

Chris Bennett
Regulatory Frameworks Manager
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

*Promoting choice and
value for all customers*

Direct Dial: 020 7901 7009
Email: stuart.cook@ofgem.gov.uk

Date: 30 March 2009

Dear Chris,

Decision in relation to the Use of System Charging Methodology Modification Proposal GBECM-08: "Introduction of charging arrangements associated with Offshore Transmission Networks"

On 30 December 2008, National Grid Electricity Transmission plc (NGET) submitted the Conclusions Report¹ (the "Report") on Modification Proposal GBECM-08 to the Gas and Electricity Markets Authority (the "Authority") for a decision. The Report recommended to the Authority the introduction of charging arrangements for offshore transmission networks. These arrangements allow the recovery of the costs of transmission infrastructure assets required to facilitate the connection from a generating site located in offshore waters to the onshore network. The proposed methodology is based on the existing onshore arrangements.

In addition to providing details about the offshore charging transmission arrangements, the Report also presented two competing implementation alternatives. These differ only in the way that NGET would recover the charges levied by a Distribution Network Operator (DNO) for the connection and the use of its network when an offshore transmission network connects onshore directly to a distribution network instead of a transmission network:

- **Option 1** would introduce an embedded transmission charge within the TNUoS charging methodology;
- **Option 2** would require the establishment of a new, separate charging methodology outside the TNUoS charging methodology.

The Authority has considered Modification Proposal GBECM-08, the issues raised in the Report and the responses to Ofgem's recent Impact Assessment² consultation undertaken in respect of GBECM-08. The Authority has decided **not to veto GBECM-08 Option 1** and **to veto GBECM-08 Option 2** on the grounds that the former better facilitates the relevant objectives. The modification will be effective following the commencement of the forthcoming regulatory regime for offshore transmission³.

This letter sets out the background to the modification proposal and explains the proposed modification. It then sets out the framework under which the modification proposal is considered and under which a decision needs to be made, provides a high level summary of

¹ Conclusions Report, GBECM-08 is available at:

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

² Impact assessment is available from the Ofgem website (reference number 07/09):

<http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/Charging/Documents1/090204GBECM08IA.pdf>

³ The offshore transmission network come into existence with the commencement of sections 89 and 180 of the Energy Act 2004, i.e. the 'Go-live' date (June 2010) from which point unlicensed participation in the transmission of electricity offshore at voltages of 132kV and above would be a prohibited activity.

Ofgem's impact assessment and the responses received, and sets out the Authority's reasons for its decision.

Background

The Energy Act 2004 provided the Secretary of State with powers to extend the prohibitions of the Electricity Act 1989 into offshore waters (territorial seas and the Renewable Energy Zone) and to establish a regulatory regime for offshore transmission and distribution. Section 4 of the Electricity Act 1989 prohibits the generation, transmission, distribution and supply of electricity to premises without a licence, Section 5 gives a power to the Secretary of State to grant exemptions from this requirement and Section 6 provides for the issue of licences.

In accordance with the Government decision in April 2006⁴, transmission licensees operating offshore will be price-controlled. In March 2007⁵, the Secretary of State announced that he considered that parties should be free to compete for transmission licences and the right to build, own and operate offshore transmission systems. The Secretary of State also announced he considered that, as far as practical, the current transmission licence and industry code arrangements are the most appropriate model for licensing and regulating the new transmission systems which are needed to connect offshore generators.

Proposed Modification

Modification Proposal GBECM-08 seeks to establish a charging regime for offshore transmission assets. The key features of NGET's proposals are as follows:

- There are two broad categories of asset included in the design of every generation connection to the GB transmission network. The first category includes generation assets that comprise the generator circuits up to the boundary with the transmission network; owned, built and paid for by the generator. The second category includes assets that facilitate connection to, and comprise part of, the GB transmission system; normally owned, built and maintained by the relevant Transmission Owner (TO). These "transmission" assets fall into two distinct sub-categories; transmission connection assets and transmission infrastructure assets, the costs of which are included in the transmission price control and recovered under the remit of NGET's Connection or TNUoS charging methodologies. This principle is applied offshore.
- The charging boundary between Connection and TNUoS charges will continue to be set by the principle of "single user connection assets" – thus "transmission connection assets" are assets which are not and would not normally be used by any other connected party. The costs of these assets are recovered directly from the generator via connection charges.
- In the context of offshore, the above definition will continue to exclude all assets which are shared or could be potentially shared by more than one user - thus "transmission infrastructure asset" costs will be recovered from all users of the GB transmission system via TNUoS charges.⁶
- The Connection and Use of System Code (CUSC)⁷ and SO-TO Code (STC)⁸ will continue to set out the ownership boundary between the assets that form the generation circuits and the generation point of connection to the Main Interconnected Transmission System (MITS). This boundary determines the extent to which a user has a degree of influence over the design of assets (for example, in terms of the level of redundancy and

⁴ Available from BERR's website: <http://www.berr.gov.uk/files/file27137.pdf>

⁵ Available from BERR's website: www.berr.gov.uk/files/file38027.pdf

⁶ This approach ensures the benefits and disadvantages of asset sharing can be realised by all infrastructure users in general rather than by individual parties, as these assets can ultimately benefit all users of the transmission system, on a more cost-reflective basis.

