

Direct Dial: 020-7901-7410

10- June-2005

The National Grid Company, CUSC Signatories and Other Interested Parties

Your Ref: CAP076

Our Ref: IND/COD/CUSC/CAP076

Dear Colleague,

Amendment to the Connection and Use of System Code (CUSC) - Decision and notice in relation to Proposed Amendment CAP076: Treatment of System to Generator Intertripping Schemes

The Gas and Electricity Markets Authority (the Authority¹) has carefully considered the issues raised in the Amendment Report² in respect of Proposed Amendment CAP076 Treatment of System to Generator Intertripping Schemes.

National Grid Company plc (NGC) recommended to the Authority that Original Proposed Amendment CAP076 should be approved. In the event that the Authority approves either Original Proposed Amendment CAP076 or one of the four alternative Amendment Proposals, NGC recommended an implementation date of 25 business days following an Authority decision.

Having carefully considered the Amendment Report and NGC's recommendation and having regard to the Applicable CUSC Objectives³ and the Authority's wider statutory duties⁴, the

¹ Ofgem is the office of the Authority. The terms Ofgem and the Authority are used interchangeably in this letter

² CAP076 Amendment Report dated 2 March 2005.

³ The Applicable CUSC Objectives are contained in Standard Condition C10 of the licence to transmit electricity treated as granted to NGC under Section 6 of the Electricity Act 1989 (the "Transmission Licence") and are:

⁽a) the efficient discharge by the licensee of the obligations imposed upon it under the Act and by this 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.

⁴ Ofgem's statutory duties are wider than the matters that NGC must take into consideration and include, amongst other things, social and environmental guidance provided to Ofgem by the government, to contribute to achievement of sustainable development and to have regard to the principles of best regulatory practice.

Authority has decided to direct a modification to the CUSC in accordance with Original Proposed Amendment CAP076.

A separate letter contains a direction to NGC to modify the CUSC in accordance with the modification proposal as set out in the Amendment Report.

This letter explains the background to Proposed Amendment CAP076, as set out in the Amendment Report, and sets out the Authority's reasons for its decision. This letter also constitutes the notice by the Authority under Section 49A of the Electricity Act 1989 in relation to the direction.

Background

Amendment Proposal CAP076 was raised by NGC on 20th August 2004. Original Amendment Proposal CAP076 seeks to introduce a revised framework for System to Generator Intertripping Schemes. An intertrip is a device that may be armed so that it automatically trips a breaker that removes a generator from the transmission system when it receives a specific signal. The signal is delivered if a predetermined fault on a specific part of the transmission system occurs. The requirement for an intertrip is usually identified at the time of a connection offer to a generator, and is specified within the Bilateral Connection Agreement (BCA) that is agreed between NGC and the generator for that connection. The site specific details for arming and operation are captured within Appendix F3 of the BCA.

CAP076 aims to clarify the obligations between NGC and the associated generator in the area of the arming and operation of the Scheme. In addition, the proposal aims to establish an administered pricing mechanism within the CUSC for certain categories of intertrips.

At present, the operation of certain operational intertrip scheme results in a compensation payment becoming payable to a generator if it is tripped off the transmission system if a predetermined fault occurs. The compensation for the operation of an operational intertrip is dealt with under the terms of the Grid Code⁵ and Balancing and Settlement Code⁶ (BSC). These codes stipulate that if an intertrip operates, a Bid-Offer Acceptance (BOA) is issued. This BOA continues until the end of that Balancing Mechanism window.

Damhead Creek Incident

On 19 May 2004, NGC determined that a piece of high voltage equipment was showing signs of distress and needed to be taken out of service as soon as possible in order to prevent an unsafe situation. The location of the distressed equipment meant that it was necessary to stop Damhead Creek power station exporting to the transmission system. At 12:51 BST on 19 May 2004, NGC issued an Emergency Instruction to Damhead Creek to perform a controlled shutdown and desynchronise the BM Unit as quickly as possible. The power station complied with the instruction and the equipment was isolated safely. In this case, Damhead Creek's prevailing Bid price for a large proportion of the Acceptance Volume was -£9,999/MWh. Approved Modification P172⁷ revised the way in which Acceptances linked to Emergency

