

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 456407

Fax: 01738 456415

11 September 2006

Dear Tom

**Pre-consultation document GB ECM-06**

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

I am writing in response to the NGET pre-consultation document that seeks to address the problem of inefficient capital expenditure to facilitate new connections to the main interconnected transmission system.

The issue identified in the pre-consultation relates to the choice available to generators of a standard of connection which is higher or lower than the standard specified in the GB SQSS. Under the current arrangements, there is no incentive, indeed it can be argued that there are clear disincentives, on the generator to opt for anything other than the specified standard of a firm connection.

Historically, under the deep connection charging regime, the choice made by the generator only applied to connection assets; hence other users were not affected by the generator's choice. However the classification of assets in the plugs connection charging methodology means that the choice that is made by the generator now applies to both connection assets and

infrastructure assets. As infrastructure assets are paid for by all users through use of system charges then the standard of connection chosen by the generator affects all users. If a generator chooses an inefficient connection design then all users are exposed to the inefficient capital expenditure that is incurred.

In the pre-consultation document, NGET invites views from the industry on four options to address this issue. These four options are:

- Do nothing;
- Modify the GB SQSS such that there is an option for the TO to design infrastructure to a standard lower than the specified criteria. This option assumes that the TO will choose the economic and efficient connection design;
- Modify the connection charging methodology such that the generator connection substation and spur circuits would be charged as connection assets. Under this option, infrastructure assets would be the responsibility of the TO and it is assumed that, as above, the TO will design an economic and efficient connection. Further this option assumes that, as the generator pays directly for connection assets, it would choose the economic and efficient connection design;
- Modify the use of system charging methodology such that generators with a lower standard of connection are liable for a lower use of system charge. This option assumes that a lower use of system charge will be sufficient incentive for the generator to choose the economic and efficient connection design.

We believe that the current arrangements are resulting in inefficient capital expenditure to facilitate new connections to the transmission system. For SHETL, this applies not to a small number of “extreme cases”, as suggested in the pre-consultation, but rather to the majority of applications for a new connection. Inefficient expenditure is clearly not in the best interests of customers, and is contrary to the TO’s statutory obligation to develop an economic and efficient transmission network. Hence, we strongly believe that doing nothing is not an option.

Of the other three options presented by NGET, we do not believe that any of these options can, in isolation, resolve the problem. Rather, and in order to produce an enduring arrangement, elements of all three options are likely to be required. Our views on the options proposed by NGET, and the difficulties associated with implementing any of these options in isolation, are set out below.

### **Option 1 – SQSS modification**

Under the GB SQSS, the choice over the standard of the connection sits with the generator. The first option proposed by NGET is a modification to the GB SQSS such that there is an

option for the TO to design infrastructure to a standard lower than that specified. The rationale behind this option is that, as the TO has a statutory obligation to develop an economic and efficient transmission system, the TO will always choose the most efficient design for the connection. Further the efficiency of the design chosen by the TO would be subject to analysis at the price control before the assets were allowed in the RAV.

In principle, we believe that customer choice can only apply to assets that the customer is paying for, i.e. a “chooser pays” principle. On this basis, the connection assets can be chosen by the customer (indeed, the customer can elect to provide them himself), but the infrastructure assets must be determined by the TO. Achieving this would, as NGET propose under option 1, require a fundamental change to the GB SQSS.

In the first instance, the GB SQSS would need to be changed to allow the TO the choice over the standard of connection design. The GB SQSS would require further modification to allow the TO the choice of a single circuit design provided there is economic justification and, importantly, the operation of the system and overall security of supply are not affected. There would also have to be provision under the GB SQSS for the generator to appeal against the TO’s design.

The main difficulty with undertaking this change, as identified by NGET in the pre-consultation document, is the setting of compensation payments. NGET suggest that generators would continue to be given full access rights whether they were connected with a single or double circuit. As the level of compensation payment is effectively set by the generator, NGET conclude that it would be difficult for the TO to undertake the analysis necessary to determine the most economic connection design. NGET also note that it is the GBSO, not the TO, that is liable for compensation payments.

