date
Project B with long-term rights Project B only able to use short-term products until it too has incremental capacity
Project A could defer LCN effective date until it has incremental capacity
Incremental Wider Capacity
Project B secures first tranche of Incremental Capacity through Auction
Project A the second
Baseline capacity
Year
Back-Stop LCN Date
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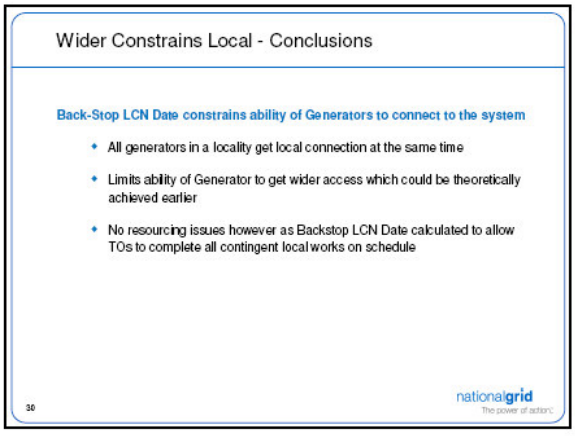
29


Wider Constrains Local - Conclusions
Back-Stop LCN Date constrains ability of Generators to connect to the system
All generators in a locality get local connection at the same time
Limits ability of Generator to get wider access which could be theoretically achieved earlier
No resourcing issues however as Backstop LCN Date calculated to allow TOs to complete all contingent local works on schedule
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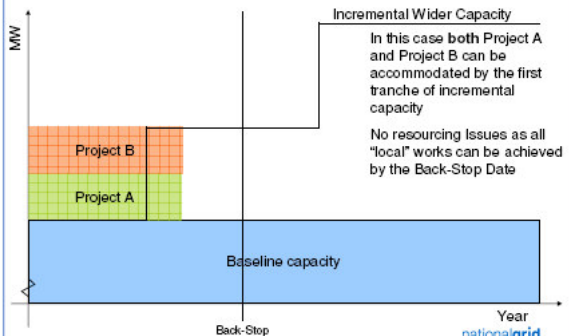
Scenario 2 – Local Constrains Wider



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Local Constrains Wider - Conclusions

Lack of Wider Access Constraints compensated by the Back-Stop LCN Date

- Removes any resource implications for TOs

Again however in theory an earlier connection for one of the generators could have been achieved

- However no easy way of modelling this through the auction (unless it accounts for local access resource constraints as part of the incremental capacity release supply function)

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Responses to CAP166 WG Consultation - LCN

Respondent	Comment
British Energy	Supports either Approach: Does not believe that the allocation of local access rights should be influenced by the success or otherwise of a User in the wider access auction. Does not therefore support Approach 1. Also however believes Approach 2 to be flawed as it potentially gives generators a later date than is practically achievable.
EDN	Supports Approach 1 as will allow for the earliest connection date
Fairwind	No discernible comments on either of the 2 approaches but would not support any option that would effectively introduce an "LCN Queue"
RWE	Believes that Approach 1 has issues if a large number of parties apply to advance their LCN date and that this will cause resourcing issues if resource constraints are ignored. Also concerned that Approach 1 potentially discriminates against Users of short term access in favour of those booking long term access. Supports Approach 2
ScottishPower Energy Wholesale	Supports either Approach: Believes any interaction between local works and wider access auctions presents a barrier to entry. Does not support Approach 1 as it does not give a firm date for both wider and local access and it does not allow Users to plan robustly. Does not support Approach 2 however as believes it will discriminate against Users of short term access.
Scottish and Southern Energy	Believes that Users should be able to close a contractual position defining what their local and wider rights are. Users should also have the ability to flexibly between seeking and accepting local and wider works. No specific comments on the two approaches.
Welsh Power	Does not support either Approach. Queries that one simply creates a local queue (rather than a wider) and has the potential to leave assets stranded at a local level. The other is not allowing for post auction movement does not contain sufficient detail to allow Users to judge if it will give them what they want in the timescales they want it.

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Worked Example (1)

The following example shows the practical difficulties in adopting a "one-size fits all" approach with the LCN / Auction Interaction

Example is of two generators connecting whose local works are interactive

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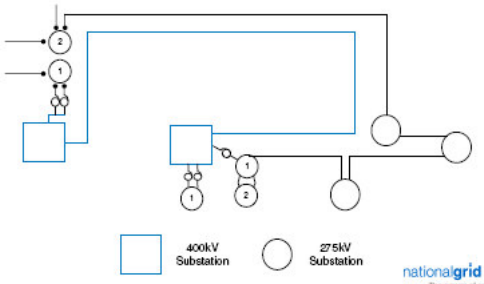
Worked Example (2)

Existing Transmission System (NE England)



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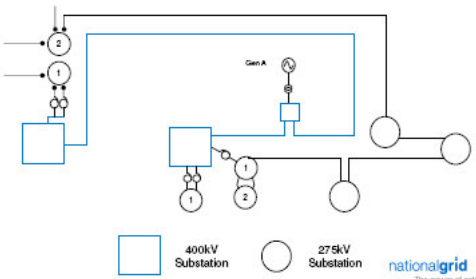
Worked Example (3)

Gen A connects to the system

- Loop in from existing 400kV circuit



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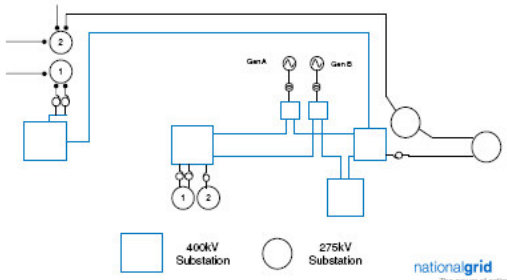
Worked Example (4)

Gen B connects to the system

- Loop in from existing 275kV circuit and uprate to 400kV



37

Worked Example (5)

Overlay Approach 1 World

- Gen A having applied first would receive offer with the less substantive local works and "Earliest" and "Back-stop LCN Dates" would reflect this
- Gen B then applies (in "application period" for same auction) – does it get same "Earliest" and "Back-stop LCN Dates" as Gen A?
  - Or should Gen B get same earliest LCN Date but Back-Stop Date reflects the more substantive local works?
  - Should Gen A have its Back-stop Date amended to the same?
- Issue is then who is successful in Auction

38

Worked Example (6)

Approach 1 World continued

- If only one of Gen A or Gen B is successful then that party gets earliest LCN Date, the other moves to its Backstop Date
- If both successful – clearly as Earliest LCN Date is not feasible for both generators we have an issue
- Solution?
  - Could local works be defined much more narrowly in a world with auctions?
  - Draw auction boundary local to the two generators and reflect "local" works through an incremental capacity supply curve

39

Worked Example (7)

Overlay Approach 2 World

- In an approach 2 world then Gen A applying first would have less substantive local works reflected in offer (and "LCN Commencement Date")
- Gen B then gets more substantive works and later (?) LCN Commencement Date
  - Query is should Gen A have its LCN Commencement Date revised to reflect the more onerous works?
- If not then Gen A has advantage in auction (can bid earlier)
- If so then both generators' connections delayed

40

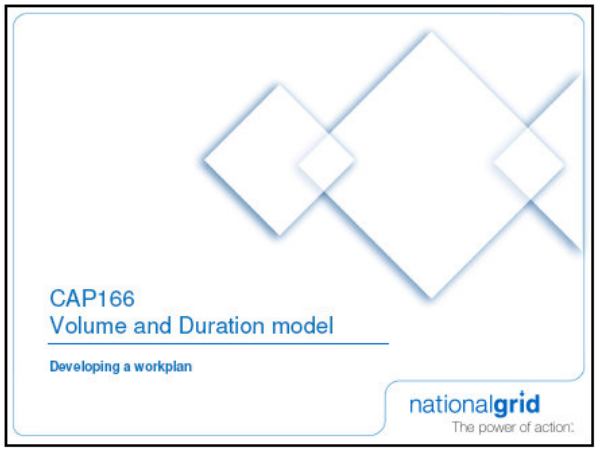
Possible solution?