⁵ Grid Code - Balancing Code No2, Post Gate Closure Actions, Physical Operation of BM Units, Synchronising and De – synchronising times

⁶ Balancing and Settlement Code - Section Q, Balancing Mechanism Activities, Balancing Mechanism Bid-Offer Acceptance

⁷ The Authority's decision on this Modification Proposal can be found at the following address:

Instructions are included in the calculation of cash out prices. Under Approved Modification P172, NGC, as SO, can identify whether a System Balancing related Emergency Instruction has occurred. Where this is the case the System Balancing related Emergency Instruction is unpriced and its impact removed from Energy Imbalance Prices. The interactions between these arrangements and the intertrip arrangements are discussed later in this decision letter.

The then prevailing Grid Code and BSC arrangements relating to the issuance of an automatic BOA pursuant to the acceptance of an emergency instruction, also apply in the event that an intertrip fires. The Damhead Creek incident demonstrated that acceptances of high negative Bid prices, which could be posted by an intertrip provider, can have a significant effect on the charges that market participants face through Balancing Services Use of System (BSUoS) charges.

Amendment Proposal CAP076 was submitted for consideration by the CUSC Amendments Panel (the Panel) at its meeting of 20 August 2004. The Panel determined that Amendment Proposal CAP076 should be evaluated by a Working Group. The Working Group provided a final report to the Panel on 18 December 2004. The Working Group recommended that CAP076 and four Working Group Alternative Amendments (WGAAs) should proceed to wider consultation.

The Proposed Amendment

The proposer stated that CAP076 aims to clarify the obligations between National Grid and generators in the arming and operation of operational intertripping schemes. In addition, the proposal aims to establish an administered pricing mechanism within the CUSC for certain categories of intertrips.

NGC identified four different types of system to generator operational intertripping schemes:

- ◆ Category 1 a scheme arising from a variation to connection design consistent with the criteria specified in the Security and Quality of Supply Standards (SQSS).
- ◆ Category 2 a scheme required to alleviate the overload that could occur on a circuit that connects the group containing the generator to the rest of the system.
- ◆ Category 3 a scheme installed as an alternative to reinforcement of a third party system where the scheme removes overloads on the third party system, e.g. DNO system.
- ◆ Category 4 a scheme installed at the request of NGC under the circumstances when the generator would be disconnected from the Transmission System and where the use of such scheme would be beneficial to facilitate the timely restoration of critical circuits.

CAP076 contains proposals for specific payments to be placed in the CUSC in relation to the different categories of intertripping schemes.

Generators with Category 1 schemes would not receive any remuneration because to do otherwise would run contrary to the requirements set down in the SQSS relating to variation to connection design⁸. The other categories would be subject to the following regime:

http://www.elexon.co.uk/documents/modifications/172/P172 Ofgem Decision.pdf

⁸ As set out in 2.16 of the GB Security and Quality of Supply Standard Version 1.0.

- Operational intertrips would be defined as Applicable Balancing Services. An appropriate volume of energy would be removed from the imbalance calculations in the BSC on the basis of Applicable Balancing Services Volume Data (ABSVD). Consultation on appropriate change to the ABSVD statement has been undertaken by NGC. This consultation process has covered two options relating to the length of time for which intertripped volume will be treated under ABSVD methodology. In brief, under Option 1 generators imbalance would be removed until the end of the Balancing Mechanism Window (the Wall), whereas under Option 2 it has been proposed that the imbalance should be removed for up to a maximum of 24 hours. This mechanism would be conditional upon changes being introduced into the BSC and Grid Code to remove the requirement for an intertrip operation to be treated as a BOA.
- ◆ For categories 2, 3 and 4, CAP076 also proposes that, should NGC be unable to restore relevant transmission capacity within 24 hours following the trip, the Party with the affected Generating Unit(s) would receive a restricted export level payment at a daily rate to remunerate the restriction on their access to the Transmission System. This would be calculated in a way that is consistent with the standard CUSC payments for disconnections (as introduced by approved CUSC Amendment CAP048). In brief, this payment is intended to rebate TNUoS charges on a daily basis. The compensation would be based on the number of MW disconnected, to give a £/MW/day value.