⁷ Section 2.12.1 of the CUSC defines the division of ownership to be at the electrical boundary. This basic "busbar" rule applies in relation to all plant connected to the GB Transmission system.

⁸ Section D (Part 1) 3.1.1 applies the busbar rule as a "default" planning boundary "subject to any contrary agreement between the relevant TO and NGC".

capacity). This is known as “customer choice” and is subject to a set of conditions⁹, reflected in the generation connection design criteria set out in Section 2 of the GB Security and Quality of Supply Standard (GBSQSS). This ownership boundary can be set by agreement between the NGET and the generator.¹⁰ This principle is applied offshore.

- The distinction between the classification of assets for the purposes of charging (potentially shareable or sole use) and the definition of assets that are subject to the design criteria within the GBSQSS (assets that comprise the generator circuits up to the boundary with the transmission network) will continue offshore. As onshore, it is therefore possible for a generator to choose to apply (in agreement with the TO) an ownership boundary that allows more assets to be shareable, owned by the TO and charged accordingly.¹¹
- The TNUoS charges for both onshore and offshore generators will continue to be levied on the basis of their booked capacity (rather than their installed capacity) and both the offshore and onshore TNUoS tariff are structured to include the four charge elements:
 - **‘Local’ circuit charge.** This component relates to the cost of transmission infrastructure assets used by generators to connect to the MITS.
 - **‘Local’ substation charge.** This charge relates to the unit costs of relevant design and type of local infrastructure substation assets required for each connection.
 - **‘Wider’ locational charge.** This charge component will be calculated on the basis of zonal averaging approaches and the generic cost base for carrying unit power over unit distance.
 - **Residual charge.** A residual non-locational element that ensures that the total income from TNUoS charges recover the relevant allowed revenue for the licensee.
- Following the same definition as onshore, offshore transmission will be categorised as infrastructure ‘local’ to the connection of the offshore generation, and hence the relevant costs recovered from local substation and local circuit elements of the TNUoS charges. These are to be derived under the same principles as under the onshore arrangements, but with some specific details introduced for calculating offshore tariffs. In particular, the local circuit expansion factors and local circuit security factors will be defined for each Offshore Transmission Owner (OFTO); in contrast, the onshore charging methodology defines these factors for each type of circuit. The local substation tariff would be based on the OFTO revenue for relevant assets including the offshore platform, but would contain a discount to reflect the fact that onshore substation tariff does not include civil costs¹². The wider locational and residual tariffs are based on the existing calculation method.
- When the offshore transmission regime comes into existence there will be a revision to the existing onshore generation zones to reflect the inclusion of offshore generation in the transport model.
- The proposal continues the current split of revenue recovery between generation and demand (i.e. 27% from all generation customers and 73% from all demand customers).
- Previous offshore policy documents have concluded that in the case of an offshore transmission network connecting onshore directly to a distribution network instead of a transmission network, the GB System Operator (GBSO) will contract with the relevant DNO and be responsible for paying the charges for the connection and the use of its

⁹ Including not to lower the security below MITS criteria and not to cause additional costs to other users.

¹⁰ As allowed for under the CUSC (section 2.12 – Principles of Ownership). For example, moving the ownership boundary closer to the generation station through the application of a LV boundary will result in more assets being recovered under the remit of NGET’s TNUoS charging or connection charging methodology when compared to a High Voltage (HV) boundary.

¹¹ The normal consequence onshore is that a transformer will be considered a transmission connection asset, owned by the relevant TO rather than the generator, the costs of which will be charged directly to the user.

¹² Civil engineering works associated with building the foundations for electrical infrastructure assets at local substations.

network. Therefore, in addition to the above arrangements, the Report recommended that NGET recover such costs from the relevant offshore generators through the introduction of a new embedded transmission charge within the TNUoS charging methodology. To accommodate this connection scenario, as discussed above, NGET presented two competing options:

- **Option 1** would introduce an embedded transmission charge within the TNUoS charging methodology;
- **Option 2** would require the establishment of a new, separate charging methodology outside the TNUoS charging methodology.

The Authority's legal duties and obligations

The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002, the Energy Act 2004 and the Energy Act 2008, as well as arising from directly effective European Community legislation. Duties and functions relating to electricity are set out in the Electricity Act 1989.

