



## **WORKING GROUP REPORT**

### ***CUSC Amendment Proposal 097***

**Revision to the contractual requirements for Small and  
Medium Embedded Power Stations under CUSC 6.5**

**Prepared by the CAP097 Working Group  
for submission to the Amendments Panel**

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### **b Distribution**

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## 1.0 SUMMARY AND RECOMMENDATIONS

### Executive Summary

- 1.1 National Grid submitted CAP097 to the July 2005 meeting of the CUSC Panel. It proposes to amend CUSC 6.5 in order to clarify the process to be followed by a Distribution Network Operator (DNO) and National Grid prior to the energisation of a Small or Medium Power Station that is embedded within the DNO's network. The aim of the process would be to identify before energisation whether the Embedded Power Station has a significant system effect upon the GB Transmission System. Such an effect may be caused by the Embedded Power Station in isolation or through a cumulative effect of a number of Embedded Power Stations connecting in a locality.
- 1.2 Should the process identify that the Embedded Power Station would trigger transmission reinforcement works, National Grid and the host DNO would enter into a Construction Agreement for the relevant works. The DNO would also undertake not to energise the Embedded Power Stations connection until such transmission works were completed.
- 1.3 Two Working Group Alternative Amendments (WGAA) have been developed through the Working Group. These have been based upon the original amendment but differ from it in a number of key areas.
- 1.4 The first WGAA, proposed by CE Electric (on behalf of the CUSC parties NEDL and YEDL) removes the requirement for a Statement of Works, and associated direct costs and indirect liabilities. Instead, it envisages the host DNO simply informing National Grid of any potential Medium Power Station connections. National Grid again would be responsible for establishing if the embedded generator connection had an impact upon the GB Transmission System. Should National Grid identify that the Medium Power Station has an impact upon the transmission system National Grid would be responsible for progressing the requisite works, while the Host DNO would agree not to energise the relevant Embedded Medium Power Station's connection until such time as National Grid had confirmed to the DNO that the works had been completed.
- 1.5 The second WGAA, proposed jointly by United Utilities and CE Electric is based upon the original amendment. It does not attempt to significantly amend the process contained within the original amendment, however it does seek to amend the timescales over which that process takes place. The WGAA amendment has been submitted without prejudice to CE Electric's views upon the original amendment proposal.
- 1.6 The majority of the members of the Working Group supported each of the proposed Alternative Amendments. In general most members believed that although both the original amendment and the two Working Group Alternative Amendments better facilitated the Applicable CUSC objectives as compared with the existing CUSC baseline, they believed WGAA1 was the superior followed by WGAA2 followed by the original amendment proposal.
- 1.7 The Working Group noted that changes to the STC might be needed as a result of CAP097. The National Grid members at the working group agreed that this subject would be raised and discussed further at the STC Committee.

### Working Group Recommendation

- 1.8 The Working Group recommends that the CAP097 CUSC Amendment Proposal, and the two Working Group Alternative Amendments, are now ready to proceed to wider industry consultation.

## **2.0 INTRODUCTION**

- 2.1 Recent developments in energy policy have seen a large increase in the volume of renewable generation projects attempting to connect to the Total System. A significant proportion of these projects are embedded within distribution systems.
- 2.2 It is against this background that National Grid has proposed CAP097. It seeks to clarify the process in CUSC 6.5. Currently the clause prohibits a User that owns or operates a Distribution Network from energising the connection of an embedded power station until National Grid has confirmed that the appropriate Bilateral Agreement (if any) is in place.
- 2.3 National Grid believes CUSC 6.5 needs to be clarified for the following reasons:
- The CUSC is not clear on the relevance of clause 6.5 to power stations that do not have to enter into a Bilateral Agreement. One interpretation is that a DNO should contact National Grid prior to the energisation of any embedded power station. However a second interpretation would be that a DNO should only contact National Grid prior to energising an embedded power station that is subject to a bilateral agreement.
  - Should the Grid Code LEEMPS proposals be approved by the Authority and implemented it would no longer be the case that a Medium Power station would have an agreement with National Grid. In such circumstances it would be necessary to develop the existing CUSC 6.5 process such that it is not reliant on the existence of a Bilateral Agreement.
- 2.4 To facilitate the above National Grid proposed CAP097. This was presented to the CUSC Panel at its July Meeting. CAP097 as presented to the CUSC Panel proposed the introduction of a Statement of Works, for which reasonable charges would be levied by National Grid. This request would be made by the DNO to National Grid upon the application by an Embedded Generator to connect to the DNO's system. Applications would be required for all Embedded Medium Power Stations and any Embedded Small Power Stations connected to the same voltage level as the LV side of the Grid Supply Point.
- 2.5 Upon this request National Grid would assess the impact (if any) that the proposed Embedded Power Station had on the GB Transmission System. Should there be an impact on the GB Transmission System that required works to be undertaken the DNO would not be permitted to energise the Embedded Power Station's connection until National Grid had confirmed that these works had been completed.
- 2.6 The CUSC Panel discussed the amendment proposal and agreed that a Working Group should be formed to discuss the proposals in greater depth.

## **3.0 PURPOSE AND SCOPE OF WORKING GROUP**

- 3.1 The CAP097 Working Group is responsible for assisting the CUSC Amendments Panel in the evaluation of CUSC Amendment Proposal CAP097.
- 3.2 The proposals must be evaluated to consider whether they better facilitate 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.

3.3 In addition to assessing CAP097 against the applicable CUSC objectives the Working Group were also asked by the CUSC Panel to consider the following:

- (a) Inclusion of relevant Connectees (i.e. owners of Small and Medium Power Stations) in the change governance process. As they are not CUSC Parties they are not by default included in the Consultation process, but they are affected by the proposed amendment.
- (b) Definition of "Small" can apply to 1MW connected at 33kV. The Working Group should therefore consider the definition of a Small Power Station in a "creative" way.
- (c) Consideration of Scottish Companies, and clarification of whether the Scottish definitions or England and Wales definitions of Small, Medium and Large are applied, or any combination thereof.
- (d) The Working Group is asked to consider if there are any interactions with Grid Code Working Group on Small, Medium and Large Thresholds.
- (e) The Working Group is also asked to consider whether there are any interactions with the Grid Code consultation on Licence Exemptable Embedded Medium Power Stations.