Additional administered payments defined within the CUSC are proposed for categories 2 and 4:

- ♦ An annual capability fee (£/annum) for the installation and the right to arm the scheme.
- ◆ A tripping fee (£/trip) paid whenever the scheme operates designed to cover wear and tear cost following a trip as well as additional fuel costs⁹.

The amendment proposal did not specify the levels of the capability and tripping payments and these were discussed and developed as part of the Working Group process. The working Group agreed for the capability fee to be around £30,000 per annum and a tripping fee of £400,000 per generating unit.

Alternative Amendments

The working group identified four possible alternatives:

Working group alternative A – CAP076 and payment of an arming fee

In addition to the provisions of CAP076, an arming fee would be paid by NGC to the generator for the periods in which the intertrip is armed. Such an arming fee would be paid on a £/settlement period basis per generating unit while the intertripping scheme was armed. It is proposed that the arming fee would be based on the cost of an insurance premium required to negate consequential costs that could be incurred if the intertrip scheme operated. This fee would also incentivise NGC to minimise the arming of such schemes. The value of the arming fee would be established in bilateral discussions between NGC and the generator.

 $^{^9}$ The original amendment proposal suggested a tripping fee based on a £/MW figure, but this was altered to a £/trip figure as part of the discussions of the Working Group.

Working group alternative B – CAP076 and payment of an arming fee and enhanced capability fee

In addition to the provisions of Original Amendment Proposal CAP076, this alternative proposed an arming fee that would be paid by NGC to the generator in respect of each generating unit per settlement period in which the intertrip is armed. Such an arming fee would be specified in the CUSC. The arming fee would apply to category 2 intertrips only, as they are intermittently armed. Category 4 intertrips would be paid an enhanced capability payment as they are permanently armed.

Working group alternative C – CAP076 and post event compensation for physical plant damage losses

In addition to the provisions of CAP076, a generator who tripped as a result of the operation of a System to Generator Operational Intertripping Scheme would in certain circumstances be able to claim for physical damage to plant arising directly from the trip. The CAP076 original proposal excludes the possibility of claims for plant damage on the basis that 'all power stations have to be designed to tolerate the onerous possibility of full load rejection for certain extreme events...' Furthermore, CAP076 also recognises that '...National Grid has experienced reluctance from generators to arm their intertrip schemes.' This alternative seeks to overcome this reluctance by ensuring individual generators are protected from damages arising from the use of an operational intertrip while avoiding unnecessary additional costs.

Working group alternative D – CAP076 and arming fee and enhanced capability fee (CUSC administered and post event compensation for physical plant damage losses)

This alternative is based on a combination of the original proposal and two of the alternative options for an arming fee/enhanced capability fee and a post event compensation for physical plant damage losses (option B and option C).

Associated Modifications to other Codes and Documents

Approval of CAP076 would require consequential changes to the Grid Code and the BSC to remove the provisions that set down the automatic BOA arrangements associated with the operation of a System to Generator Operational Intertripping Scheme. These are described in the reports to the Authority relating to BSC Modification P177 – "Removal of Intertrip Provisions from the BSC" and Grid Code Modification Proposal A/05 – "Changes consequential to CUSC Amendment Proposal CAP076 – Treatment of System to Generator Intertripping Schemes" which have been submitted to the Authority for decision.

Implementation of CAP076 would also require appropriate amendments to the Procurement Guidelines (PGs), BSAD and ABSVD methodology statements, published by NGC in accordance with standard condition C16 of the electricity transmission licence. Change to the PGs would be required to reflect the formal identification of System to Generator Operational Intertripping Schemes as Part 2 System Ancillary Services and to highlight the fact that some generators will be required to provide the service as part of a condition of connection. Change to the BSAD and ABSVD Methodology Statements would be required to ensure that an operation of a System to Generator Operational Intertripping Scheme is appropriately accounted for in the calculation

of imbalance volumes. Proposed changes to these statements have also been referred to the Authority for a decision.

Respondents' views

NGC issued a consultation paper on 23 December 2004 inviting responses from CUSC Parties and interested parties. Views were requested by 16 February 2005.