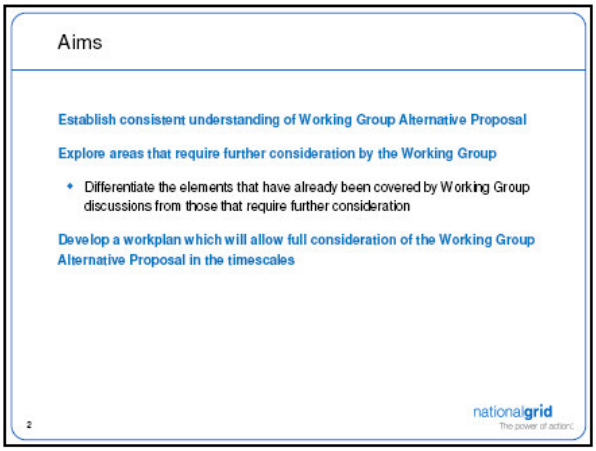
Introduce further auction boundaries

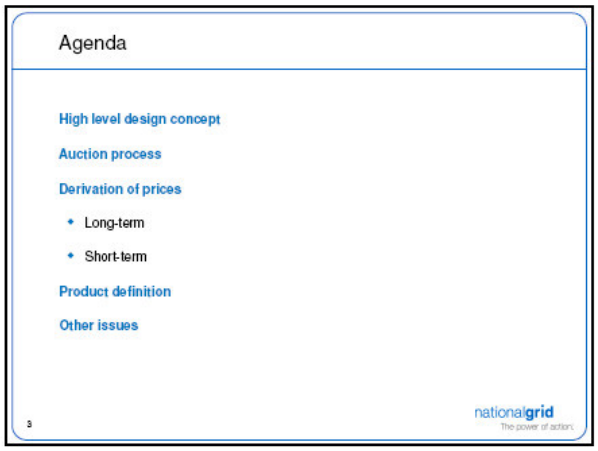
- Auction boundaries would be drawn "locally" to a new connection
- Then the incremental capacity supply function would then be used to model the interactions seen in the above worked example
- Interaction between Short-Term and Long-Term Access Products

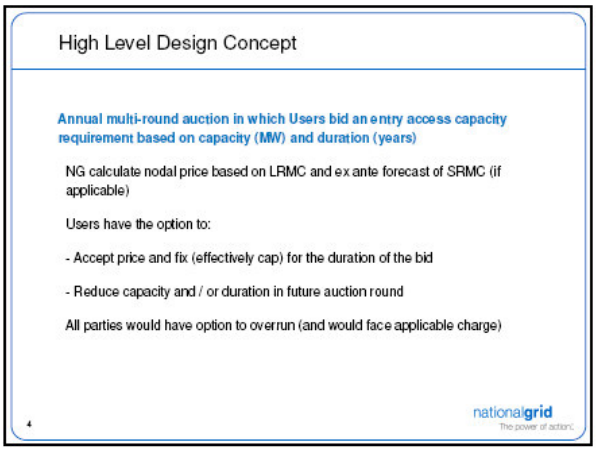
41

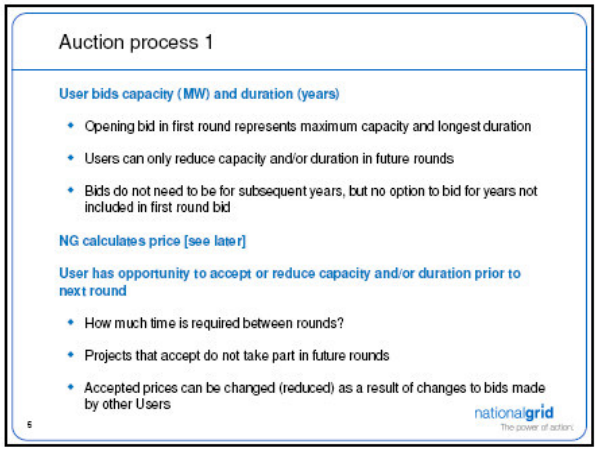
Meeting Twenty Five – 10th December 2008

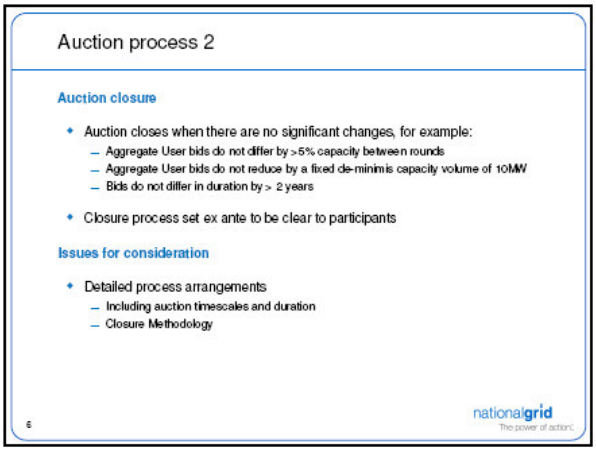












Derivation of prices

For volume up to baseline (+incremental) capacity

- All Users pay long-term charge

If volume is greater than baseline (+incremental) capacity

- All Users pay
  - Long-term charge
    - For volume up to baseline (+incremental) capacity
  - Short-term charge
    - For volume above baseline (+incremental) capacity

7

Derivation of prices: Long-term 1

Long-term prices would include

- Local charge (£/kW)
- Wider charge (£/kW)
- Residual (£/kW or £/kWh)

Long-term charge would only apply when associated reinforcements have been completed

8

Derivation of prices: Long-term 2

Issues for consideration

- Nature of wider charges
  - LRMC derived from ICRP transport & tariff model?
    - What is the associated process?
  - Treatment of planned reinforcements
  - Treatment of baseline capacity
    - Tariff from ICRP transport & tariff model applicable to volumes up to baseline (+incremental) only?
    - How would this be achieved? Boundary by boundary?
    - How should capacities greater than baseline (+incremental) be handled?
  - Treatment of load factor
    - Annual capacity factors (e.g. 50% of 8760 hours)?
- What is the appropriate lead-time for long-term access?
  - Fixed (e.g. 4 years) [similar to CAP164 original]
  - Project specific backstop [similar to CAP164 working group alternative amendment]
  - Transmission consents + fixed period
- Revenue recovery
  - Residual charge
    - Fixed or variable?