## **4.0 WORKING GROUP DISCUSSIONS**

4.1 The Working Group have carefully considered CAP097 and the primary issues that arose during the Working Group discussions were as follows:

- Proportionality of the original proposal
- Consideration of how the Statement of Works would interact with the Modifications process
- Consideration of the timescales associated with any Modification.
- Consideration of the provision of financial security for any works
- Consideration of how "Site-Specific Requirements" for the Embedded Power Station would be enforced
- Consideration of the Amendment Proposal on Small Power Stations.

## **4.2 Proportionality**

4.2.1 National Grid believes that the proposed amendment would have the following benefits:

- Paragraph 6.5 is primarily designed to enable National Grid (and post BETTA the Transmission Owners in Scotland where applicable) to ensure that the Transmission System is adequately designed prior to the connection of embedded generation. As the impact upon the Transmission System of a single 250MW Embedded Power Station is in many respects the same as five 49.9MW Embedded Power Stations in a similar locality there is a need to assess the impact of a proposed connection against the relevant security standards regardless of licensing thresholds. This is to ensure compliance at the local Grid Supply Point and also wider assessment across the Transmission System and to ensure equipment is maintained within ratings. An awareness of those Power Stations that may cause an impact upon the Transmission System either individually or in aggregate will therefore facilitate the development of the Transmission System in an efficient and co-ordinated manner by National Grid.

- The Proposed Amendment will enable National Grid to more easily fulfil its duties to facilitate effective competition in generation and to avoid potential discrimination between licensed and unlicensed generation. In the example given above (if the Power Stations concerned were located in England and Wales) the proposed connection of the 250MW Embedded Power Station would be notified to National Grid prior to energisation. National Grid would also be able to prevent energisation prior to any relevant Transmission Works being completed. The owner of the 250MW Power Station would also provide financial security against these transmission works that it has triggered. However the 49.9MW Embedded Power Stations would not be directly notified to National Grid and National Grid would not be able to prevent their energisation until any required transmission works had been completed. Similarly the owners of the Power Stations would not financially secure any transmission works triggered by the 49.9MW Embedded Power Stations. Rather any liabilities for Final Sums would either be borne by the wider Industry or National Grid. National Grid believes that the proposed amendment better allows the parties triggering the need for transmission works to bear the financial risk associated with such works<sup>1</sup>. National Grid believes this to be more appropriate than either the wider Industry or National Grid bearing this risk.

4.2.2 Working Group members questioned a number of these issues. Specifically, it was suggested that:

- the issue of cumulative impact, while relevant, is not in the view of some Working Group Members addressed by the original proposal. The draft legal text explicitly links the statement of works and all direct costs and indirect liabilities to individual developments. This may be disproportionate;
- issues at the connection point could be dealt with under the existing Modification Application process and some Working Group Members did not support the National Grid proposals in relation to Final Sums, and had some concerns as to the associated timescales;
- potential current differences in the treatment of generators with or without an agreement or a TEC were, some Working Group Members felt, appropriate.

4.2.3 On the first point National Grid countered that the cumulative effect is, in their view, adequately catered for. Any security for Final Sums triggered by embedded developments is passed onto the DNO and not the individual projects themselves. The DNO through passing on such risk and in fulfilling its non-discrimination provisions will then be incentivised to pass on the liability to those parties causing the financial liability. If the liability is triggered by more than one project then the DNO may pass on this liability proportionately to all parties.

4.2.4 On the second point, while the existing CUSC baseline allows for works at a Connection Site to be dealt with it does not necessarily allow for wider transmission works to be dealt with in the case of Small and Medium Embedded Power Station connections. This is one of the reasons why CAP097 has been proposed.

### **4.3 Modifications Process:**

4.3.1 There were a number of questions raised by the Working Group regarding how the Statement of Works process envisaged by CAP097 would interact with the existing Modifications process. National Grid clarified that should transmission works be required as a result of the connection of a Small or

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<sup>1</sup> On the assumption the DNO passes on the financial liability to the party triggering the works.

Medium Embedded Power Station then the intention would be to progress these through the Modification with the DNO. The extent of the works covered by such a modification was then also queried by the Working Group – would the DNO only be expected to proceed through the Modifications process if there were works on the Grid Supply Point (GSP) Connection Site or would there also be a Construction Agreement required if the works were transmission reinforcements that were distant from the Connection Site for the GSP. National Grid confirmed that they would envisage the DNO entering into a Construction Agreement wherever transmission works were triggered. It was then noted that this would possibly require a further change to the definition of a “Modification” within the CUSC to allow this approach. National Grid agreed to include such necessary changes within its legal text.

- 4.3.2 Some Working Group members did not support with this approach, reflected in the two WGAAAs raised. WGAA 1 takes a radical approach, requiring no agreements to be entered into. WGAA 2 removes the need for a Modification unless works are required at the Connection Site: however, it provides for a construction agreement to be entered into if required.