The Authority's principal objective when carrying out certain of its functions under the Electricity Act is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition.

On 5 October 2004 the Authority became subject to two additional statutory duties under the Energy Act 2004. These relate to contributing to the achievement of sustainable development and having regard to the principles of best regulatory practice.

On 26 January 2009 the general duties of the Authority in carrying out its functions under the Gas Act 1986 and the Electricity Act 1989 were modified with the commencement of the new provisions of the Energy Act 2008. In particular, the changes mean that, when carrying out its functions in the manner which it considers is best calculated to further its principal objective, the Authority must do so by having regard to the need to contribute to the achievement of sustainable development equally with the need to have regard to the need to secure that all reasonable demands for electricity and gas are met and that licensees are able to finance their regulated activities.

Impact assessment

Section 5A of the Utilities Act 2000 (Duty of the Authority to carry out an impact assessment) applies where: (a) the Authority is proposing to do anything for the purposes of, or in connection with, the carrying out of any function exercisable under or by virtue of Part 1 of the Electricity Act or the Gas Act; and (b) it appears to the Authority that the proposal is important within the meaning set out in section 5A, but does not apply where the urgency of the matter makes it impracticable or inappropriate for the Authority to comply with the requirements of section 5A. Where section 5A applies, the Authority must either carry out and publish an impact assessment or publish a statement setting out its reasons for thinking that it is unnecessary for it to carry out an impact assessment.

In accordance with Section 5A of the Utilities Act 2000, Ofgem undertook an impact assessment on GBECM-08, which was published on 4 February 2009.

Respondents' views

We received 8 responses to our impact assessment, one of which contained a confidential appendix. This section summarises respondents' views on the issues raised in the impact assessment consultation document. Full copies of non-confidential responses are available on Ofgem's website.

General principles

Of the 8 respondents received, one was supportive of the proposed modification on the basis that it will better facilitate achievement of the use of system charging methodology relevant objectives of cost reflectivity and facilitating competition. Of the remaining respondents, five did not support the charging proposals, one did not support ECM-08 solely on the basis of the embedded transmission elements and the last respondent was generally unsupportive but had practical reservations about rejecting the proposals, given the uncertainty caused by further delays before a revised approach could be determined. The main concerns expressed by the five respondents unsupportive of the charging proposals, four of which have an active interest in offshore generation projects, were:

- The proposed 'local' charging arrangements for offshore generation users are not consistent with 'local' charging arrangements for onshore generation users;
- The differences in arrangements between onshore and offshore generators appear to go against NGET's licence obligation not to discriminate between these classes of network user; and
- Existing projects have been advanced on the basis that the cost of offshore platforms and substation assets should be treated as non-locational infrastructure and shared across all users of the transmission network. This represents a "substantial rise in costs" and has a "detrimental impact" on the development of the future offshore regime.

Three respondents were supportive of the general principle of offering a more cost-reflective charging signal for local offshore transmission infrastructure assets and consistent charging arrangements for onshore and offshore generation. Of these, one respondent made the general observation that "the proposed local TNUoS charge for offshore generation users is demonstrably cost-reflective". Another respondent supported the proposal on the basis that it ensures offshore generators are charged consistently and equitably with those onshore. The third respondent, although supportive of the general principle, did not consider the proposal to deliver consistent charging arrangements in practice, on the basis that the proposed discount to the offshore substation tariff is too low.

The specific concerns raised by respondents when addressing the detail of the calculation of the offshore 'local' circuit charges, substation tariffs, the adjustment to the offshore substation tariff and the application of the embedded transmission elements are discussed in the following paragraphs.

Basis of charges for offshore generation users

One respondent noted that the basis for 'local' TNUoS charges for offshore generation users (which utilises historical, actual investment costs) would be very different to that used to determine the 'local' TNUoS charges for onshore generation users (where charges utilise generic incremental current costs). It concludes that such differences mean that charging arrangements would not be consistent, do not reflect the cost differences in the provision of transmission services and constitute undue discrimination between these classes of network users.

Introduction of a "deep" charge

Three respondents commented that the proposed extension of the 'local' TNUoS charging arrangements under GBECM-11 for offshore generation users would effectively reintroduce a form of deep connection charge for users of offshore connections, a principle which was originally removed by the introduction of the "plugs" connection charging methodology in April 2004¹³. While one respondent noted that such an approach would be more cost

¹³ Prior to the introduction of plugs, many of the transmission connection assets that facilitated the connection of a generator to the transmission system were classified as "connection", the costs of which were charged directly to a specific user. The charging boundary was therefore much "deeper" into the transmission network. On its introduction, the plugs methodology moved the charging boundary closer to the generator circuits, a "shallow" connection model, thereby decreasing the amount

reflective, relative to onshore, another believed the proposal to be neither cost reflective nor equitable. This second respondent commented that the methodology employed "arbitrary engineering criteria".