NGC received 10 responses to the consultation in respect of Proposed Amendment CAP076. The majority supported the principle of CAP076 and Working Group Alternative Amendment Proposal D in particular.

a) Tripping and capability fee

One respondent agreed that the tripping fee covers the appropriate costs and represents a reasonable estimate of the costs considered, although the same respondent noted that the fee proposed does not take account of plant damage or any other consequential loss.

b) Imbalance price exposure

A number of respondents supported the view that under the existing arrangements, imbalance prices could be distorted following the operation of an intertrip. A number of respondents also expressed their views on the removal of an appropriate volume from the imbalance calculations in the BSC on the basis of ABSVD.

c) Consequential losses

One respondent considered that consequential losses coverage would create an insurance pool where generators with resilient plant and prudent operation would be providing cover for less resilient plant.

A number of respondents expressed a view that the current reluctance to arm intertrip schemes was driven by the risk of significant plant damage and consequential costs arising from a trip. Those respondents considered that an ability to seek compensation for such consequences should be provided in order to make generators risk neutral to any consequential costs incurred as a result of the operation of an intertrip scheme.

d) Use of an arming fee

A number of respondents stated that an arming fee should be used. Four respondents considered that generators incur higher operational and risk hedging costs when an operational intertrip is armed. Two respondents considered that during arming period a plant is on 'increased risk of trip' and is therefore receiving a poorer level of access to the system.

Three respondents considered that an arming fee would encourage licensees to undertake a full economic assessment prior to arming an intertrip and will incentivise them to align transmission system outages with generator planned outages, which should mitigate the need for intertrips to be armed.

e) Grid Code definitions

Several respondents expressed the view that the technical definitions associated with intertrips, and in particular intertrip categorisation, would be addressed more appropriately via the Grid Code.

f) Categories of intertrips

One respondent supported the proposed categories of intertrip as such categorisation should help to clarify the treatment of different types of System to Generator Operational Intertripping Scheme and would therefore provide greater transparency

One respondent expressed the view that the attempt to classify intertrip schemes as set out in CAP076 is incomplete, complex and confusing in comparison to the existing arrangements, but did not provide any further explanation of this view.

Two respondents were concerned that the introduction of Category 1 would result in generators being forced to accept second rate connections with no consequential reductions in TNUoS charges. One respondent stated a preference to see Category 3 removed from the proposals.

One respondent said that its greatest concern was the absence of any technical or engineering risk assessment of intertrip schemes.

A number of respondents stated that CAP076 could result in the inefficient use of intertrips schemes, as they would be more accessible to NGC.

g) GB consultation

Two respondents said that there had been limited consideration of how CAP076 would affect Scottish parties. One of these parties questioned whether a separate consultation would be issued to focus on GB arrangements.

Amendments Panel Members' views

No responses to the consultation were received from Panel Members acting in that capacity.

NGC's recommendation

NGC recommended that Original Amendment Proposal CAP076 or WGAA D should be implemented 25 business days after an Authority decision.

NGC proposed Original Amendment Proposal CAP076 and has argued that the original amendment proposal better facilitates the Applicable CUSC objectives as set out below.

By removing the post-event BOA from the Grid Code and introducing new terms for discrete categories of operational intertripping schemes, NGC considers that the CAP076 Proposal and consequential amendments to the BSC and the Grid Code would enable National Grid to discharge its obligations under the Act and the licence more efficiently by:

- removing NGC and industry exposure to the consequences of operation of an intertrip scheme with an associated large negative Bid price;
- clarifying the requirement to install certain categories of intertrip schemes where required as a condition of connection for a generator;
- better enabling accurate economic assessment for installation of Schemes as against transmission reinforcement at the time that applications are made for new connections;

Providing an improved framework for the treatment of intertrip schemes would facilitate effective competition in the generation and supply of electricity by:

- ensuring an enhanced level of market certainty with regard to processes, responsibilities and remuneration associated with intertrip schemes;
- ♦ clarifying obligations on generators whose intertrip schemes are a condition of connection;
- reducing the financial risks faced by generators due to operation of intertrip schemes;
 and
- reducing the risks faced by the industry through BSUoS charges and the potential distortion of imbalance prices.