#### **4.4 Timescales:**

- 4.4.1 The timescales associated with any Statement of Works were then also discussed. The intention of the original amendment was that the process of a DNO producing a connection offer should not be unduly delayed by any request for and any subsequent production of a Statement of Works. In order to achieve this within the 3-month period a DNO has to produce its connection offer to the Embedded Generator the following process and timescales have been incorporated within the process.
- 4.4.2 A DNO shall submit a Request for a Statement of Works and provided it is complete and any appropriate fee paid the “clock” will start.
- 4.4.3 Within 28 days of the submission of a Request for a Statement of Works, National Grid shall respond to the DNO and state whether any Site Specific Requirements are required for the Embedded Power Station or if there are any Transmission Works.
- 4.4.4 Should there be Transmission Works then the original Request for a Statement of Works will be deemed to be a Modification Application and National Grid will generate a Modification Offer to the DNO within 3 months of the original submission of a Request for a Statement of Works.
- 4.4.5 It was then pointed out that an Embedded Generator if it were to trigger Transmission Works may no longer wish to proceed with its project and as such not incur the costs associated with a full Modification Offer (it is assumed here that any costs incurred by the DNO would be passed through to the generator). To allow for such withdrawal, National Grid agreed to place a “break-point” in the process that would allow the process to be brought to a halt before the Embedded Generator incurred expenditure associated with a Modification. So as not to impact too greatly upon any subsequent production of a Modification Offer if the Embedded Generator wished to proceed this break-point has been incorporated as a five business day “cooling off period” following National Grid’s confirmation that works are required to the GB Transmission System.
- 4.4.6 Some members of the Working Group whilst welcoming the breakpoint in the process offered by the “cooling-off period” did not believe that the 5 Business Day period would be sufficient in all cases and that a longer period would be required. However these members also recognised that the three-month timescale for connection offers was prescribed through the licensing regime and as such could not be altered through an amendment to the CUSC. Instead the Working Group Members formulated a Working Group Alternative Amendment that sought to address the timescales associated with a Request for a Statement of Works as a pre-cursor to the formal Modification Process



rather than embedded within it. (Further details about this Working Group Alternative Amendment may be found in Section 5.0)

#### **4.5 Provision of Financial Security:**

- 4.5.1 The question of Financial Security for any transmission works was also discussed. National Grid agreed with the Working Group that the DNO would be required to provide financial security for any transmission works. In practice this would not result in the transfer of any actual monies as the DNO by virtue of maintaining the credit rating stipulated by its distribution licence automatically meets the requirements of an NGC Credit Rating.
- 4.5.2 It was suggested by some Working Group Members that, as there remained a financial risk, distributors would be obliged by their own non-discrimination obligations to back off these liabilities onto each individual developer. It was further noted that the cost of raising such security could be prohibitive for the combination of a 'small' generator and major transmission reinforcement works, and that these costs would in any case generally dissuade new entry and hence restrict competition in generation.
- 4.5.3 National Grid would counter that it is appropriate for any Power Station that triggers works whether it be 40MW or 400MW to bear the financial risk associated with such works in order that they be efficiently incurred. Currently where an Embedded Power Station does not have a direct relationship with National Grid there is no incentive to connect to a GSP where its energisation would not trigger transmission reinforcements. National Grid is of the view that CAP097 would provide such an incentive through providing the appropriate financial signals.

#### **4.6 Site-Specific Requirements:**

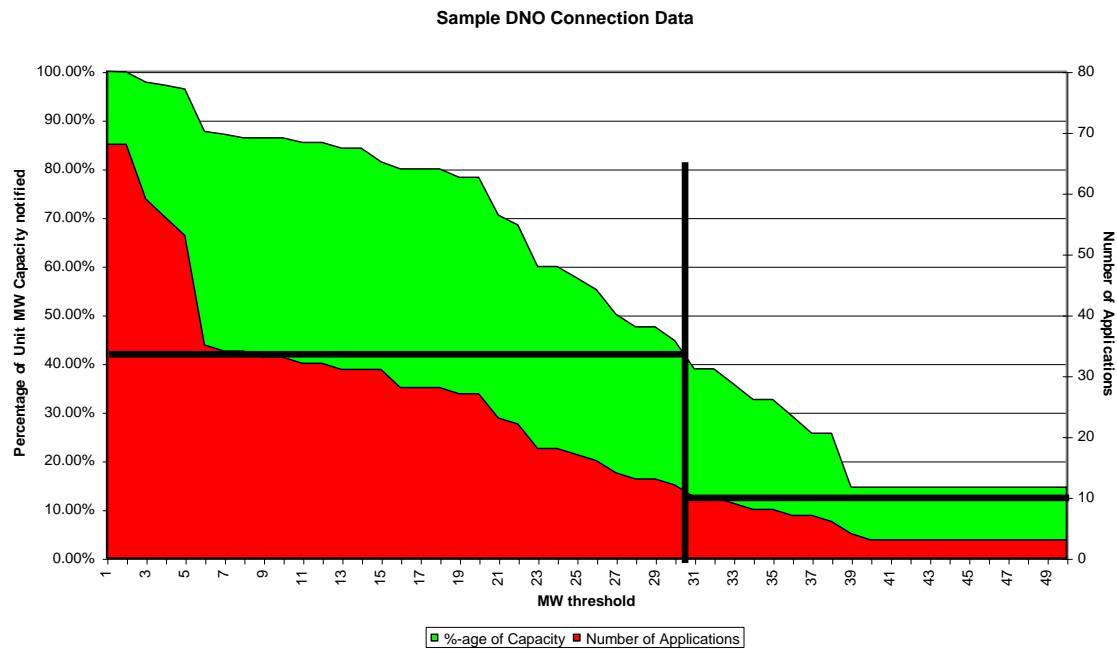
- 4.6.1 National Grid confirmed that there may be cases where it is currently stated in the Grid Code that certain site-specific technical conditions will be included in the User's Bilateral Agreement. Given that there may not be a Bilateral Agreement in place, National Grid proposed that such Site-Specific Requirements would be contained within any Statement of Works and that the CUSC would be modified to ensure that the DNO enforces these Site-Specific Requirements. The Working Group commented that it would be easier for the DNO to administrate such arrangements if any such Site Specific Requirements were appended to the existing DNO Bilateral Agreement for the relevant GSP. This would have the benefits that all obligations in respect of a single GSP would be in the same place. It would also remove the requirement to explicitly state within the CUSC that Site-Specific Requirements had to be enforced by the DNO, as they would be bound to them through existing obligations to conform to the Bilateral Agreement.