9

Derivation of prices: Short-term 1

Where aggregate bids for capacity > baseline (+incremental), users required to pay SRMC

- Only until incremental reinforcements have been completed
  - Note previous lead-time issues
- Short-run costs for capacity above baseline (+incremental) only
  - Constraint costs caused by outages etc. continue to be recovered (flat) by BSUoS

Short-run costs difficult to forecast

- Options for consideration:
  - Fixed ex ante based on forecast bid offer spread
  - Contract for differences (one-way or two-way) with strike prices based on forecast bid offer spread
  - As above with caps and collars
  - Known ex ante charges based on forecast BM bid offer spread with an indexation mechanism
    - Perhaps based on GBSO incentive mechanism
  - Explore interaction with treatment of buy-back [see later]
- Options may not be mutually exclusive

10

Derivation of prices: Short-term 2

Issues for consideration

- Determination of appropriate short-term price
  - Marginal or average, etc.
  - £/kW or £/kWh
  - Appropriate treatment of location
- Determination of appropriate chargeable volume
  - To ensure constraints due to outages are recovered from (flat) BSUoS charges
- Commercial and contractual framework in relation to the liability to pay charges
  - Including framework for any CfDs
- Implications of inter-trips (or other operating restrictions) on development of short-term costs
- Revenue recovery

11

Product definition

Contractual framework

- Including nature of offer, etc.

Liabilities and securities

- Pre-commissioning
- Post-commissioning

Buy-back

- As developed for WGAA1 & 2
  - LCN
    - As now
  - Access rights secured via auction
    - Due to LCN – refund
    - Constraint on wider system – compensation in BM
- User bids volume/duration and buy-back cap
  - How would this be factored into ex ante forecast of short-term costs?
  - Should this be reflected back in Users price?

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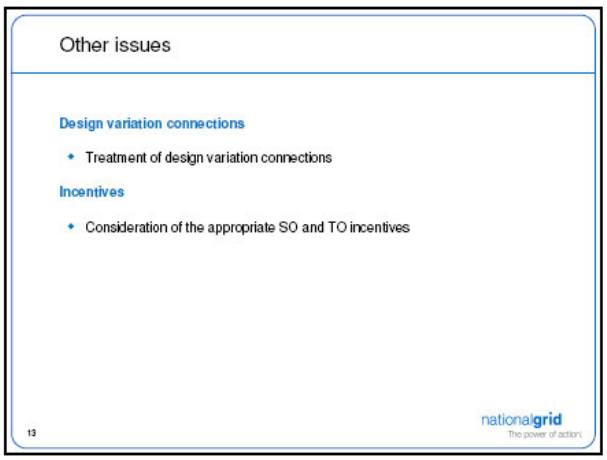
Other issues
Design variation connections
Treatment of design variation connections
Incentives
Consideration of the appropriate SO and TO incentives
13
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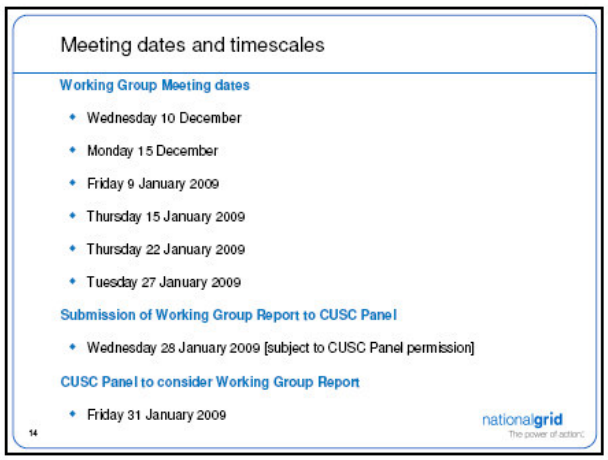
Meeting dates and timescales
Working Group Meeting dates
Wednesday 10 December
Monday 15 December
Friday 9 January 2009
Thursday 15 January 2009
Thursday 22 January 2009
Tuesday 27 January 2009
Submission of Working Group Report to CUSC Panel
Wednesday 28 January 2009 [subject to CUSC Panel permission]
CUSC Panel to consider Working Group Report
Friday 31 January 2009
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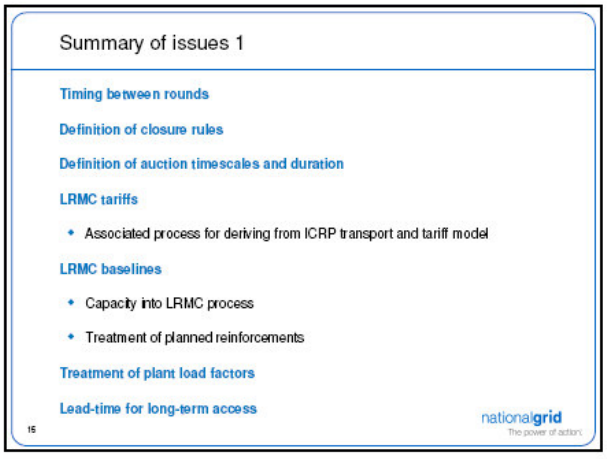
Summary of issues 1
Timing between rounds
Definition of closure rules
Definition of auction timescales and duration
LRMC tariffs
Associated process for deriving from ICRP transport and tariff model
LRMC baselines
Capacity into LRMC process
Treatment of planned reinforcements
Treatment of plant load factors
Lead-time for long-term access
15
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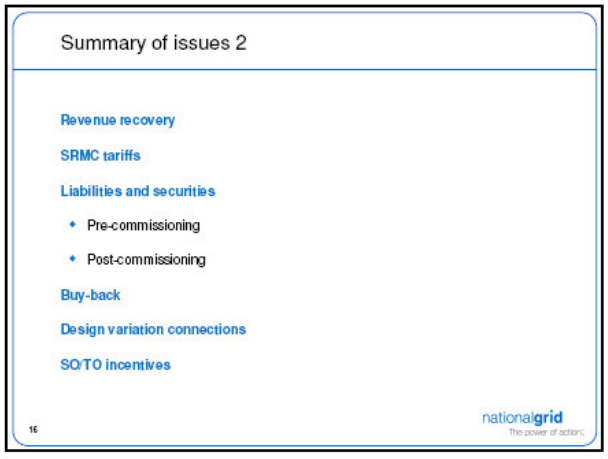
Summary of issues 2
Revenue recovery
SRMC tariffs
Liabilities and securities
Pre-commissioning
Post-commissioning
Buy-back
Design variation connections
SO/TO incentives
16
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Meeting Twenty Six – 15th December 2008

TAR WG2
Short Term Pricing

London, Monday 15th December 2008

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Short Run Marginal Costs

- Objectives of the SRMC access tariff
  - To give a firm year-ahead (at least) price reflective of the cost releasing short term access
    - Reflects the costs of constraints caused by the release of such capacity
  - To incentivise short term access users to use the system at times where the likelihood of constraint is lower

2

Short Run Marginal Costs

- Form of tariff
- (A) Flat Rate across the Year
- (B) Profiled according to likelihood of Constraint being active
- Volume applicable
- (A) Only MWh generated above baseline capacity
- (B) Every MWh generated by ST Access Users

3

Short Run Marginal Costs

- How to calculate tariffs – Option A ("simple")
- At its simplest = ([1]Cost of replacement Generation)-([2]Cost of reducing generation in constrained zone)
  - [1] – Historic Bid Price analysis in constrained zone
  - [1] – [Compulsory] Buyback prices in zone
  - [2] – Simple inspection of Offer Prices outside of constrained zone
- Profile by Season, Time of Day etc?

