

Inveralmond House
200 Dunkeld Road
Perth PH1 3AQ

Tom Ireland
Electricity Charging and Access Development
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick CV34 6DA

Tel: 01738 456400

Fax: 01738 456415

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Dear Tom

Consultation document GB ECM-09

For the charging and access arrangements associated with SQSS design variations based on customer requests

I am writing in response to the above consultation document in which National Grid proposes modifications to the Transmission Network Use of System (TNUoS) charging methodology to address the problem of inefficient capital expenditure to facilitate new connections to the main interconnected transmission system. This response is not confidential.

Scottish and Southern Energy (SSE) does not support the modifications to the TNUoS charging methodology proposed by National Grid in this consultation document. As we illustrate below, it is clear that the proposed modifications to the TNUoS charging methodology would not resolve the issue in question; namely ensuring that the connection design chosen by a customer represents the most efficient network investment to facilitate their connection. In addition, we have concerns with the detail of the proposed methodology changes and, as a result, do not believe that these proposals are consistent with National Grid's obligations under standard licence condition C5.

A solution to this issue is, however, necessary and, given the ongoing Review of Transmission Access and the imminent optimisation of the GB Queue, it is important that an effective solution is in place for the charging year commencing 1 April 2008. While a solution that is based on modification of the TNUoS charging methodology would be welcome, if such a solution cannot be identified in the short time that is available then we would support the use of an interim measure for 2008-09. To be effective, our analysis suggests that an interim measure should be equivalent a discount to the TNUoS tariff of the order of 20%.

These proposals would not be effective

The three Transmission Owners (TOs) are obliged by statute to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. In practice, this means ensuring that investment in the network represents the best value for all existing, contracted users of the network. For some generation connections, analysis of the capital and operational costs over the lifetime of the affected assets shows that the most efficient connection design is to a lower standard than that specified in the GB Security and Quality of Supply Standard (SQSS). Given the choice, and so long as no other party is affected and the overall integrity of the system is maintained, then the TO would opt for the lesser standard of connection design (“a design variation”).

However, it is the customer who has the choice over the standard of connection design, not the TO. The customer is seeking to maximise its access to the market. In order to make its choice over the connection design, the customer will undertake an analysis that, essentially, trades the cost of the lost access (or lost opportunity to generate) against the potential benefits of a design variation. Currently, there is no benefit to a customer opting for a design variation, there is only cost; hence no rational customer would opt for a design variation.

These proposals seek to modify the charging arrangements such that a customer opting for a design variation would benefit through a discount to its TNUoS charge. Critically, for these proposals to be effective, the benefit that the customer would realise through this discount must be at least equal to its expectation of the cost associated with the lost opportunity to generate.

Typically, for a generator seeking connection via a 132 kV single circuit spur in the north of Scotland, these proposals offer a discount to the TNUoS charge of less than £0.02/kW per kilometre of spur length¹. As an absolute value, this appears negligible; however the critical measure is not the absolute value of the discount but rather what this discount equates to in terms of the lost opportunity cost.

Using some simple assumptions², this proposed discount can be presented as an equivalent lost opportunity cost to the generator as illustrated in the table below for varying spur lengths.

Spur length	Equivalent lost opportunity cost
5 km	3 hours pa.
10 km	6 hours pa.
25 km	16 hours pa.
50 km	32 hours pa.

This illustrates the choice for a generator. On one hand, it could opt for a connection design as that specified in the GB SQSS and have full, firm access to the GB transmission system (“a firm connection”). On the other hand, it could opt for a design variation. The benefit of a design variation

¹ Proposed Nodal Specific Security Factor – Generic discount (£/kW) = Applicable circuit length of single circuit (km) * Expansion constant (£/MWkm) * Expansion factor / 1000; where the expansion constant is £9.8/MWkm and the expansion factor for 132 kV circuits in the north of Scotland is 2.24.

would be a TNUoS discount of less than £0.02/kW per kilometre of spur length. The cost of design variation would be significantly less secure access and, in the event of planned or unplanned outage of the affected assets, no compensation. Hence, the choice is whether the benefit of design variation outweighs the cost – for a spur length of 10 km, does the customer expect that the transmission assets would be unavailable for more than 6 hours each year?

Would a discount to the TNUoS charge of this magnitude materially influence the actions of a customer? Ultimately, this decision is one for an individual customer. However, we do not believe that a discount of less than £0.02/kW per kilometre would, for the majority of customers, provide adequate recompense for accepting restrictions on access to the transmission system and the associated additional operational risks. Certainly, as a market participant with significant existing and prospective renewable generation, SSE would not opt for a design variation on the basis of these proposals.

If a modification to the charging methodology is not effective, then it is not an improvement upon the current situation. As such we cannot support the modifications to the TNUoS charging methodology proposed by National Grid in this consultation document.