#### **4.7 Impact upon Small Power Stations:**

- 4.7.1 The Working Group debated at length the impact of CAP097 on Small Power Stations. National Grid stated that the proposals developed in CAP097 were based upon the proposals in CAP002 and the Authority's comments upon the CAP002 proposals. The legal drafting that was supplied to the Authority for CAP002 was as follows:

*"Any User who owns or operates a Distribution System shall not Energise the connection between a Power Station of [30]/[50]MW Registered Capacity or greater, or a Power Station (whatever its Registered Capacity) connected to the same voltage level as the LV side of the Grid Supply Point and its Distribution System by the same until the User has obtained from NGC a statement of works (if any) required to the NGC Transmission System and any User System to accommodate that Power Station and NGC has confirmed to the User that those works have been completed..."*

- 4.7.2 National Grid stated that the debate in the specific context of CAP002 was around the 30 or 50MW threshold in the context of a Distribution System energising a Power Station of 30/50 MW irrespective of where it was connected, and the CAP097 proposed limit in relation to this leg is now closely tied to specific “Medium” levels across GB, (i.e. above 50MW in England and Wales and 5MW in SPT’s area). The second aspect of this drafting then related to the energisation of “or a Power Station (**whatever its Registered Capacity**) connected to the same voltage level as the LV side of the Grid Supply Point”. In other words, all those Power Stations that are connected to the same voltage level as the LV side of the Grid Supply Point.
- 4.7.3 Given this historic precedent National Grid had phrased CAP097 in terms of applying to any Medium Power Station or a Small Power Station connected to the same voltage level as the LV side of the Grid Supply Point. This in effect was the same drafting of the version of the CAP002 text provided to the Authority.
- 4.7.4 The Working Group discussions then highlighted concerns regarding the potential capturing of all Small Power Stations connected to the same voltage level as the LV side of the Grid Supply Point. Some members of the Working Group stated that it would be highly inefficient for the DNO to have to submit a “Request for a Statement of Works” upon each and every connection to the Distribution System that is at the same voltage level as the LV side of the Grid Supply Point. This was especially the case when there exist Grid Supply points that supply voltages down to 11kV direct from the Transmission System and that very small Power Stations (<1MW) would be captured by the drafting.
- 4.7.5 To mitigate this effect some members of the Working Group suggested that a “De minimis” threshold be introduced into the drafting to limit the levels at which Small Power Stations should be notified to National Grid. Other members of the Working Group thought that the changes should reach further than this and that only Medium Power Stations should be notifiable and to this end proposed a Working Group Alternative Amendment (see Section 5.0 below)
- 4.7.6 National Grid responded that while it was unlikely though possible that a Small Power Station could individually have an impact upon the GB Transmission System it was the cumulative impact of several Small Power Stations connecting in a locality that concerned it.
- 4.7.7 To this end National Grid developed a mechanism that would require all Power Stations above a de-minimis level to be notified to National Grid and that there should be a GSP de-minimis level (both initially proposed at 5MW in order to fit with the existing upper limit of a Small Power Station in Scotland). This GSP de-minimis level would result in a DNO keeping track of the aggregate Embedded Power Station capacity installed at a GSP that had not previously been notified to National Grid. Once this capacity was in excess of the GSP de-minimis level the DNO would be required to submit a Request for a Statement of Works for the Power Station that broke the GSP de-minimis level.
- 4.7.8 The Working Group discussed this option and some members voiced the concern that this mechanism would place an unreasonable burden on DNOs and that it would ultimately result in every Embedded Power Station being notified to National Grid. In light of these concerns National Grid agreed to perform further analysis and attempt to construct a differing mechanism that would allow for the identification of the cumulative impact of a number of Small Power Stations connecting in a locality.
- 4.7.9 Subsequently National Grid was then able to perform the following analysis upon information on prospective DNO connections for a single DNO over a number of future years. This revealed the following:



4.7.10 The diagram above reveals that if the threshold were to be set at 30MW then approximately 45% of all future connecting capacity would be captured for 12 Requests for a Statement of Works. National Grid believes that such a de-minimis level helps to mitigate the concerns voiced by DNOs with regard to the possible additional workload whilst still achieving the desired aim from National Grid's point of view of capturing sufficient information about the cumulative effect of Small Power Stations upon the GB Transmission System such that National Grid can ensure that the system remains compliant.

4.7.11 The introduction of a de-minimis threshold of 30MW in relation to stations connected at the same voltage as the LV side of the Grid Supply Point also means that CAP097 is actually significantly less encompassing than the version of CAP002 that the Authority indicated may have been the most appropriate, as it no longer captures all such stations in a blanket fashion.

4.7.12 It was also suggested by some Working Group Members that, in some GSP groups in England & Wales, only half of GSPs ran at 132 kV, with the rest evenly disposed between 66 kV and 33 kV. They suggested that this means that any definition involving 'the LV side of the GSP' would create arbitrary (and therefore undue) discrimination between generation developments in close geographic proximity. The original proposal would also reduce transparency in the connections process, as different procedures would be required for otherwise identical developments dependant solely on the eventual electrical path. The situation is likely to be worse in Scotland.

## 5.0 WORKING GROUP ALTERNATIVE AMENDMENTS

### 5.1 Working Group Alternative Amendment 1 (WGAA1) proposed by CE Electric (on behalf of its subsidiaries and CUSC parties NEDL & YEDL).