4

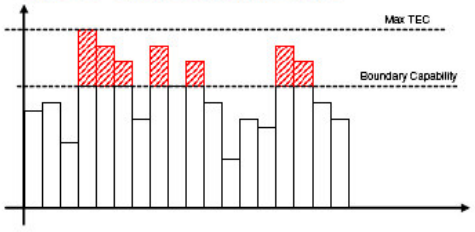
Short Run Marginal Costs

- How to calculate tariffs – Option B ("probabilistic model")
- Again = ([1]Cost of replacement Generation)-([2]Cost of reducing generation in constrained zone)
  - [1] – Probabilistic Bid Price/Buyback forecast in constrained zone
  - [2] – Probabilistic forecast of Offer Prices outside of constrained zone
- Probabilistic cost of constraints in each zone – convert to £/MWh figure
  - Divide by total expected generation from ST access users (tariff whenever generate)
  - Divide by total expected constrained volume (tariff only when constraint is "active")

5

Short Run Marginal Costs

- When to charge
- Option A – When constraint is active



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Short Run Marginal Costs

- **Option A – When constraint is active**
  - Actual costs of constraining generation above baseline pro-rated across all ST access Users who are generating in that half-hour
  - Another Way?
- **Other Issues with approach**
  - Identifying when constraint is active
    - P217 flag?
    - Post-event?
  - Either option would not demonstrate an ex-ante incentive to not generate when the constraint is likely to be (is) active
  - Do however target charges to when it is
  - Little certainty for Users of actual costs of generating in a half hour

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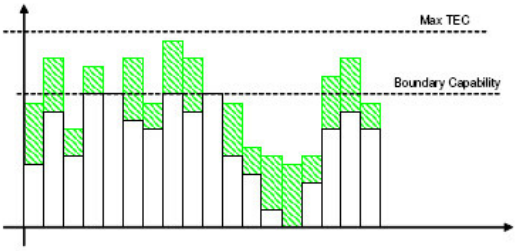
Short Run Marginal Costs

- When to charge
- **Option B – To all ST Access Users when they generate**



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Short Run Marginal Costs

- **Option B – To all ST Users when they generate**
  - Tariffs generally lower than under Option A
  - Would need to define probabilistically by time of day, by season etc
  - Another Way?
- **Other Issues with approach**
  - Would demonstrate an ex-ante incentive to not generate when the constraint is likely to be active
  - Will charge ST Access Users whenever they generate even in half hours when actual constraint costs may be zero
  - Does give users certainty of costs of generation in each half hour

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CAP166: Capacity Auctions

Pro-ration rules for long-term capacity

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Allocation of long-term capacity rights

When is Pro-rating necessary?

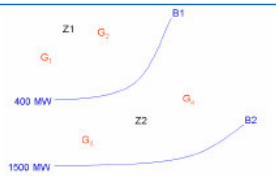
- In the situation where there is demand above capability at more than one boundary on the system the available long-term capacity rights will need to be pro-rated between the Users concerned.

Issues

- If there are interacting boundaries (such as nested boundaries) which need pro-rating, the order in which the pro-ration is applied will affect the resulting allocation of capacity to the individual Users concerned.
- Aim is to derive a methodology which apportions long-term capacity rights in a fair and equitable manner

2

Two-boundary example



Assume following demand and capabilities:

Boundary	B1	B2
Capability	400	1500

		Requirement	B1	B2
G1	Z1	400	1	1
G2	Z1	400	1	1
G3	Z2	1200	1	1
G4	Z2	1200	1	1

	Boundary	B1	B2
	Total requested	800	3200
	Pro-ration	50%	47%

3

Two-boundary example : Simple allocation methodology

Apply lowest ratio to each boundary simultaneously:

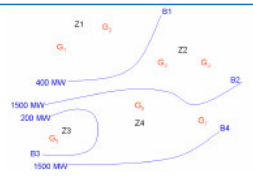
		Allocation	B1	B2	Applicable Pro-ration
G1	Z1	188	50%	47%	47%
G2	Z1	188	50%	47%	47%
G3	Z2	563	100%	47%	47%
G4	Z2	563	100%	47%	47%
	Total		188	703	

		B1	B2
	Capability	400	1500
	Percentage of Capability allocated?	47%	47%
	Total Requested	800	3200
	Percentage of Requirement allocated?	23%	22%

Appears reasonable for two boundaries, but what happens for more?

4

Four-boundary example



Assume following demand and capabilities:

Boundary	B1	B2	B3	B4
Capability	400	1500	200	1500

		Requirement	B1	B2	B3	B4
G1	Z1	400	1	1	0	1
G2	Z1	800	1	1	0	1
G3	Z2	400	0	1	0	0
G4	Z2	1600	0	1	0	0
G5	Z3	400	0	0	1	1
G6	Z4	200	0	0	1	0
G7	Z4	200	0	0	0	1

	Boundary	B1	B2	B3	B4
	Total requested	1200	3100	400	3000
	Pro-ration	33%	48%	50%	38%

5

Four-boundary example : Simple allocation methodology

Apply lowest ratio to each boundary simultaneously:

		Allocation	B1	B2	B3	B4	Applicable Pro-ration
G1	Z1	133	33%	48%	100%	38%	33%
G2	Z1	267	33%	48%	100%	38%	33%
G3	Z2	154	100%	48%	100%	38%	38%
G4	Z2	577	100%	48%	100%	38%	38%
G5	Z3	154	100%	100%	50%	38%	38%
G6	Z4	77	100%	100%	100%	38%	38%
G7	Z4	77	100%	100%	100%	38%	38%
	Total		133	547	77	553	

		B1	B2	B3	B4
	Capability	400	1500	200	1500
	Percentage of Capability allocated?	33%	36%	38%	37%
	Total Requested	1200	3100	400	3000
	Percentage of Requirement allocated?	11%	18%	19%	14%

Appears to lead to under-allocation at all other boundaries, hence sub-optimal?

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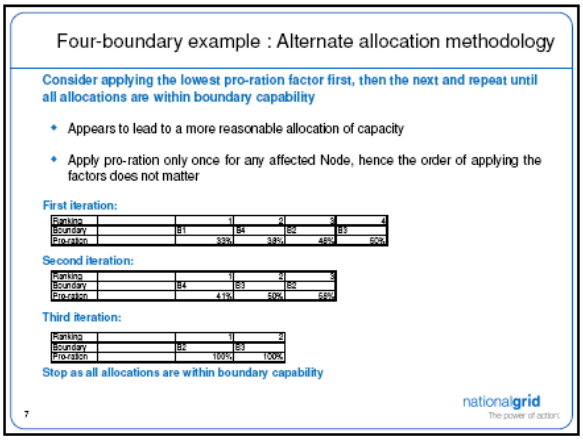

Four-boundary example : Alternate allocation methodology

Consider applying the lowest pro-ration factor first, then the next and repeat until all allocations are within boundary capability

- Appears to lead to a more reasonable allocation of capacity
- Apply pro-ration only once for any affected Node, hence the order of applying the factors does not matter

First iteration:

Ranking		1	2	3	4
Boundary		B1	B4	B2	B3
Pro-ration		33%	38%	48%	50%

Second iteration:

Ranking		1	2	3
Boundary		B4	B3	B2
Pro-ration		4.1%	50%	58%

Third iteration:

Ranking		1	2
Boundary		B2	B3
Pro-ration		100%	100%

Stop as all allocations are within boundary capability

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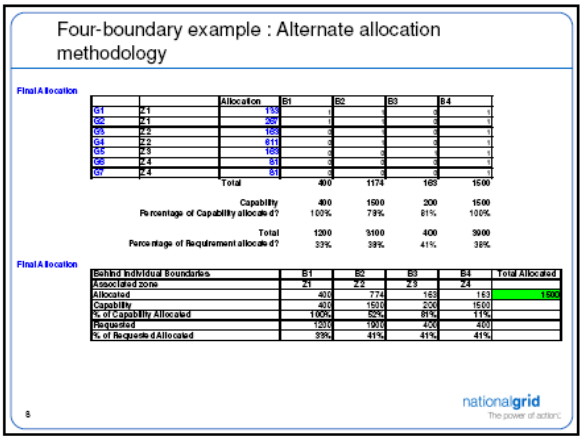

Four-boundary example : Alternate allocation methodology

Final Allocation

		Allocation	B1	B2	B3	B4
G1	Z1	133	1	1	1	1
G2	Z1	267	1	1	1	1
G3	Z2	167	1	1	1	1
G4	Z2	611	1	1	1	1
G5	Z3	167	1	1	1	1
G6	Z4	81	1	1	1	1
G7	Z4	81	1	1	1	1
	Total		400	1174	183	1500
		Capability	400	1500	200	1500
		Percentage of Capability allocated?	100%	78%	91%	100%
		Total	1200	3100	400	3900
		Percentage of Requirement allocated?	33%	38%	41%	38%

Final Allocation

Behind Individual Boundaries	B1	B2	B3	B4	Total Allocated
Associated Zone	Z1	Z2	Z3	Z4	
Allocated	400	774	183	183	1500
Capability	400	1500	200	1500	
% of Capability Allocated	100%	52%	91%	11%	
Requested	1201	1901	400	400	
% of Requested Allocated	33%	41%	41%	41%	

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Meeting Twenty Seven – 9th January 2008

Short Term Pricing – Constraint Costs Analysis

London, Friday 9th January 2009

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Short Run Marginal Costs

- **Objectives of the SRMC access tariff**
  - To give a firm year-ahead (at least) price reflective of the cost releasing short term access
    - Reflects the costs of constraints caused by the release of such capacity
  - To incentivise short term access users to use the system at times where the likelihood of constraint is lower

2

Historic Constraint Pricing Analysis

- **Historic Prices of export constraints evaluated from National Grid Operational Costs "De-gut" algorithm**
  - Allows an appraisal of the half hourly costs of a Constraint to be made
- **Price Elements made up of available operational tools**
  - Intertrips
  - Out of merit Bids
  - Replacement Energy or Margin Costs
- **Only Export Constraints analysed (not Import)**

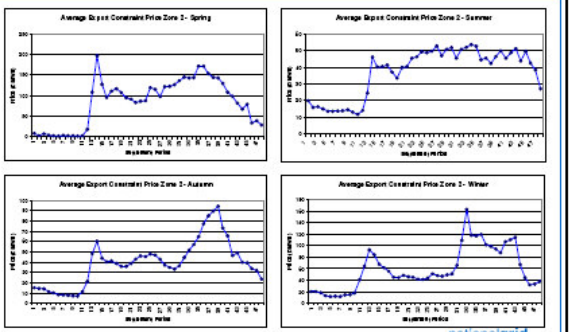
3

Historic Constraint Pricing Analysis

- **Data Range for analysis:**
  - April 2005 – March 2008
- **GB Transmission System split into 24 zones**
  - As per WG1 short term pricing analysis
- **Price Analysis is**
  - Zonal
  - By Season (Spring, Summer, Autumn, Winter)
  - By Settlement Period
  - Average Price derived across Seasons

4

Historic Constraint Pricing Analysis
Zone 2 – North West Scotland



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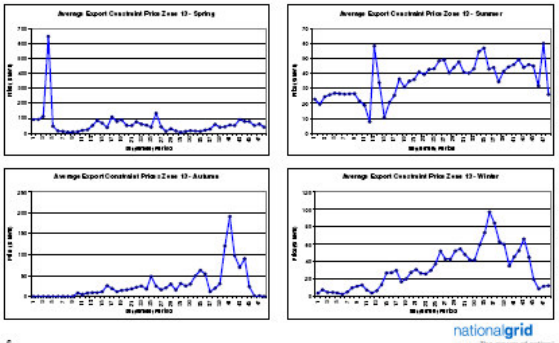
Historic Constraint Pricing Analysis
Zone 13 – Northern England (Aire Valley)



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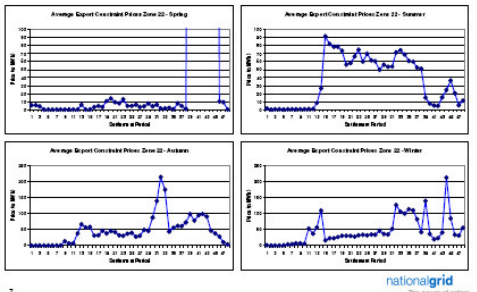
Historic Constraint Pricing Analysis
Zone 22 – Thames Estuary



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Historic Constraint Pricing Analysis
Zone Summary

Zone	Total Volume (MWh)	Total Cost (£)	Volume Weighted Average Price (£/MWh)
1	1,606,779	£95,982,158	£59.74
2	1,606,920	£95,885,795	£59.73
3	1,807,549	£103,386,633	£57.20
4	1,286,003	£81,671,636	£63.41
5	1,495,720	£89,962,616	£60.15
6	1,501,847	£90,146,617	£60.02
7	1,129,326	£74,189,012	£65.69
8	1,354,091	£82,844,594	£61.18
9	197,465	£7,586,168	£38.42
10	197,687	£7,553,142	£38.21
11	206,719	£7,540,058	£36.47
12	185,285	£6,880,401	£37.13
13	305,259	£12,234,419	£40.09
14	272,637	£9,886,925	£36.26
15	185,938	£7,630,668	£41.04
16	162,742	£4,820,093	£29.62
17	234,633	£8,309,068	£35.41
18	159,684	£4,522,586	£28.32
19	11,864	£536,539	£45.22
20	114,493	£2,626,964	£22.94
21	1,547	£159,021	£102.79
22	158,894	£8,303,705	£52.26
23	3,577	£102,612	£28.74
24	23,783	£3,245,336	£136.46

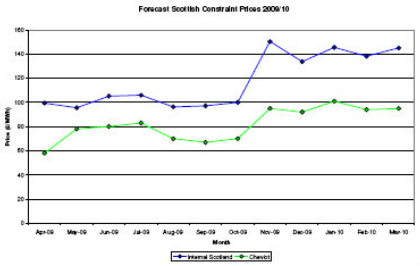
8

Constraint Price Forecasts

- Three sets of monthly prices derived in National Grid's existing constraint forecasts
  - Internal Scotland
  - Cheviot
  - England and Wales
- Calculated with reference to:
  - Forecast BM Prices
  - Forecast Energy and Margin market position

9

Constraint Price Forecasts
Scotland



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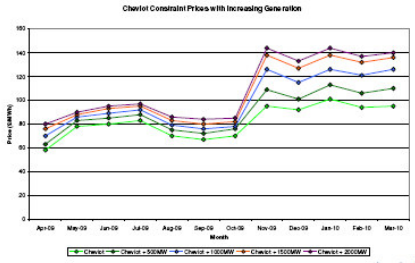
Constraint Price Forecasts
Cheviot Evolution