While NGC considered that the original proposal best facilitates the relevant objectives, NGC stated that it is also possible that WGAA D potentially better facilitates the relevant objectives than the status quo. NGC stated that if it were deemed appropriate for an arming fee and post event claims process to be included in the overall framework for the treatment of intertrips, NGC would welcome the implementation of WGAA D.

Ofgem's views

Having carefully considered the Amendment Report, Ofgem considers, having had regard to its the Applicable CUSC Objectives and its wider statutory duties, that Proposed Amendment CAP076 Initial Proposal would better facilitate the achievement of the Applicable CUSC Objectives than the status quo. Nevertheless, the arrangements introduced by CAP076 may merit further consideration at a future time.

Applicable CUSC Objective (a) – the efficient discharge of the licensee of the obligations imposed upon it under the Act and by this licence

Operational intertrip schemes may be installed at connections to satisfy a user's requirement for a specific connection design (Category 1 Intertripping Scheme), to manage issues on a third party's user system (Category 3 Intertripping Scheme) or to satisfy NGC's requirements relating to the operation of the GB Transmission System in an economic and efficient manner (Category 2 and Category 4 Intertripping Schemes).

In relation to the use of operational intertrips to facilitate NGC's operation of the GB Transmission System, there are other options open to NGC on how it operates the GB transmission system under local network conditions arising due to the need for outages to be taken on the transmission system, for example constraining generation by acceptance of appropriate Bids and Offers or through additional investment so that no constraints are created. Managing these circumstances through balancing actions may prove to be expensive because, as a result of the localised nature of the network constraint, there may only be one generator that can bring about the necessary reduction in power flows and in such cases, a generator may have monopoly power and choose to reflect this in the Bid-Offer pairs that it posts during the relevant localised outage. Investment in additional transmission infrastructure such that a generator's access to the GB transmission system can be fully maintained during the period of a local transmission outage may not be considered to be economic if at other times the infrastructure would be surplus to requirements.

NGC considers the installation of Category 2 and Category 4 operational intertrips to be of value to it when planning the GB transmission system such that it can be operated in an economic and efficient manner. Ofgem also notes that NGC may need to include a Category 1 or Category 3 intertrip scheme within an offer of connection it makes to a customer, when such a variation is requested by a customer or can be considered as a viable alternative to reinforcement of a third party User System.

As previously stated in the decision on Modification Proposal P87¹⁰, Ofgem considers that the CUSC, rather than the BSC, is the appropriate forum for consideration of an issue that relates to the terms for transmission access and compensation following disconnection from the transmission system.

NGC is obliged by standard condition C17 (Transmission system security standard and quality of service) of its licence to, amongst other things;

- plan, develop and operate its transmission system and
- co-ordinate and direct the flow of electricity onto and over the GB transmission system in accordance with the GB Security and Quality of Supply Standard version 1.

NGC is also obliged by section 9(2) of the Act to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

In light of the factors outlined above, Ofgem considers that Amendment Proposal CAP076 would better facilitate the efficient discharge of these obligations and would therefore better satisfy Applicable CUSC Objective (a) relative to the current baseline.

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 and purchase of electricity

_

¹⁰ For more information on this Modification Proposal please visit the following address: http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=92

Ofgem agrees with the views expressed by respondents who considered that the current operational intertrip compensation mechanism, whereby the generator is paid at its prevailing Bid-Offer price, may present the industry with the risk of inappropriate, disproportionate costs to ultimately be incurred by users of the GB transmission system. Where System Balancing actions feed through into the calculation of Energy Imbalance Prices and price signals are polluted, it is not in the best interests of the development of effective competition in the generation and supply of electricity nor does it send appropriate investment signals such that the GB transmission systems can be developed in an economic and efficient manner. Competitive market forces may not prevail upon generators with armed operational intertrips given the locational nature of the circuit to be affected by the intertrip. In this situation where the intertrip provider is in a position of monopoly power, effective competition is unlikely to be furthered via the continuing existence of remuneration via Bid-Offer Acceptances, and further considers that the potential acceptance of sleeper Bids could distort competition, to the detriment of consumers. Although Approved BSC Modification Proposal P172¹¹ has removed from cash out Parties' exposure to Emergency Instructions taken for System Balancing reasons, the current arrangements would not prevent the full costs of operational intertrips feeding through into cash out, and are reliant on the efficacy of the tagging methodologies used to differentiate between System and Energy balancing actions. While the System Operator has a limited liability (within the constraints of the incentive scheme cap/floor and sharing factors) for the costs imposed by the operation of an intertrip through its external SO incentive scheme¹², there could be a substantial impact on market participants in the event that an intertrip operates. For these reasons, and in the narrowly specified instance of operational intertrips, an administered payment mechanism removes inappropriate risks to the market and would thereby better facilitate effective competition in the generation and supply of electricity. Ofgem does not consider that in general administered payments are optimal for the facilitation of competition, but in this specific situation such a mechanism better facilitates the Applicable CUSC Objectives than the status quo.