#### 5.1.1 Form of Proposed Modification

5.1.2 To amend the CUSC drafting tabled by NGET to:

- remove references to small power stations, consistent with LEEMPS;
- restrict site-specific requirements for Medium Power Stations to those required under Grid Code, consistent with LEEMPS; and
- delete the statement of works, relying instead on an advisory exchange between NGET and DNOs

5.1.3 This proposal is predicated on the premise that:

- small power stations have negligible impact on the transmission system, either at connection points<sup>2</sup> or on the MITS; and
  - it would be disproportionate to establish a financial liability on small and medium power station developers in respect of transmission reinforcement works. Even if this liability is only in respect of final sums, the cost of securing bonds sufficient to cover the magnitude of works required may exceed the other costs of the development.
- 5.1.4 CE willingly accept that distributors have a role in supporting the efficient development of the transmission system. We therefore accept both:
- an information exchange between distributors and NGET on likely relevant connections; and
  - if necessary, deferral of generation connection until any necessary transmission reinforcement has been carried out.
- 5.1.5 However, CE cannot accept the CUSC drafting submitted by NGET, on two grounds:
- it goes beyond the scope of LEEMPS by seeking to include small power stations connected to GSPs; and
  - it introduces a liability for transmission reinforcement that is not provided for in the body of CUSC.
- 5.1.6 CE submit that, in pursuance of the duty to facilitate competition in generation that is common to both distributors and transmitters, a clear and transparent process for making generation connections to distribution systems is required. While this must have regard to the impact on the transmission system, any restrictions must be proportionate.
- 5.1.7 Seeking to capture small power stations connected to the lower voltage side of GSPs is both discriminatory and disproportionate. It was initially suggested that this will apply only to 132 kV-connected sites, but:
- in Scotland, both 33 kV and 11 kV connected generation would be captured;
  - in CE, of 40 GSPs (taking sites with both 132 and 66 kV bars as two):
    - only half (21) are 132 kV;
    - 9 are 66 kV;
    - 9 are 33 kV; and
    - one is 20 kV.
- 5.1.8 Therefore, from the Hebrides to the Humber, a significant number of small power stations not connected to 132 kV systems would be captured by NGET's proposed wording. Further, there would be an artificial discrimination between customers simply because they were connected to different GSPs, for example CHP sets connected at 33 kV, but on opposite sides of York.
- 5.1.9 This is not conducive to transparency in the wider connections process. It is not practicable to use the Long-Term Development Statement to indicate reliably the likely GSP to which embedded generation would be connected. Particularly at 20 and 11 kV, this can change over time (even in operational timescales).
- 5.1.10 While CE recognise that small power stations will affect fault level, CE submit that:
- this impact is marginal; and
  - the issue can readily be managed through the existing modifications process.
- 5.1.11 Many small power stations will be connected to distribution systems by means of an interposing transformer. This is particularly true of wind farms, and will significantly reduce fault infeed. It may be possible to address this by careful wording in respect of 'direct connection' to the same voltage level as

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<sup>2</sup> Even if the case were made that small power stations could, individually or in aggregate, adversely impact connection points (e.g. through increasing fault level), this alternative amendment assumes that this may readily be dealt with through the existing Modifications process.

the LV side of the grid supply transformer, but issues of proportionality and transparency remain.

- 5.1.12 It is also far from clear that small power stations will have a material impact on the MITS.
- 5.1.13 Put another way, CE submit that it is only medium power stations that have a material impact upon the transmission system. If small power stations cannot be ignored for transmission network & asset management, then the role (or at least the current quantification) of the category is called into question.
- 5.1.14 This does not preclude revisiting the quantification of 'small' under Grid Code. This amendment also facilitates an appropriate degree of harmonisation or, as appropriate, differentiation between transmission network zones, through the definition of 'small' rather than unduly affecting CUSC drafting.
- 5.1.15 National Grid countered that changing the definition of Small in the Grid Code would also result in numerous other (and in this case potentially unnecessary) Grid Code obligations to be placed upon power stations (e.g. provision of Mandatory Ancillary Services). The objective of CAP097 is not to continually monitor Small Power Stations but rather ensure that their energisation does not cause issues upon the Transmission System. Once this has been established initially National Grid sees no further requirement for an ongoing compulsory contractual relationship with Small Power Stations and hence believe that the issues CAP097 seeks to address are better served through an amendment to the CUSC rather than an amendment to the Grid Code definition of Small.
- 5.1.16 The requirement to seek distributors (and therefore ultimately developers) to under-write transmission works beyond connection assets goes beyond the charging provisions of CUSC. Section 2 is clear that financial liabilities arise only in respect of connection assets, for which existing modification processes exist. It is not yet clear why a new liability in respect of other works should arise, and why this should not be funded as Licence Compliance Works.
- 5.1.17 National Grid countered that where you can reasonably foresee works being triggered by a single party or group of parties and transmission works are required prior to their energisation to allow the transmission system to remain compliant then it seems most reasonable to carry out such works prior to the energisation of the Power Stations and to secure any financial liabilities upon those Power Stations (through the host DNO).
- 5.1.18 On a related issue, the current exhibits are not consistent with the body of CUSC in this respect.

## **5.2 Working Group Alternative Amendment 2 (WGAA2) proposed by CE Electric and United Utilities**

- 5.2.1 This Working Group Alternative Amendment seeks to simplify the process proposed by NGET, to clarify that the statement of works is an initial assessment by NGET of whether or not transmission works or site-specific conditions are required to connect a relevant power station.
- 5.2.2 This drafting then uses existing provisions in CUSC for entering into construction agreements and agreements to vary Bilateral Agreements. This allows us to start the 90-day clock only when the distributor submits that formal application: it also covers off issues such as charging for system studies, construction agreements (and hence final sums liabilities) and the inclusion of site-specific requirements in the revised bilateral.
- 5.2.3 For the purposes of this exercise, the NGET position on what is relevant has been adopted, without prejudice to the spirited rebuttal of that position by the CE representative on the working group.
- 5.2.4 The highlighted proposed amendment to 1.3.2 (here, baseline is existing CUSC text) seeks to build upon existing processes by clarifying that, to accommodate relevant embedded power stations, distributors may need to

enter into construction agreements (to cover timing of works, final sums liabilities, etc.) and agreements to vary Bilateral Agreements (to cover site-specific requirements). The insertion of 'his' is intended to link the obligations over change of use in respect of embedded power stations subject to bilateral to the User who holds those Bilateral Agreements.