These proposals are not consistent with standard licence condition C5 obligations

The relevant objectives of the TNUoS charging methodology are described under standard licence condition C5. We do not believe that these proposals to modify the charging methodology are consistent with the relevant objectives because:

Compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity

Effective competition in the generation of electricity would, in our opinion, be better facilitated by the provision of access and charging arrangements for small generators for whom the most economic and efficient means of access to the GB transmission network is with a design variation. As described above, we do not believe that these proposals would result in effective charging arrangements and hence would not better facilitate competition.

Further, without effective charging arrangements, these small generators would either not connect or would request a firm connection. This would have two perverse consequences for competition in the generation of electricity:

- the greater capital investment by the TOs to provide a firm connection would increase costs for all users of the network; and
- by opting for a firm connection, these customers could potentially sterilise capacity on the transmission network resulting in lesser access being available to other users.

² Assumes a load factor of 30% and energy value of £90/MWh (market price plus ROCs; does not include the cost of replacement energy).

Again, we conclude that this would not better facilitate competition.

Compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and in accordance with the STC) incurred by transmission licensees in their transmission businesses

At the highest level, the TNUoS charging methodology is cost-reflective as it recovers the actual costs incurred by the TOs. However, at a customer specific level, and particularly in relation to the actual investment made by a TO to facilitate a customer's connection, the TNUoS charging methodology is demonstrably not cost-reflective. Significantly, these proposals do not result in changes to the methodology which would better reflect the costs of the TOs. For example:

- National Grid concludes that no substation asset discount should be offered. The cost to the TO of substation assets is significant, yet it is proposed that these significant costs should not be reflected back to the customer. Regardless of whether a customer opts for a design variation or a firm connection, the cost to that customer is the same. Hence, while the customer alone would bear the cost associated with the design variation (i.e. no compensation in the event of loss of access), the benefits of the lesser investment by the TO would be shared by all users through a relative reduction in the residual charge.
- National Grid's conclude that the circuit asset discount should be derived from a nodal specific security factor calculated using a generic formula. The worked examples in the consultation document illustrate that the resultant discount to the TNUoS tariff would be a small fraction of the capital savings that would be made by the TO (for the examples given, less than 20%). In this regard, the cost to the customer of opting for a design variation or a firm connection in no way reflects to the cost to the TO of the two options. As with the substation asset discount the customer alone would bear the cost associated with the design variation, yet the customer would only receive a small proportion of the benefit. The bulk of the cost saving made by the TO would be reflected through a relative reduction in the residual charge and the benefits of this would be shared by all users.

In relation to both the substation asset discount and the circuit asset discount, National Grid explicitly concludes that a fully cost-reflective charge would not be appropriate. This decision not to offer a cost-reflective charge is, in our opinion, wholly inconsistent with National Grid's licence obligations.

The use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses

The growth in renewable technologies, in particular onshore wind, is a significant development in the GB energy industry and is having a significant impact on the businesses of the TOs. Much of this prospective new generation capacity is, by its nature, sited in remote locations far from the existing transmission network. Typically, the most efficient design of the network to connect these power stations is a design variation. The TNUoS charging methodology needs to take proper account of this new type of generation connection and ensure that the connection design chosen by a customer

represents the most efficient network investment to facilitate their connection. As we describe above, we do not believe that these proposals will be effective in achieving this.

The way ahead

The potential discord between the connection design chosen by a customer and the most economic and efficient connection design was raised during the Transmission Price Control Review 4 and, since then, there has been significant debate within the industry as to the best mechanism to address this. While opinions have varied over how this can be achieved, there has been a clear consensus that this is an issue that needs to be resolved. Indeed, given the ongoing Review of Transmission Access and imminent optimisation of the GB Queue, it has arguably become even more important that a solution to this problem is found.

As we describe above, we do not believe that the modifications to the TNUoS charging methodology proposed by National Grid in this consultation document represent an effective solution to this problem. Further, we do not believe that the proposed modifications are consistent with National Grid's licence obligations. As a consequence, we do not support these proposals.

However, we do believe that a solution needs to be found and, importantly, an effective solution needs to be in place for 1 April 2008. Ideally, an effective and enduring solution should be found within the TNUoS charging methodology. To date, such a solution has not been identified and we are concerned that the timescales are now too short. Given this, we would support the implementation of an interim measure for the charging year 2008-09 to allow more time for an enduring solution to be determined.

The key criteria for such an interim measure should be:

- Eligibility: all users with restrictions on availability due to a design variation would be eligible; and
- Effectiveness: the measure should be effective in ensuring that, for the majority of affected users, the connection design chosen by a customer represents the most efficient network investment to facilitate their connection.

If the interim measure was a discount to the TNUoS tariff then (as we have shown in previous analysis submitted in response to consultations on this issue) for the discount to be effective for customers located in the north of Scotland the TNUoS discount would need to be of the order of 20%.

I hope these comments are helpful, and if you would like to discuss this further then please give me a call.

Yours sincerely,

Malcolm Burns
Regulation Manager