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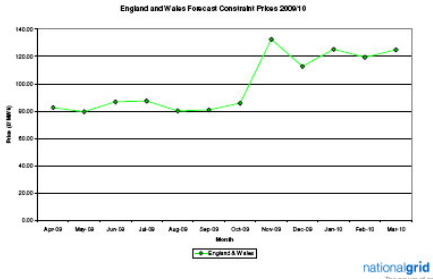
Constraint Price Forecasts
England and Wales



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Long-term Pricing – Boundary Capability Analysis

London, Friday 9th January 2009

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Analysis Outline

Objective:

- Compare current TNUoS tariffs with tariffs calculated without over allocation in Scotland

Method:

- Scale Scottish generation to meet demand and boundary capability and run transport and tariff model

Current over allocation in Scotland

- Boundary Capability = 2.1GW (SYS)
- Scottish Generation = 9.7 GW (transport model)
- Scottish Demand = 5.2 GW (transport model)

Scaling Factor

- (Capability + Demand) / Generation = 0.75

2

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Analysis Results

	2008/9 Tariffs	Recalculated 2008/9 Tariffs	Difference
Zone Name	Zonal Tariff (£/kW)	Zonal Tariff (£/kW)	Zonal Tariff (£/kW)
North Scotland	22.26	16.64	-5.62
Peterhead	19.76	14.51	-5.25
Western Highland & Skye	20.53	14.93	-5.61
Central Highlands	16.74	11.52	-5.22
Argyll	15.06	10.06	-5.00
Stirlingshire	14.36	9.38	-4.97
South Scotland	13.52	9.32	-4.20
Auchencrosh	10.38	5.54	-4.85
Humber & Lancashire	6.32	7.14	0.83
North East England	9.95	8.90	-1.05
Anglesey	6.83	7.70	0.88
Dinorwig	9.82	10.70	0.88
South Yorks & North Wales	4.42	5.56	1.15
Midlands	2.32	3.42	1.10
South Wales & Gloucester	-2.47	-1.09	1.38
Central London	-5.66	-4.39	1.27
South East	1.22	2.67	1.45
Oxon & South Coast	-0.01	1.16	1.18
Wessex	-2.57	-0.69	1.89
Peninsula	-8.53	-6.93	1.59

3

Analysis Conclusions

Insufficient time to perform detailed analysis

Initial thoughts

- Majority of generation now meets local demand in Scotland
- Believe line flows in Scotland are significantly affected – potentially certain line flows may have reversed
- Result
  - Significant decrease in Scottish Tariffs
  - England and Wales tariffs show marginal increase due to change in flows from Scotland

4

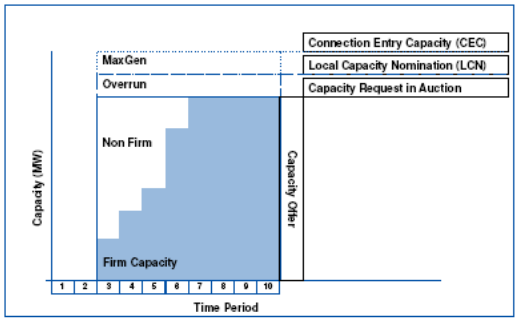
Meeting Twenty Eight – 15th January 2008