One respondent went on to reject NGET's explanation that the proposed modification does not represent a "deep" connection charge noting that the full cost of offshore transmission services would be directly recovered from offshore generation users. To illustrate this point, the respondent highlighted an extreme scenario where 30% of the total annual costs of GB transmission related to offshore transmission. In these circumstances, to comply with the existing 27% revenue recovery rule from generation users, the proposed modification would generate a negative charge equal to 3% of total annual cost to be levied on onshore generation users. The respondent questions whether this would represent a cost-reflective outcome.

Another respondent raised concerns that the approach might discourage developers from optimising the design of their connection and installing spare capacity which in theory could be used by additional developments in the location.

Local circuit expansion factors

Two respondents did not support the use of project specific circuit expansion factors for offshore users on the basis that this represents a different methodology to that used to determine 'local' TNUoS charges for onshore generation users. One respondent noted that the offshore circuit expansion constants derived from annual revenue requirements of the OFTO would reflect the historic cost of capital investment and the actual financing and overhead costs of the OFTO, an approach which is less cost-reflective than the equivalent onshore arrangements.

Treatment of reactive capability

One respondent believes that the proposal to include the entire reactive compensation asset cost within the specific circuit expansion factor, and therefore within the local circuit charge, is inequitable. The respondent also believes that only locational costs should be reflected in expansion factors and that some element of the reactive cost should be shared between wider system users. The respondent concludes that to charge the entire cost to the offshore generator effectively discriminates against offshore generators for the reason that the offshore generator is required to provide compensation to a point remote to the Connection Point whereas onshore this is not the case.

Local security factor

Two respondents did not support the use of connection-specific security factors on the basis that this represents a different methodology to that used to determine 'local' TNUoS charges for onshore generation users. Both respondents noted that there is no recognition of the actual redundancy (be that partial or full) of the connection for onshore generation users.

Another respondent observed that while the general principle is that generators should not be affected by decisions made by the OFTO, in the example of a design with two 132kV cables instead of one higher voltage cable, both designs with the same level of spare capacity, then a generator would have to pay for the spare capacity in the former but not the latter.

Local substation tariff

We received six responses which commented on the introduction and form of an offshore 'local' substation tariff; one supportive and five unsupportive. Of the five respondents, the

of assets defined as connection and transferring a substantial proportion of the costs associated with the local transmission infrastructure assets to TNUoS charges recovered from all users of the GB transmission system. Under the "deep" connection charging model there was no direct reflection in an individual generator's TNUoS charges of the capital costs (or savings) associated with variations to connection designs.

general concern was that such an approach was a significant change, creating a major additional cost to generators at a crucial moment in the development of an offshore regime.

Of the five respondents, one noted that the inclusion of a local substation element for generator TNUoS charges creates an inconsistency with the onshore methodology used to determine the 'local' TNUoS charges for onshore generation users. It noted that the offshore substation tariff would be derived from the annual revenue requirements of the OFTO, determined by the successful tender bid, net of an adjustment. In contrast, the respondent noted that generic onshore substation tariffs are derived from the current cost of capital investment in substation assets, highlighting the poor cost reflectivity of the arrangements for local onshore generation users.

Substation discount

At our request, NGET provided the following additional detail on the method of calculation of the substation discount, based on an analysis of a sample of recent schemes: *"Four recent and typical onshore generation connection schemes were examined representing a range of differing generation technologies and sizes of generator. The total average cost across the total generation capacity for the site procuring a "per unit" £/kW cost, which ranged from £0.2 to £0.5/kW. The £0.35/kW discount is derived from an average of the schemes."*

Another respondent raised concerns about the ability of the proposals to accurately identify the civil and electrical functions, and therefore costs, of substation assets.

Complexity and transparency

Some respondents voiced concern that the proposal increases the complexity of the TNUoS charging methodology and introduces instability to the charging arrangements. One respondent went further to suggest that the different methodologies proposed for determining the 'local' TNUoS charge onshore and offshore are confusing and, as a consequence, will not facilitate effective competition.

Two respondents noted that predicting transmission charges is already difficult and there is no assessment by NGET or Ofgem of whether the proposals will improve or degrade predictability. One respondent went on to suggest that Ofgem's impact assessment precedes the availability of a TNUoS model that would allow users to model and assess the impacts accurately.

Impact on viability of projects

Four respondents raised concerns with the targeting of incremental substation and circuit costs on generators. These respondents were of the view that the proposals would undermine support for the new regime with the suggestion that in extreme cases the investment would no longer be economically viable (although we note that no evidence was submitted by any respondent in support of this argument).