In considering the various alternatives proposed Ofgem notes the support from several respondents for WGAA D but agrees with the view expressed by NGC and another respondent that the CUSC should not provide post-event compensation for consequential losses in order not to reduce incentives on generators to take appropriate risk mitigation measures to cover direct plant damage and indirect financial consequences of plant damage. Consequential losses coverage would create an insurance pool where generators with resilient plant and prudent operation would be providing cover for less resilient plant. Ofgem considers that such circumstances would not better facilitate effective competition in the generation and supply of electricity.

More than one respondent considered that an arming fee should be payable to reflect costs (e.g. costs associated with having to hold additional reserve) and to reflect the additional risk to the generator of generating while an intertrip is armed. Ofgem notes NGC's view that it is unclear why a generator would need to hold extra reserve beyond that which a generator would normally hold, especially when it is covered against imbalance exposure through ABSVD. While Ofgem understands that there is additional risk of tripping while an intertrip is armed, the statistics indicate that this risk is very low. Moreover, the risk of having to pay a £400,000

_

¹² The impact of Amendment Proposal CAP076, in terms of its potential for reduced exposure to the costs of intertrips, may need further consideration to ensure that NGC's SO Incentive Schemes continue to be appropriate.

tripping fee represents an additional incentive on NGC to keep arming instructions to a minimum.

Two respondents raised the concern that users with Category 1 operational intertrips may be forced to accept substandard connections and questioned the rationale for not paying compensation to such users. Ofgem understands that Category 1 intertrips would only be installed at the request of the user.

With regard to the view that CAP076 does not contain sufficient technical or engineering risk assessment of intertrip schemes, Ofgem notes that CAP076 seeks to categorise intertrips for remuneration purposes, whereas technical and engineering requirements will continue to be assessed at the time that NGC makes its Offer of terms to the generator. Ofgem also notes that the Grid Code governance arrangements include provisions relating to electrical standards and therefore considers that it would be appropriate for such technical matters to be considered by GCRP. If there are issues relating to the interpretation of the SQSS, (in relation to the definition of Category 1 Intertripping Schemes) Ofgem would welcome a consultation process on the interpretation of the SQSS, which may eventually result in changes being proposed to the definitions in the CUSC and/or Grid Code.

Ofgem notes the views expressed by NGC and respondents on changes to the imbalance coverage methodology that may be required should CAP076 be approved. Such issues should be dealt with by appropriate modifications to the relevant statements published by NGC in accordance with standard condition C16 of its electricity transmission licence.

In respect of the suggestion made by one respondent that a GB consultation should be undertaken, Ofgem understands that, after the designated GB CUSC came into effect from 8 September 2004, the Working Groups have been open for participation to all GB participants and in addition any issues of specific relevance to Scottish parties could have been raised within these fora or via consultation.

Finally, Ofgem notes the wide range of views that have been provided on the issues raised by market participants during the development of CAP076 and acknowledges that the provisions of the amendment may not be optimal, but considers on balance that they better facilitate the Applicable CUSC Objectives than the status quo. Ofgem is aware that the issues surrounding operational intertripping schemes are likely to change and would welcome the continuing review of the proposals that are implemented under Amendment Proposal CAP076.

The Authority's Decision

The Authority has therefore decided to direct that Original Proposed Amendment CAP076, as set out in the Amendment Report, should be made and implemented. An attached letter contains this direction.

Yours sincerely,

Andrew Walker

Director, Transmission

Signed on behalf of the Authority and authorised for that purpose by the Authority