Volume and Duration Model

Bill Reed

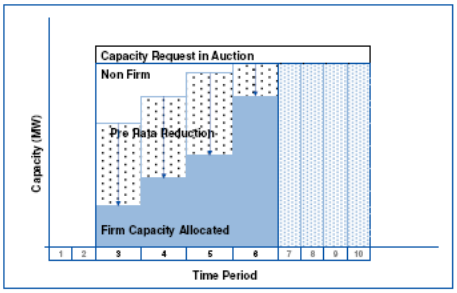
RWE
The energy to lead

Volume and Duration Definitions



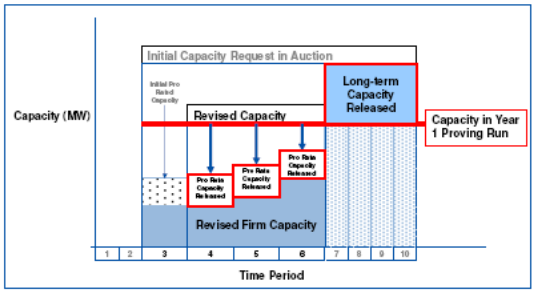
RWE

Non Firm Pro Rating



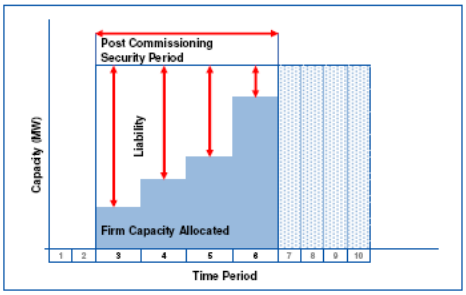
RWE

Capacity Reduction and Release



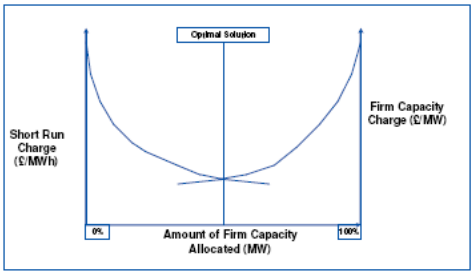
RWE

Post Commissioning Liabilities

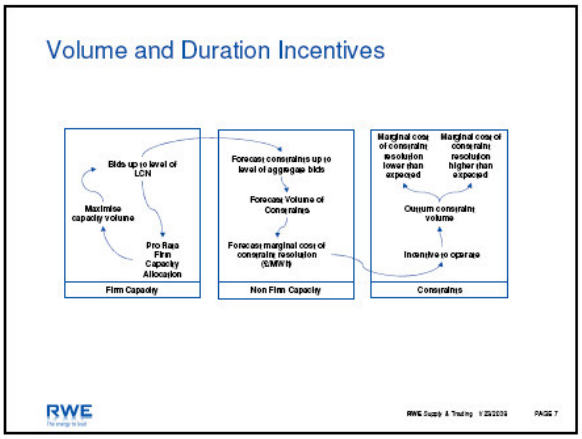


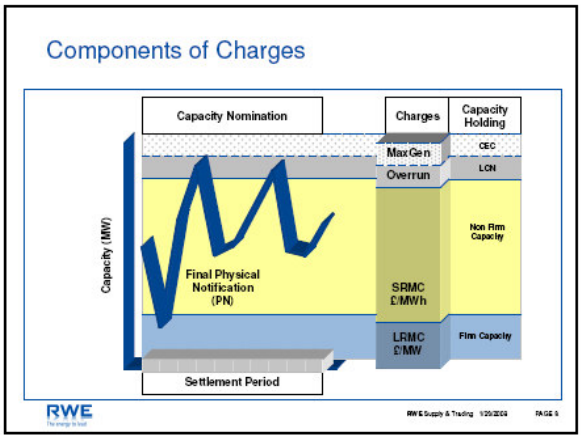
RWE

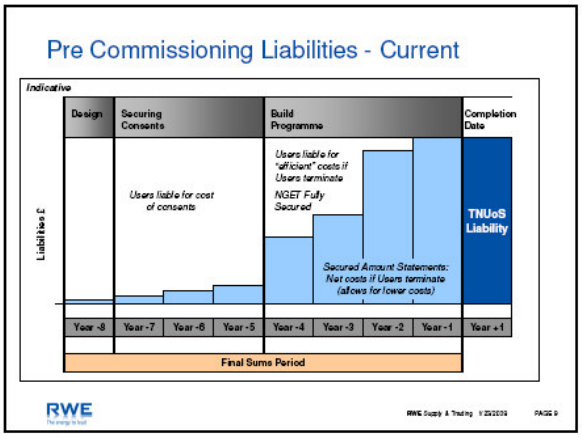
Efficient Outcome

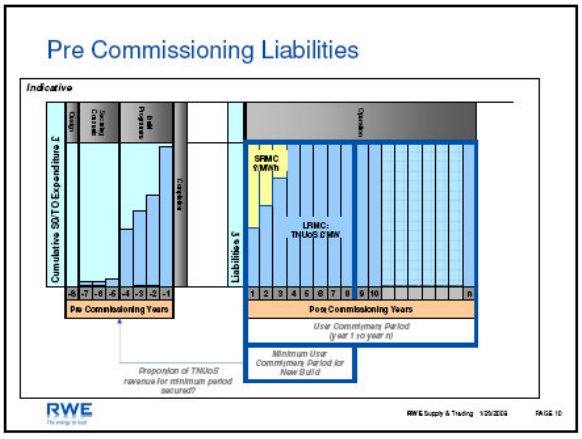


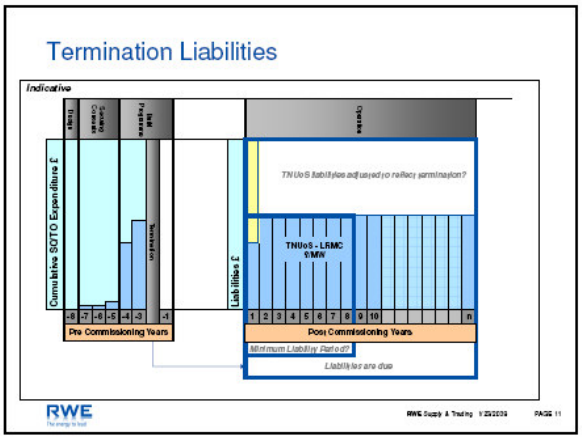
RWE

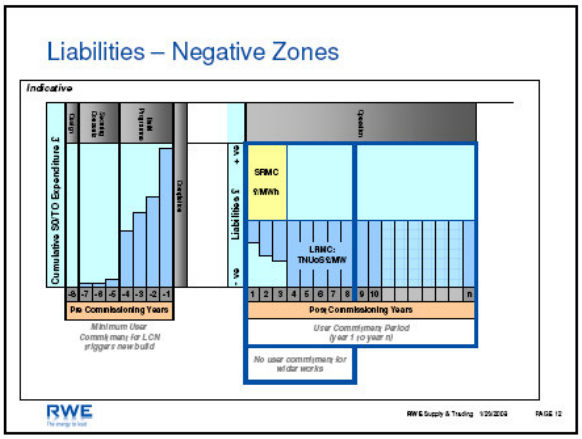

Volume and Duration Incentives
Bids up to level of LCN
Maximise capacity volume
Pro Rata Firm Capacity Allocation
Firm Capacity
Forecast constraints up to level of aggregate bids
Forecast Volume of Constraints
Forecast marginal cost of constraint resolution (£/MWh)
Non Firm Capacity
Marginal cost of constraint resolution lower than expected
Marginal cost of constraint resolution higher than expected
Outturn constraint volume
Incentive to operate
Constraints
RWE


Components of Charges
Capacity Nomination
Charges
Capacity Holding
MaxGen
Overrun
CEC
LCN
Non Firm Capacity
Capacity (MW)
Final Physical Notification (PN)
SRMC £/MWh
LRMC £/MW
Firm Capacity
Settlement Period
RWE


Pre Commissioning Liabilities - Current
Indicative
Design
Securing Consents
Build Programme
Completion Date
Liabilities £
Users liable for cost of consents
Users liable for "efficient" costs if Users terminate
NGET Fully Secured
Secured Amount Statements: Net costs if Users terminate (allows for lower costs)
TNUoS Liability
Year -8
Year -7
Year -6
Year -5
Year -4
Year -3
Year -2
Year -1
Year +1
Final Sums Period
RWE


Pre Commissioning Liabilities
Indicative
Cumulative SO/TO Expenditure £
Liabilities £
SRMC £/MWh
LRMC: TNUoS £/MW
Pre Commissioning Years
Post Commissioning Years
User Commitment Period (year 1 to year n)
Minimum User Commitment Period for New Build
Proportion of TNUoS revenue for minimum period secured?
RWE


Termination Liabilities
Indicative
Cumulative SO/TO Expenditure £
Liabilities £
TNUoS liabilities adjusted to reflect termination?
TNUoS - LRMC £/MW
Pre Commissioning Years
Post Commissioning Years
Minimum Liability Period?
Liabilities are due
RWE


Liabilities – Negative Zones
Indicative
Cumulative SO/TO Expenditure £
Liabilities £
+ ve
- ve
SRMC £/MWh
LRMC: TNUoS £/MW
Pre Commissioning Years
Post Commissioning Years
Minimum User Commitment for LCN triggers new build
User Commitment Period (year 1 to year n)
No user commitment for wider works
RWE

Description

Straw man 1: Capacity & commodity price

- Users bid capacity and duration
- Allocation of capacity
  - Pro-rata demand back to long-run system capability
  - Remaining demand met by short-run measures
- NG calculates prices
  - Zonal long-run price (£/MW) based on TNUoS
  - Zonal or single short-run price (£/MWh) based on average bid/offer spread (ex ante price triggered when constraint is active)
- Multiple-round, descending capacity/duration auction
  - Auction closes when stability criterion is met or end time reached
- Annual proving tests with capacity reduction remedy
- Generation above nominated capacity treated as overrun
- Long-run access fully shareable

Straw man 2: Single capacity price

- Users bid capacity, duration, load duration and buy-back price
- NG calculates price
  - NG estimates annual investment and operational cost and derives £/MW single price for each gen
- Multiple-round, ascending and descending capacity/duration/load duration and buy-back auction
  - Auction closes when stability criterion is met or end time reached
- Generation above nominated load duration treated as overrun
- Shareability of access limited by load duration and buy-back

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Issues

Straw man 1: Capacity & commodity price

- Pro rata of long-term rights may lead to inefficient allocation
  - Nuclear vs wind
- Accuracy of short-run price
  - Ex ante price based on average
  - Uncertainty of likelihood of constraint being active
- Descending auction may lead to inefficient outcome
  - Game of chicken
- Practical (and legal?) issues with proving tests

Straw man 2: Single capacity price

- How are price differentials calculated?
  - Pro-rata on load factor?
- Greater risk that auction will time out
- How is generation above nominated load duration calculated?
- How are shareability limitations managed?

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Issues with Descending only Auction

Potential to 'under-allocate' access rights, hence inefficient

- Assume that Users book their requirements in the first round of the auction which in aggregate are above system capability
  - National Grid publishes the long-run price and short-run price (assume this is high due to high demand)
  - National Grid also indicates to Users their long-run allocation and short-run allocation of rights
- If all Users then decide that they do not wish to pay the high price for the short-run rights and all reduce their capacity bookings following that auction round then:
  - National Grid re-calculates the revised long-run price and short-run price (which is now much lower or zero)
  - If Users were then content to pay that short-run price they have no way of increasing their capacity booking to indicate their willingness to accept the new prices

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Issues with Proving tests / Capacity Reduction

Legal issues?