Some of the above respondents raised the specific point that the cost of cable and reactive compensation equipment in the example quoted in the impact assessment were underestimated and could increase local circuit tariff above NGET's estimated levels. However, two respondents acknowledged the practical difficulty of carrying out any generic cost benefit analysis as there is little real project data or experience that can be used as a benchmark for costs.

Treatment of embedded transmission connections

As discussed above, NGET note that in the case of an offshore transmission network connecting onshore directly to a distribution network instead of a transmission network, the GBSO will contract with the relevant DNO and be responsible for paying the charges for the connection and the use of its network. Therefore, NGET propose to recover such costs from

the relevant offshore generators through the introduction of a new embedded transmission charge within the TNUoS charging methodology (NGET's implementation Option 1).

The majority of respondents did not express an opinion on the principle of the creation of a new charge for embedded transmission within the use of system charging methodology. Of the two respondents that did comment, while neither disputed the principle of paying for use of the onshore distribution system, both were not supportive of embedded transmission proposals being included as part of GBECM-08 on the basis that they believed the proposals to be unduly discriminatory against the embedded transmission class of generator. This view was formed on the basis that such generators will be exposed to a wider TNUoS charge when they do not benefit from access to the wider system in the same manner as other transmission connected generators.

One respondent expressed significant concern that an alternative 'strawman' model had not received adequate industry consideration in accordance with good industry practice. This respondent is concerned that the issue has already been pre-judged, prior to the end of the consultation period afforded to it, and due regulatory practice in this matter has not been followed.

Ofgem's views

NGET is required to make proposals to modify a methodology where it considers a modification would better achieve the relevant objectives in Standard condition C5 of the electricity transmission licence: (a) in relation to competition, (b) in relation to cost-reflectivity and (c) taking account of developments in its transmission business. We note that NGET is of the opinion that the modification proposal will better facilitate achievement of the use of system charging methodology relevant objectives (b) and (c). However, in deciding whether or not to veto any proposal, the Authority must consider whether the modification better facilitates the achievement of the relevant objectives and must then consider whether the proposal is consistent with the Authority's principal objective and general duties.

General

We note that while some respondents felt that the proposal goes some way to achieving the stated goal, the majority of respondents raised similar concerns on specific aspects of the proposal in relation to consistency and differential treatment. These concerns can be summarised in three broad areas:

- The proposed ('local charging') arrangements are not consistent with the arrangements which apply for onshore generation users and are discriminatory;
- Existing projects have been advanced on the basis that differs from the proposals; the change represents a "substantial rise in costs" and has a "detrimental impact" on the development of the future offshore generation regime; and
- Over time, the proposals will have the effect of reducing the proportion of total revenue to be recovered from onshore generation.

These points are discussed further below in relation to the relevant objectives. However, to address these concerns we consider it helpful to provide some general observations on these issues.

First, we consider ECM-08 applies: (i) a consistent and common 'local' boundary definition (ii) consistency in the provision of customer choice and adequate information to make that choice, and (iii) equally to all existing and new generators, regardless of location or technology. ECM-08 therefore extends consistent cost-reflective charging arrangements (provided under ECM-11) to offshore transmission and sharpens generators' exposure to the costs they incur on the system.

In terms of the treatment of offshore substation costs, we note that the proposed derivation of the offshore local substation tariff differs from the onshore calculation in two elements:

1. Onshore, a set of 9 substation tariffs have been derived from an analysis of average generic costs. This analysis is based on three categories of cost factor; (i) voltage¹⁴, (ii) the sum of TEC at the substation¹⁵, and (iii) redundancy of transmission assets¹⁶. In contrast, the approach offshore is nodally specific and reflects onto the user the cost of the use of the potentially sharable transmission infrastructure assets and platform at the offshore connection substation. The connection-specific treatment will result in the offshore substation tariff recovering the costs of the specific infrastructure assets that the generator is using (currently reflected in the TEC booking), but not the capacity installed by the OFTO of each asset component.
2. The costs of civil engineering works associated with building the foundations for onshore electrical infrastructure assets at local substations are not included in the local substation tariffs, but recovered from the residual tariff instead. Offshore this is a major part of the offshore transmission costs and recovered as part of the local offshore substation tariff. To ensure an even-handed treatment NGET's proposal reduces the offshore local substation tariff by an amount equivalent to the average of civil costs for onshore substations.

It is our view that the "different" treatment of civil costs is equivalent to creating bands of substation civil costs; one for *onshore*, based on an average of the broadly narrow cost range of civil costs, and individual project-based *offshore* bands (given the higher capital cost overall and variation in size cost and design of individual projects). The key point to note is that the arrangements apply cost reflective arrangements wherever practical.

