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Dear Bob,

**GBECM-09: Charging arrangements associated with SQSS design variations based upon customer requests**

**Introduction**

At the end of December 2005 Ofgem wrote to National Grid raising a potential charging issue concerning SQSS design variation connections. Criteria within the SQSS exist to allow generation customers to choose a standard of connection which is higher, or lower, than the specified standard (e.g. a single circuit connection), provided this does not immediately or in the foreseeable future:

- Reduce the security of the main interconnected transmission system below the minimum planning criteria specified in the standard;
- Result in additional investment or operational costs to any particular customer or overall, or a reduction in the security and quality of supply of the affected customers' connections to below the planning criteria in the standard, unless specific agreements are reached with affected customers; or
- Compromise the Transmission Licensees ability to meet other statutory or licence obligations.

In order to comply with such criteria a generator with a design variation connection must accept uncompensated access restrictions in the event of the non-compliant assets being unavailable. Without such arrangements other customers would be exposed to additional operational costs and the criteria described above would not be met.

Prior to the implementation of the plugs 'shallow' connection charging methodology on 1 April 2004, many of the assets associated with generation connections were classified as 'connection'. Consequently, a customer choosing a lower standard of connection design had the capital savings directly reflected in reduced connection charges. The customer was able to compare the savings with the loss of revenue caused by the associated access restrictions and choose the most efficient connection design. Following the implementation of the plugs methodology, some assets for connecting generation have been reclassified as 'infrastructure' and since infrastructure assets are funded from use of system rather than connection charges, the savings are no longer passed through directly to the customer, but shared amongst all. Without the provision

of an economic signal, there is no financial incentive to request a lower standard of connection which risks leading to over investment in transmission infrastructure.

### **Progress**

In November 2006 National Grid submitted to the Authority final proposals for a charging amendment (GBECM 06<sup>1</sup>) to address this problem after preconsultation and consultation with the industry and discussion within the various industry charging forums. The proposals included a substation and a circuit discount calculated using a generic formula derived from the charging methodology.

In February, following a regulatory impact assessment, the Authority issued a veto decision, as it was felt significant issues remained concerning the cost reflectivity of the proposed discount levels, in particular relating to the circuit discount element. National Grid was requested to further consider the modification and address the representations made to the Impact Assessment. It was proposed that the arrangements should better reflect the actual capital cost savings associated with building single circuits to provide a stronger signal to generators.

National Grid has performed considerable work in this area with substantial industry consultation. Further analysis of options to provide a better reflection of the cost saving was performed and revealed that if the discount per kilometre was larger than the charge per kilometre, then a perverse incentive was established to connect remotely which could trigger inefficient transmission investment.

Further analysis was also undertaken to investigate examples where the proposed circuit discount was not consistent with actual capital cost savings. This circuit discount was refined to include provisions for tee connections and connections with thermal rating restrictions previously not included in the proposals.

A consultation document was issued to the industry on 2 November 2007 which covered a range of options for charging arrangements for the single circuit, substation and partial redundancy aspects of design variation connections. National Grid supports the approach derived from the charging methodology and believes this is the most appropriate solution, as it provides the most cost reflective discount that does not create a perverse locational signal.

After the consultation had closed, twelve responses<sup>2</sup> were received from industry representatives and upon review it became apparent they were broadly split into two groups: those who believe the proposals are broadly appropriate in that any discount must be consistent with how the original charge is calculated, in order to avoid perverse incentives; and those that believe it is essential that any proposed discount must directly reflect the actual cost savings that result from a lower security connection and that the discounts proposed are simply not sufficient to influence a generators decision and will lead to over investment in transmission infrastructure.

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<sup>1</sup> <http://www.nationalgrid.com/uk/Electricity/Charges/modifications/uscmc/>

<sup>2</sup> The responses can be found on the National Grid Charging website at:  
<http://www.nationalgrid.com/uk/Electricity/Charges/modifications/uscmc/>

As described above, the discount arrangements proposed are calculated to be consistent with the charging methodology and, as a consequence, not fully cost reflective for local asset savings, as a result of several factors:

- Charge and discount is based upon the capacity booked (TEC) rather than the assets installed
- Charge and generic discount are calculated from Expansion Factors, which are derived from weighted cost averages of historic installations. Averages include circuits performing various functions although there is a significant cost variance between circuits for bulk transport of power and circuit for 'local' generation spurs.
- Both the charge and therefore discount for substation assets are socialised within the residual element of TNUoS

Nevertheless, National Grid continues to believe that to avoid creating inappropriate locational signals a discount must be consistent with how charges are calculated.

As a result of the consultation it is clear that it is not possible to achieve both full cost reflectivity for local assets savings and to avoid perverse locational signals. Given this situation we have broadened the scope of the initial issue to see if it is possible to propose an option which provides a more complete solution.

National Grid continues to believe that average Expansion Factors remain appropriate for bulk transfer circuits within the Main Interconnected Transmission System, and no justification was presented in the consultation responses to review how such assets are charged. However, it has been shown that there may be significant benefit from treating local generator circuits in a different manner to Main Interconnected Transmission System circuits. By broadening the scope of the initial issue to encompass the charge associated with local generator circuits it may be possible to address the issues identified during this consultation.

### **Way forward**

After the amendment design process and upon review of the recent consultation industry responses it has become apparent to National Grid that there is a genuine enduring solution that builds on the substantial work performed so far and will achieve both objectives of full cost reflectivity and avoid inappropriate incentives. Significant improvement has been achieved through the process undertaken so far with the potential to solve a wider issue and develop more cost reflective charging arrangements for compliant and design variation Users.

Given the above information, National Grid has considered the options available: Submit proposals for an imminent implementation of a discount as cost reflective as the current charging methodology will permit or develop charging arrangements for 'local' assets to ensure both charge and discount are sufficiently cost reflective. At the recent December Transmission Charging Methodology Forum, National Grid presented these options, and obtained broad support for the development of more cost reflective charging arrangements for local assets. This was generally regarded as a better option than trying to implement a solution at this stage without including this alternative broader option. We highlighted at the meeting that a more cost reflective charge and discount for local assets may mean that some Users may see an increase in absolute charge.

Such a significant change will require further analysis and consultation within the TCMF and CISG and implementation will not be possible for 1 April 2008.

Given the concerns raised by respondents, National Grid is minded not to submit any of the proposals consulted on during the recent charging consultation since these would not provide the optimal solution. Instead, National Grid is minded to initiate work on the final enduring solution immediately.

The Charging Methodology provides locational signals to ensure Users make decisions that result in economic and efficient investment. National Grid believes that although specific charging arrangements for design variations will not be implemented for 1 April 2008, with this proposed approach, the enduring solution could be substantially progressed at this time. There are currently a small number of projects that will make a decision regarding their level of connection security during 2008/9 and with the proposals sufficiently developed, these Users will be able to make the correct economic and efficient decisions.

If this option is considered appropriate, National Grid is proposing to start industry discussions on alternative approaches at the January Charging Issues Standing Group and a preconsultation paper will be published around this time. This will allow a formal consultation on final proposals to follow with a report to the Authority in summer 2008.

Clearly, I would welcome your views on this proposed approach.

If you have any queries please do not hesitate to contact me.

Yours sincerely,

Chris Bennett  
Regulatory Frameworks Manager

cc     Min Zhu,  
        Anthony Mungall,  
        Michael Dodd,  
        Hedd Roberts