- 5.2.5 It is assumed here that issues that genuinely affect the interface (e.g. fault level) will be addressed via the existing modification process, informed if necessary by the statement of works.
- 5.2.6 The highlighted proposed amendment to 6.5 (here, baseline is NGET proposal) seeks to clarify that the statement of works is an opinion from NGET on the need to vary Bilateral Agreements or enter into construction agreements. It then creates an explicit link to the amended 1.3.2, and to the existing Modification Application process, to secure that the appropriate agreements are entered into.
- 5.2.7 It should be noted that WGAA2 is likely in many cases to require the DNO to seek agreement from Ofgem to providing an offer for connexion outside the 90 day timescale allowed in the distribution licence.

## **6.0 ASSESSMENT AGAINST APPLICABLE CUSC OBJECTIVES**

### **Original Amendment**

- 6.1 The proposer, and the majority of members of the Working Group, consider that the original CAP097 proposal would enable National Grid to more easily and efficiently discharge its obligations under the Act and the Transmission Licence. It would through the early identification of Embedded Generation projects to National Grid and the ability of National Grid to assess the impact of such projects upon the GB Transmission System it would allow National Grid to take pre-emptive action to ensure its transmission system is compliant with its transmission licence standards.
- 6.2 One working group member submitted that the final drafting of the National Grid proposal could potentially impact competition in generation, by placing disproportionate obstacles in the way of developers of small projects.
- 6.3 National Grid also believes that the original amendment enables National Grid to more easily and efficiently discharge its obligations under the Act and the Transmission Licence through the CAP097 linkage with the Modification process. The fact that any transmission reinforcement works triggered by an Embedded Medium or Small Generator will be financially secured means that it is much more likely that such expenditure will be efficiently incurred. This reasoning is based upon the fact that there will be a financial commitment to a project meaning that it is much less likely that part way through the construction of the transmission reinforcement works an Embedded Generation project will no longer wish to proceed. This assumption is made upon the basis that a DNO would pass on some or all of its financial liability to the Embedded Power Station owner.
- 6.4 This position was not universally accepted by the working group. It was questioned whether major transmission reinforcement could be deemed to be efficient if predicated on a single, relatively small, generation development.

### **Working Group Alternative Amendments**

- 6.5 The majority of the members of the Working Group supported each of the proposed Alternative Amendments. In general most members believed that although both the original amendment and the two Working Group Alternative Amendments better facilitated the Applicable CUSC objectives as compared with the existing CUSC baseline, they believed WGAA1 was the superior followed by WGAA2 followed by the original amendment proposal. On the specific Alternative Amendment proposals:

#### **Working Group Alternative Amendment 1**

- 6.6 One member of the Working Group believes that WGAA1 fully supports the efficient development of the transmission system, by providing for information exchange in respect of medium power stations. The case has still to be made for small power stations, connected at any voltage (for that is the impact of the original proposal) having such an impact on the transmission system that studies are required.
- 6.7 The same member of the Working Group also believes that this WGAA1 facilitates the duty to facilitate competition in generation common to both distributors and transmitters. It promotes transparency through a clear definition of scope (i.e. medium power stations) and avoids creating disproportionate financial liability.
- 6.8 Another member again supported WGAA1 stating that if CAP097 is intended to address the issues surrounding medium power stations as a consequence of the LEEMPS proposals then it need not mention small power stations at

all. Furthermore, the same member believes that the inclusion of small power stations in the proposal, even with a threshold of 30MW, effectively extends the reach of the Grid Code below the current thresholds. Should National Grid wish to extend the reach of the Grid Code then it should be done through an amendment to the Grid Code, not through the CUSC. The Working Group Member believes that the references to small power stations should be removed completely from CAP097.

- 6.9 Another member of the Working group also supported WGAA1 stating that they agreed with the assertion that the interactions with other areas must be considered, but that their main concern was for the facilitation of competition. Any barriers to entry for new participants, especially on the scale that they believed could be caught by this proposal, need to be well justified, and they were not convinced that this has been the case. The charge for the provision of a Statement of Works made is the Working Group member's primary concern, and from that perspective Working Group Alternative Amendment 1 must be preferable. The Working Group Member believes that as long as National Grid are aware of the connection applications the advantages for competition must surely outweigh the concerns over efficient co-ordination of the system when dealing with plant on this scale

### **Working Group Alternative Amendment 2**

- 6.10 With regard to WGGAA2 some members of the Working group stated their belief that it better facilitates the applicable CUSC objectives by providing a clear route for commissioning any transmission works necessary to facilitate the connection of embedded generation, thereby supporting the efficient, co-ordinated and economical development of the transmission system.
- 6.11 Some Working Group members also believed that WGAA2 better facilitates the applicable objectives than the original amendment, as it better facilitates competition in generation, through placing less onerous timescales upon developers.

## **7.0 PROPOSED IMPLEMENTATION AND TIMESCALES**

- 7.1 It is proposed that should the Authority approve the original CAP097 proposal, or any of the Working Group Alternative Amendments, implementation should be 10 business days after the Authority decision.

## **8.0 IMPACT ON CUSC**

- 8.1 The original CAP097 proposal or any of the Working Group Alternative Amendments will require a number of changes to Section 6 of the CUSC. In addition WGAA2 would also necessitate changes to section 1 of the CUSC. These changes are set out in the legal text in Annex 4.

## **9.0 IMPACT ON INDUSTRY DOCUMENTS**

### **Impact on Core Industry Documents**

- 9.1 None.