Second, we note that NGET has been consulting for the best part of a year on these proposals. We highlighted this issue in a letter we sent to NGET in May 2008. This letter set out our concerns that about the robustness of their prior approach which included the sharing of the substation costs between all users based on the onshore regime at that time, on the basis that such costs should be considered infrastructure as assets were potentially shareable (a characteristic required to deliver the potential of future offshore networks). NGET has now undertaken further analysis, re-consulted with industry and presented its conclusion. Thus, we do not agree with the view expressed by one respondent that the issue has already been pre-judged, prior to the end of the consultation period afforded to it, and due regulatory practice in this matter has not been followed.

Third, we note that under the proposed arrangements the differential in TNUoS locational tariff between an offshore generator (A) and onshore generator (B) connected to the same onshore grid entry point will continue to reflect the relative cost differentials of the infrastructure assets. For example, if the offshore infrastructure of generator A costs £10m more per annum than the infrastructure costs of generator B, as the locational element of TNUoS is cost reflective, Generator A will pay £10m per annum more than Generator B. This is consistent with the cost-reflective principles of the current onshore methodology. These relative cost differentials are maintained whatever the G/D split.

Finally, we note that the extreme scenario provided by one respondent (negative charge equal to 3% of total annual cost to be levied on onshore generation users) is based on the assumptions that the current arrangements will prevail unchanged over a very long period of time. To be clear, the direction that the Authority has been asked to make is in relation to the modification proposal ECM-08 which itself is based on NGET's assessment of whether it is appropriate to extend the onshore principles offshore. Therefore the arrangements are aimed at the short to medium term development of an offshore regime for the development of confirmed R1 and R2 offshore transmission connections, explicitly in the form of radial networks through single circuits or circuits with partial redundancy relative to the amount of generation connected to them. In terms of future development, we note that NGET has a

¹⁴ 400kV, 275kV or 132kV and below.

¹⁵ The combined TEC of all generation at the connecting substation. Less than 1320MW or greater than 1320MW.

¹⁶ Double busbar substation design; single circuit or redundancy connection.

licence obligation to keep all aspects of its charging methodology under review at all times (SLC C5 (1)). This requires NGET to consider whether any future development of offshore transmission circuits (e.g. Round 3) would necessitate changes to the charging methodology. We note that if the future development of the GB transmission system is seen to be leading to undesirable consequences (e.g. maintaining the current G:D split) then this can be reviewed by NGET as part of the charging methodology as a whole under SLC C5 (1).

An assessment of the impact of the proposals in light of each of the relevant objectives of NGET's electricity transmission licence is set out below. Our assessment, while covering the whole package of the proposal, pays particular attention to whether any new or different approaches proposed for offshore better facilitates the relevant objectives. In doing so, we take note of the following physical differences between onshore and offshore transmission:

- Compared with onshore, offshore connections have a higher capital cost; and
- Compared to onshore, there is a wider variation in the size, cost and design of individual projects.

Where relevant, this assessment draws on views expressed by respondents to the impact assessment.

Relevant objectives

SLC C5 5(a) – Facilitates effective competition in the generation and supply of electricity and facilitates competition in the sale, distribution and purchase of electricity

Robust cost-reflective charging arrangements play a central role in promoting efficiency and facilitating effective competition in the generation market. Customer choice is also a key principle in encouraging competition in any market.

We consider that competition would benefit from the introduction of more cost-reflective TNUoS charges, particularly for those asset costs at a local level and those connections whose design will have a higher capital cost (associated with the higher cost of assets suitable for use in an offshore environment and offshore installation costs) such as intermittent, renewable generation in offshore waters.

We consider that GBECM-08 would have a positive competitive effect by:

- **Applying a consistent and common 'local' boundary definition and consistency in the provision of customer choice and adequate information to make that choice.** NGET's proposal better facilitates the principle of customer choice by improving the ability of users to assess more effectively the cost and charging implications of alternative connection designs and location for themselves.

We think that NGET's proposal is consistent with this principle because it allows the customer to undertake a more robust assessment of: the level of their transmission costs, the security of their transmission connection, and the consequence of the varied connection design. We are of the opinion that providing generators with more information on their costs improves their ability to choose the type of connection which is most suitable for their needs and helps better achieve the objective of an economically efficient transmission network.

- **Extending consistent cost-reflective charging arrangements to offshore transmission and sharpening generators' exposure to the costs they incur on the system.** We note that these charging arrangements will apply equally to all generators regardless of location or technology. By providing a more cost-reflective charging signal to all generators across GB we consider the proposed charging arrangements to have a general positive effect on competition in the generation market by allowing offshore and onshore generation to compete with each other on a level playing field.