- If a User is charged for an access right, can National Grid remove that right without compensation, or is this a breach of the property right?

Practicality

- Should National Grid be policing capacity booking?
  - If a User books capacity and pays for it, why should National Grid check they are using it?
- How will National Grid force Users to generate to 'prove'?
- If the User is not charged for the removed access right, then this does not create the correct incentives/behaviours on Users
  - Principle underpinning the auction is to get the correct signals from Users such that National Grid knows the long-term requirements of Users
  - But no incentive not to book capacity anyway and then have it removed at a later date if no cost?
- What does National Grid do with the capacity right it has taken back?

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Description – further Straw man

Further Straw man : Simple single capacity price

- Users bid capacity and duration (could include buy-back price added at a later date)
- Allocation of capacity
  - Users are allocated what they've bid for
- NG calculates prices
  - Based on long-run and short-run levels of capacity calculated by pro-ration of demand back to long-run system capability with remaining demand met by short-run measures
  - Zonal price (£/MW) based on weighted average of TNUoS for long-run and SRMC for short-run
  - Users pay for capacity allocated irrespective of if it is used
- Multiple-round, ascending/descending capacity/duration auction
  - Auction closes when stability criterion is met or end time reached
- As no judgement of use made by National Grid over either long-run or short-run access, both are fully shareable

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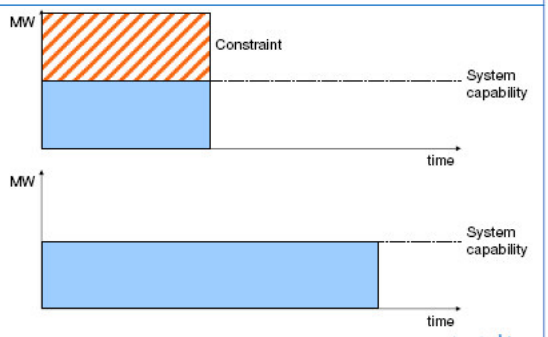
Load factor or load duration?



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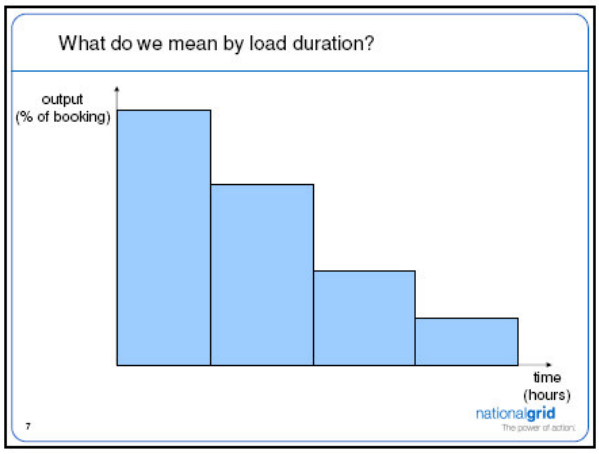
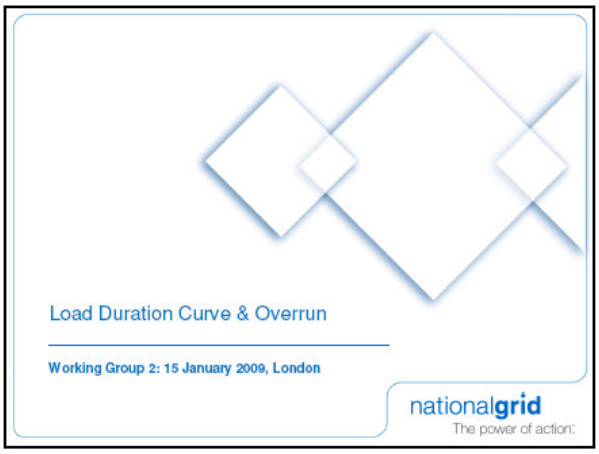
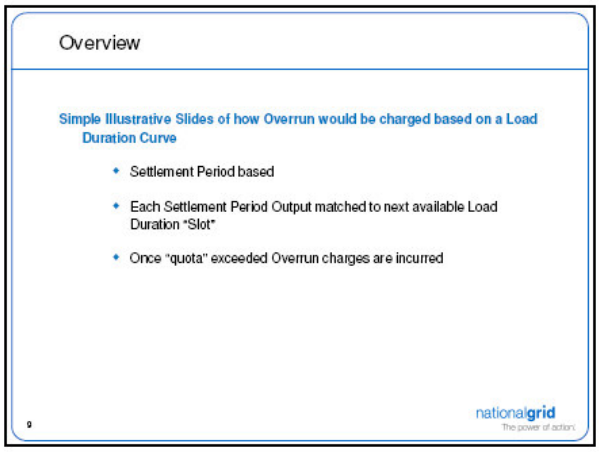

What do we mean by load duration?
output
(% of booking)
time
(hours)
nationalgrid
7


Load Duration Curve & Overrun
Working Group 2: 15 January 2009, London
nationalgrid
The power of action:


Overview
Simple Illustrative Slides of how Overrun would be charged based on a Load Duration Curve
Settlement Period based
Each Settlement Period Output matched to next available Load Duration "Slot"
Once "quota" exceeded Overrun charges are incurred
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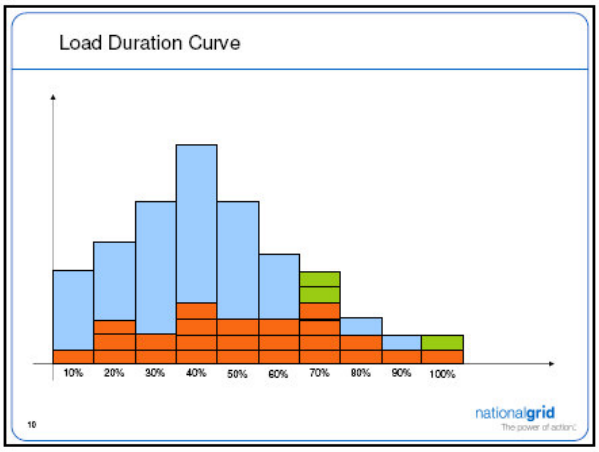
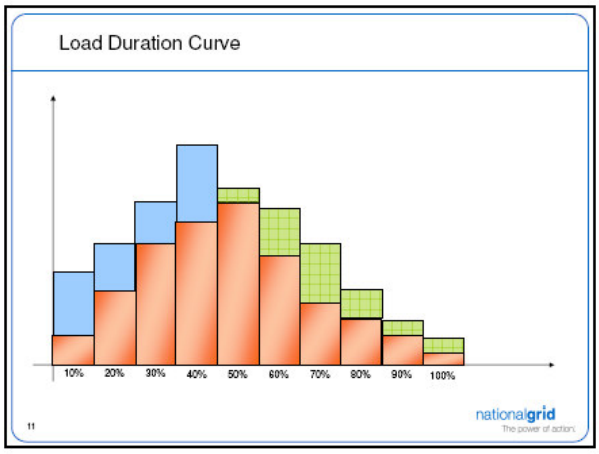
9


Load Duration Curve
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
nationalgrid
10


Load Duration Curve
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
nationalgrid
11