### **Impact on other Industry Documents**

- 9.2 Should either the original CAP097 or either WGAA be implemented there may be an impact upon the SO-TO Code. One member of the STC



Committee has provided an initial view on the impact of CAP097 upon the STC. This is as follows:

- 9.3 Although in Scotland, Users' contractual relations are with NGET – it remains the duty of the Scottish Transmission Licensees to plan and develop their transmission systems. Thus if a User applies to NGET for a connection, then under the STC, NGET makes an appropriate application to the relevant Scottish Transmission Licensee.
- 9.4 There are deficiencies with the STC and the STCPs as currently formulated in respect of these different change proposals:
- Currently arrangements are in place between NGET and the Scottish Transmission licensees for dealing with embedded large power stations in Scotland when a User makes an application for an agreement. There are no such arrangements in place for dealing with embedded medium power stations. While I would expect that the arrangements in respect of embedded medium power stations would be similar to those for embedded large power stations, no impact analysis has been conducted of the result of the extra work.
  - In respect of the Original Amendment Proposal and the Working Group Alternative Amendment 2 it should be noted that there are no arrangements in place in the STC in respect of a “Statement of Works”. I believe that changes would be needed to the STC to implement this proposal.
  - In respect of the Working Group Alternative Amendment 1, there are no arrangements within the STC which would allow NGET to consult with the TOs to establish whether works are required on the GB Transmission System, and thus that a Modification Application should be raised.
- 9.5 The STC Committee has carried out no formal analysis on the impact of the above proposals, but the above preliminary analysis suggests in the view of the STC Committee member that there would be an impact.

## **Annex 1 – Working Group Terms of Reference and Membership**

### **RESPONSIBILITIES**

1. The Working Group is responsible for assisting the CUSC Amendments Panel in the evaluation of CUSC Amendment Proposal CAP097 tabled by National Grid at the Amendments Panel meeting on 29<sup>th</sup> July 2005.
2. The proposal must be evaluated to consider whether it 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 Proposal and consider if the proposal 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:
  - Inclusion of relevant Connectees (i.e. owners of Small and Medium Power Stations) in the change governance process. As they are not CUSC Parties they are not by default included in the Consultation process, but they are affected by the proposed amendment.
  - Definition of “Small” can apply to 1MW connected at 33kV. The Working Group should therefore consider the definition of a Small Power Station in a “creative” way.
  - Consideration of Scottish Companies, and clarification of whether the Scottish definitions or England and Wales definitions of Small, Medium and Large are applied, or any combination thereof.
  - The Working Group is asked to consider if there are any interactions with Grid Code Working Group on Small, Medium and Large Thresholds.
  - The Working Group is also asked to consider whether there are any interactions with the Grid Code consultation on Licence Exemptable Embedded Medium Power Stations.
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 Proposal, 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 Proposal or any Working Group Alternative Amendment arising from the Working Group's discussions should be clearly described in the final Working Group Report to the CUSC Amendments Panel.

8. The Working Group is to submit their final report to the CUSC Panel Secretary on 20<sup>th</sup> October 2005 for circulation to Panel Members. The conclusions will be presented to the CUSC Panel meeting on 28<sup>th</sup> October 2005.

## **MEMBERSHIP**

9. It is recommended that the Working Group has the following members:

Chair	Ben Graff
National Grid	Mark Duffield
Industry Representatives	Alec Morrison (SSE) Andrew Neves (Central Networks) David Miller (CE Electric) Jon Capener (British Energy) Joe Duddy (RES Ltd) Mark Nixon (RWE) Mike Attree (United Utilities) Mike Harrison (Scottish Power) Rupert Judson (EdF) Mark Symes (GdF)

Authority Representative	Bridget Morgan
Technical Secretary	Lilian Macleod

[NB: Working Group must comprise at least 5 Members (who may be Panel Members) and will be selected by the Panel with regard to WG List held by the Secretary]

10. The membership can be amended from time to time by the CUSC Amendments Panel.

## **RELATIONSHIP WITH AMENDMENTS PANEL**

11. 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.
12. 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.

## **MEETINGS**

13. 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.

## **REPORTING**

14. The Working Group Chairman shall prepare a final report to the 28<sup>th</sup> October 2005 Amendments Panel responding to the matter set out in the Terms of Reference.
15. A draft Working Group Report must be circulated to Working Group members with not less than five business days given for comments.
16. Any unresolved comments within the Working Group must be reflected in the final Working Group Report.
17. The Chairman (or another member nominated by him) will present the Working Group report to the Amendments Panel as required.