- **Exerting relative competitive pressures** for a particular class of new entrant seeking to enter the GB market, namely offshore generation. Competition is promoted by effectively targeting the transmission costs on the generator that causes those costs. This should place competitive incentives on generators to locate and design their projects in a manner that imposes lower transmission costs on consumers; and
- **Disaggregating the local and wider cost-reflective charge has the potential to reduce the costs of entering the market** by allowing a more accurate impact on relevant assets by splitting out a local network, particularly in view of the differences in the level and variability of capital costs offshore. We consider that offshore generators may be better to realise and benefit from the trade-off between the cost of transmission capacity and the level of security for the connection.

Of the two competing implementation options for embedded transmission arrangements, we consider that Option 1 better facilitates the achievement of relevant objective (a) given that it will avoid the burden of implementing parallel governance processes.

The DNO charging arrangements proposed, requiring only technical changes in the treatment of the pass-through elements in NGET's revenue restriction licence condition, is consistent with the relevant licence objectives and established policy positions. They are also consistent with the principles which have been applied for the onshore arrangements. We consider that the simplicity of the arrangements proposed sufficiently outweighs the potential need to deal with proposals to develop a new, separate charging methodology outside the TNUoS charging methodology that introduce socialisation of the embedded transmission charges.

We note the concerns raised by respondents over the way in which the modification might impact negatively on competition effects because of the increased complexity of the TNUoS charging methodology. These points are set out in more detail below.

Complexity, transparency and predictability

A potential barrier to competition is the transparency and complexity of the rules under which generators participate in the wholesale market. Charging constitutes one element of those arrangements. The ability for customers to make informed decisions about their connection design and location is further encouraged if generators can see simplicity, predictability and transparency in the charges that they will pay.

We note NGET's attempt to provide clarity through the transparent provision of a more cost-reflective financial signal and improving the ability of users to assess more effectively the cost and charging implications of alternative connection designs and locations.

We believe that the proposed methodology would result in no more complexity than is apparent for the onshore regime. Further, we consider that if there are differences in the onshore and proposed offshore approach which might be considered to result in greater complexity these can be justified on the basis that they result in improved cost-reflective charging signal and the positive effects this has in facilitating effective customer choice and on competition in general. We consider the combined effect of these factors to be to the benefit of all generators and, ultimately, consumers.

We also note that any additional complexity will be offset by the improvements in the transparency of the supporting information available on NGET's website and from the accompanying regulatory and industry code framework. For example, new and future Users will continue to be able to calculate TNUoS tariffs (both local and wider components) using the publicly available Tariff model and a separate guidance note on the new arrangements is to be produced and published by NGET. We consider the quality and transparency of supporting information to be critical. We will be looking for NGET to work hard to ensure that generators have all of the information they need to ensure a full understanding of the new charging arrangements.

Finally, we note that the proposals imply that offshore tariffs will directly reflect the approved OFTO revenue stream across the 20-year revenue period, as determined within the successful

tender bid. Consequently, we recognise that it is not possible to produce exact offshore TNUoS tariffs prior to tender award. NGET intend to produce indicative examples to aid future offshore developers in the estimation of future TNUoS tariffs. In April 2009, NGET intend to make available a simple model that will allow the adjustment of the physical and financial assumptions behind the indicative example with the intention of matching those of actual future projects.

Consistency and non-discrimination

A key consideration in the development of effective competition is that there should not be undue discrimination between participants in the market and arrangements should be consistent, wherever possible and appropriate. NGET's charging arrangements will apply equally to all existing and new generators, regardless of location or technology. We are therefore satisfied that the proposal does not discriminate either in favour or against any class or type of generation user.

Differential treatment of onshore and offshore generation users

We note that the proposed treatment of offshore generation users for local circuits is consistent with the current charging methodology, i.e. both the additional costs and savings due to "user choice" are excluded from the local circuit charge calculations. This will protect generators from the actions of other users (e.g. connections) or network design decisions made by the licensee¹⁷. It is also consistent with the treatment of wider 'spare' capacity; additional costs and savings are excluded from locational charges and instead recovered from the residual.

Given the wider variability of high costs from project to project, averaging them into generic expansion factors could inappropriately dilute the cost reflectivity of the resulting offshore tariff. We remain of the view that deriving the offshore local circuit expansion factors using actual cost data is an appropriate way of achieving consistent cost-reflective local circuit tariff onshore and offshore.

While we recognise that the charging arrangements of GBECM-08 may have deficiencies we consider that the modification delivers a better solution and results in more cost-reflective local charging signal for generators than is achievable at the moment. We consider that the modification better facilitates the achievement of the relevant objectives and has a general positive effect on competition in the generation market by providing a more cost-reflective charging signal to all generators across GB. In terms of future development, we note that NGET has a licence obligation to keep its charging methodology under review at all times (SLC C5 (1)) and therefore should continue to strive for a more cost reflective approach onshore and offshore. Such changes will then be assessed in conjunction with industry.