NGET’s suggestion that generators would continue to be given full access rights is contrary to the existing arrangements where generators with a single circuit connection have restricted access rights and receive no compensation in the event of fault or maintenance outages. It would not be appropriate for one group of generators with a non-firm connection to be treated differently from another particularly as, under the current arrangements, both are liable for full use of system charges. Hence, if NGET should decide to proceed on this basis, full access rights should be granted to all generators with a single circuit connection including those generators already connected to the transmission system.

The alternative approach is to give all generators with a single circuit connection restricted access rights. This would be consistent with the existing situation, and address the problem with setting compensation payments raised by NGET. However it would not be appropriate for users with restricted access to pay the same use of system charge as users with full access rights. Consequently, we propose that generators should be compensated for their loss of choice and loss of compensation payments through a reduced use of system charge. We consider the required changes to the charging model below.

## **Option 2 – Deeper connection boundary**

The issue discussed in the pre-consultation paper relates to inefficient expenditure on assets classified as infrastructure. The second option proposed by NGET effectively removes this problem by reclassifying the generator connection substation and circuit spur as connection assets. Connection assets are paid for directly by the generator through connection charges. Hence, although the generator would still have the choice of an inefficient connection design, only that generator, and not the generality of customers, would be liable for the potentially inefficient cost.

This option is, in essence, a return to a deep connection charging regime. It was under a deep connection charging regime that all of the existing efficient connection designs in Scotland were developed. This experience in Scotland demonstrates that such an approach works. For example, while a customer could opt to pay an additional sum for a more robust design, past experience demonstrates that small wind farms choose a single circuit.

Despite the many advantages of returning to a deep connection boundary, given where we are in the connections process, we agree with NGET's conclusion in the pre-consultation document that it would be difficult to achieve. In addition to the issues of dealing with wider system reinforcements and defining a consistent connection boundary identified by NGET, we believe that this change would result in significant difficulties in dealing with proposed generation sites located in remote locations distant from the main transmission infrastructure.

## **Option 3 – TNUoS methodology amendment**

The final option proposed by NGET is to modify the use of system charging methodology such that generators with a lower standard of connection are liable for a lower use of system charge. The rationale behind this option is that a lower use of system charge will be sufficient incentive for the generator to choose the most economic and efficient connection design.

In principle, we agree that the use of system charge paid by users should reflect a user's access to, and hence use of, the transmission system. On this basis, we believe that all users with restricted access should not be liable for full use of system charges. This principle applies whether it is the customer or the TO that has the choice over the standard of connection. So, for example, if the GB SQSS were to be modified to give the TO the choice over the design of the connection, as proposed above, and the TO decided a non-firm connection was the efficient choice then the generator would be liable for reduced charges.

While we agree with NGET that the full cost saving associated with a lower standard of connections should be passed through to generators, we do not agree that the methodology adopted by NGET achieves this. Indeed, we believe that the analysis presented by NGET in the

pre-consultation document clearly demonstrates that the charging model is not fit for purpose in its current form.

#### *Locational security factor*

The underlying rationale for the ICRP approach is that, for any changes in generation and demand on the system, NGET must ensure that it satisfies the requirements of the GB SQSS. A single circuit design, even if this is the most economic and efficient connection, would not be compatible with the GB SQSS. In particular, it would fail the test that there should be no loss of generation infeed in the event of loss of a transmission circuit.

The loss of infeed test is understandable in the context of the connection of, say, a 1000 MW CCGT to the supergrid. The sudden loss of 1000 MW of infeed could destabilise the system and result in a loss of supply. However, when applied to a 60 MW intermittent generator such as a wind farm, this test is questionable. The sudden loss of this generator is highly unlikely to affect the stability of the transmission system. This highlights the principle behind the GB SQSS – that the standards primarily exist to protect customers from widespread loss of supply. In other words, the GB SQSS are not about ensuring that generators have uninterrupted access to the network, although this may be an indirect consequence of ensuring continuity of supply.