## Annex 2 – Amendment Proposal Form

<b>CUSC Amendment Proposal Form</b>	<b>CAP: 097</b>
<b>Title of Amendment Proposal:</b>  Revision to the contractual requirements for Small and Medium Embedded Power Stations under CUSC 6.5.	
<b>Description of the Proposed Amendment</b> ( <i>mandatory by proposer</i> ):  This Amendment Proposal clarifies NGC's requirements from Embedded Small and Medium Power Stations in order to efficiently discharge its obligations imposed through the Transmission Licence and the Act. In setting out the requirements this Amendment Proposal recognises the Grid Code LEEMPS proposal in relation to the NGC/ DNO / Medium Power Station interfaces and seeks to ensure the CUSC processes under CUSC 6.5 are consistent with the requirements of the Grid Code.  This Amendment Proposal therefore includes additional requirements that whilst stand-alone support proposals by the LEEMPS working group under the Grid Code. The Grid Code changes are based on an indirect relationship between NGC and Embedded Medium Power Stations, facilitated via the DNO. The DNO would ensure the Embedded Medium Power Station complies with the relevant requirements of the Grid Code, including the provision of information to allow NGC to assess the impact of an Embedded development on the Transmission System.	
<b>Description of Issue or Defect that Proposed Amendment seeks to Address</b> ( <i>mandatory by proposer</i> ):  The existing wording of clause 6.5.1 is ambiguous on the need for a contractual agreement between an Embedded Generator and National Grid. The current generation licensing arrangements are that Embedded Generators that are less than 100 MW could apply for and generally receive a Derogation from the need to hold a Generation Licence and hence accede to the CUSC. The contractual framework largely assumes that NGC will enforce the requirement of the Grid Code directly through the CUSC. This modification, along the current LEEMPS proposals under the Grid Code, seek to clarify that Embedded Medium Power Stations do not require a direct contractual relationship with NGC. However, NGC would still need to assess and address their impact on the Transmission System prior to them becoming connected and require them to comply with the relevant sections of the Grid Code.	
<b>Impact on the CUSC</b> (this should be given where possible):  In line with the above proposals NGC propose that the CUSC may need to be modified in the following manner: <ul style="list-style-type: none"><li>• Introduce provisions that following the notification by a User who owns or operates a Distribution System to NGC of a proposed connection to that User's System NGC may provide where necessary a Statement of Works relating to the proposed connection. Such Statement of Works would specify the Works (if any) that are required to facilitate the Use of the GB Transmission System by the Small or Medium Power Station. The provisions included within the CUSC would also specify the timescales in which NGC should provide such an offer</li><li>• Introduce provisions through which NGC may make a reasonable charge for assessing the impact of the connection to the User's System on the GB Transmission System</li><li>• Place obligations upon the User who owns or operates the Distribution System to provide<ul style="list-style-type: none"><li>• details of the Small or Medium Power Station in accordance with the Grid Code upon requesting the Statement of Works</li><li>• notification to NGC in the event that the proposed date of connection of the Small or Medium Power Station changes and upon such notification request a revised Statement of Works</li></ul></li><li>• Obligations to ensure that the User who owns or operates the Distribution System shall</li></ul>	

<p>continue to ensure that the Small or Medium Power Station continues to comply with the relevant site specific requirements provided through the Statement of Works and the relevant requirements of the Grid Code at all times subject as otherwise provided for under the CUSC.</p> <ul style="list-style-type: none"> <li>Modify the existing CUSC section 6.5.1 (a) to specify that a User who owns or operates a Distribution System shall not Energise such a connection between a Medium Power Station or Small Power Station until NGC has confirmed to that User that NGC has completed the Works listed in the Statement of Works for such Small or Medium Power Station.</li> </ul>
<p><b>Impact on Core Industry Documentation</b> <i>(this should be given where possible):</i></p> <p>Although not a Core Industry Document, there may also be the need to modify the NGC Charging Statements in order to specify the methodology behind any reasonable charge that NGC may make for the provision of the Statement of Works.</p>
<p><b>Impact on Computer Systems and Processes used by CUSC Parties</b> <i>(this should be given where possible):</i></p> <p>None</p>
<p><b>Details of any Related Modifications to Other Industry Codes</b> <i>(where known):</i></p> <p>The Grid Code Review Panel has just completed a review of Licence Exempt Embedded Medium Power Stations. This Amendment Proposal seeks to ensure that the proposed changes identified for the Grid Code identified in D/05 can be efficiently implemented.</p>
<p><b>Justification for Proposed Amendment with Reference to Applicable CUSC Objectives**</b> <i>(mandatory by proposer):</i></p> <p>The changes proposed would remove the current ambiguity in CUSC 6.5.1, align the relationship between NGC, DNOs and Generators to the current Licensing framework established under 'The Electricity (Exemption from the Requirement for a Generation Licence) (England and Wales) Order 2002', and support the implementation of the changes proposed through the Grid Code Review Panel LEEMPS working group.</p> <p>In combination, these will better facilitate NGC in the efficient discharge of the obligations imposed upon it under the Act and by the Licence, more specifically those under licence condition C14, amongst others.</p> <p>The proposal will also facilitate 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 though ensuring the requirements in the CUSC and Grid Code are as transparent as possible and avoid any undue discrimination.</p>

<p><b>Details of Proposer:</b> Organisation's Name:</p>	
<p><b>Capacity in which the Amendment is being proposed:</b> (i.e. CUSC Party, BSC Party or "energywatch")</p>	<p><b>CUSC Party</b></p>
<p><b>Details of Proposer's Representative:</b> Name: Organisation: Telephone Number: Email Address:</p>	<p>Mark Duffield National Grid Transco 01926 654971 <a href="mailto:mark.duffield@ngtuk.com">mark.duffield@ngtuk.com</a></p>

<b>Details of Representative's Alternate:</b> Name: Ben Graff Organisation: National Grid Transco Telephone Number: 01926 656312 Email Address: <a href="mailto:ben.graff@ngtuk.com">ben.graff@ngtuk.com</a>
<b>Attachments: No</b>
<b>Title and No. of pages of each Attachment:</b>

## **Annex 3 – Internal Working Group Procedure**

### CAP097 Working Group

#### INTERNAL WORKING PROCEDURES

1. Notes and actions from each meeting will be produced by the Technical Secretary (provided by National Grid) and circulated to the Chairman and Working Group members for review.
2. The Meeting notes and actions will be published on the National Grid CUSC Website after they have been agreed at the next meeting or sooner on agreement by Working Group members.
2. The Chairman of the Working Group will provide an update of progress and issues to the Amendments Panel each month as appropriate.
4. Working Group meetings will be arranged for a date acceptable to the majority of members and will be held as often as required as agreed by the Working Group in order to respond to the requirements of the Terms of Reference set by the Amendments Panel.
5. If within half an hour after the time for which the Working Group meeting has been convened the Chairman of the group is not in attendance, the meeting will take place with those present.
6. A meeting of the Working Group shall not be invalidated by any member(s) of the group not being present at the meeting.



**Annex 4 – Proposed Text to Modify CUSC**

**Part A – Indicative text to give effect to the Proposed Amendment**

**Part B – Indicative text to give effect to Working Group Alternative Amendment 1**

**Part C – Indicative text to give effect to Working Group Alternative Amendment 2**