Building on the assumption that the GB SQSS exist primarily to protect customers from loss of supply, there is no reason to assume that generators should pay for the secure connection that is necessary for major base load stations. This would imply that demand customers should pick up security elements of the tariff; hence the locational element of the tariffs for generators should not include a locational security factor.

This would, in our view, create a level playing field in that all generators would be entitled to a minimum level of service from the connection and pay a use of system charge reflecting this minimum standard. Some, however, would enjoy higher levels of security because of wider obligations under the GB SQSS to minimise the risks of loss of supply. Since the additional security is required only to prevent loss of supply, rather than enhance the generator's connection, this would be factored into the demand side tariffs.

#### *Discount for a single circuit connection*

Notwithstanding the transfer of the security element of the tariff to demand customers, it remains the case that generators with restricted access to the transmission system should not be liable to the same use of system charges as generators with full access rights (and compensation payments).

In the pre-consultation document, NGET propose that a two-part discount is given to generators with restricted access: firstly, to account for the insecurity of a single circuit connection and, secondly, to reflect the savings associated with the reduced substation asset requirements. For a transmission connected generator located in, say, generation zone 2 the discount would,

typically, be nil for the first part (due to NGET's imposed threshold of tolerance) and £0.50/kW for the second part. That is, the use of system charge would be reduced from £20.52/kW to £20.02/kW, or a 2.5% discount.

We do not believe that any developer would judge a 2.5% discount on use of system charges sufficient incentive to choose a single circuit connection and give up full access rights and, importantly, compensation payments, as assumed in the pre-consultation document. A discount of this magnitude is clearly not reflective of the significantly lower costs to the TO (in capital expenditure) and the GBSO (in compensation payments). Further such a discount would not be adequate trade-off for the developer for the lower security of connection and loss of generation revenue.

From the perspective of the capital expenditure on local infrastructure, we do not believe that the reduction proposed by NGET is truly reflective of the savings associated with constructing a single circuit as opposed to a double circuit connection. This, in our opinion, demonstrates the inadequacy of the charging model. Based on our own analysis, and the conclusions of Ofgem's consultants, to be truly cost-reflective the discount should be of the order of 20% of the full use of system charge, or £4/kW for the example given above. Consequently, we propose that all generators (that is, existing and future customers) with a single circuit connection should be eligible for a discount on the use of system charge of around 20%.

In conclusion, we agree that the current arrangements are resulting in inefficient capital expenditure to facilitate new connections to the transmission network. However we do not believe that any of the options proposed by NGET will, in isolation, resolve this problem. In our opinion, a more thorough review of the connection and charging arrangements are required. As a minimum, this should include:

- A review of the GB SQSS such that the TO has the choice over the standard of connection design, and is allowed to choose a single circuit design provided there is economic justification and, importantly, the operation of the system and overall security of supply are not affected.
- A review of the use of system charging methodology such that the use of system charge paid by users reflects a user's access to, and hence use of, the transmission system. This should include:
  - Transferring the security element of the tariff to demand customers as additional security is required only to prevent loss of supply; and
  - Provision for a reduced charge for generators with a single circuit connection. Our analysis indicates that this reduction should be of the order of 20% (or around £4/kW).

The publication of this pre-consultation paper comes at the same time as NGET has published four other papers on the charging methodology and follows a recent consultation on access to the transmission system. It can be argued that such a 'piecemeal' approach to developing the connection arrangements and charging methodology is creating more problems than are solved. We believe that there should be a holistic review of the connection arrangements and charging methodology. Such a review is, in our opinion, essential in light of the problems that have come about largely as a result of applying the GB TNUoS charging model to the 132 kV transmission system in Scotland.

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

Yours sincerely,

David Densley  
Regulation Manager