Treatment of offshore substation asset costs

We note that the proposed treatment of offshore generation users for local substation assets is consistent with the current onshore charging methodology as provided under GBECM-11, i.e. both the additional costs and savings due to "user choice" are excluded from the local charge calculations which will protect generators from the actions of other users (e.g. connections) or network design decisions made by the licensee. It is also consistent with the treatment of wider 'spare' capacity; additional costs and savings are excluded from the locational charge and instead recovered from the residual.

Provision of reactive capability

We acknowledge NGET's explanation that the OFTO's costs for providing reactive compensation are a direct replacement of what would be incurred by the offshore generators

¹⁷ Should local system conditions subsequently change, i.e. if further generation seeks a connection in the same location in the future, such that the conditionality of the design variation criteria is no longer satisfied, then alternative arrangements, (e.g. construction of a second circuit) must be put in place. In this instance, the existence of the shallow connection boundary will shield the generator from the full costs of design decisions made by the OFTO for wider system reasons.

to provide the reactive capability themselves. As such, we consider that it is appropriately to target the costs on those users that cause and benefit from them. Including the costs in calculating the local circuit expansion factor would appear to be an appropriate approach of achieving this.

SLC C5 5(b) – Cost reflectivity – charges which reflect, as far as far as reasonably practicable, the costs incurred

In order for competition to be facilitated, charges should accurately reflect the costs that generators incur on the transmission system. We feel it is correct that generator TNUoS charges should as far as reasonably practicable reflect the costs imposed on the system arising from an offshore generators' connection design and location.

We recognise that any attempt by NGET to provide a more cost-reflective signal to users will expose individual users to the cost implications of their decisions. This will enable those parties to make efficient decisions on the location and design of their connection. This in turn ensures that the cost of delivery of the transmission infrastructure is not higher than it needs to be. It is these costs which will ultimately be borne by electricity consumers.

There are several aspects of GBECM-08 that are aimed at improving the overall cost reflectivity of the methodology and the cost reflectivity of the offshore local charging signal relative to the onshore charging regime. These include:

- More accurately calculating the marginal cost of flows along local offshore circuits by applying connection-specific expansion factors based on actual cost data, whereas they are based on averages for a number of circuits onshore;
- Including the appropriate OFTO's costs of providing reactive capability at the Grid Entry Point whereas generators provide this capability onshore themselves;
- Applying security factors offshore that take the exact level of redundancy subject to a cap (currently 1.8). Given that the offshore transmission links have higher capital costs than onshore and are likely to be via circuits which do not provide similar levels of security, differences in security factor can have more material impact on the charges. We also note that NGET is seeking to adopt an approach onshore that would utilise local security factors that more closely recognise actual redundancy.
- A criticism noted by one respondent was that, in the example of a connection design with two 132kV cables instead of one higher voltage cable and where both designs had the same level of spare capacity, a generator would have to pay for the spare capacity in the former but not the latter. We note that this approach is consistent with the approach adopted onshore and with the principle of "customer choice" where the commercial decision on the connection design rests ultimately with the developer and will be guided by the developer's own cost benefit analysis. This also applies to the design of the generation assets.
- Introducing a connection-specific offshore local substation tariff based on actual cost components. The onshore local substation tariff is derived from the average for a number of substation types and categorised against three cost determining factors.
- Incorporating civil engineering costs in the offshore tariff to avoid inappropriate averaging of significantly different costs (given the higher capital cost overall and variation in size, cost and design of individual projects) and ensuring only the incremental costs between onshore and offshore are included the local offshore substation tariff. Onshore, civil engineering costs are excluded from the onshore tariff and recovered from the residual instead; and
- By reducing the amount of the offshore tariff by an amount equal to the average onshore substation civil engineering costs.

We are of the opinion that these features better facilitate achievement of the cost reflectivity relevant objective. The features improve the cost reflectivity of the charges to generators and more accurately reflect the costs to users considering connections which are not fully secure or are distant from the MITS boundary while maintaining the advantages associated with the charging arrangements for the use of shared wider assets for the purpose of the bulk transfer of power.

We consider that NGET's project-specific offshore approach, as opposed to a generic averaging approach, reflects the more widely variable range of higher costs offshore. We also note the difficulty in pursuing a generic costs approach due to the lack of sufficient historical data.

The proposed use of capacity booked (rather than the full capacity installed, both onshore and offshore) ensures that users' charges better reflect their own impact on transmission costs. In particular, users would remain protected from the consequences of investment decisions of future generators seeking connection at this site and the over-provision of assets by the OFTOs for wider strategic reasons.

In terms of the value of the offshore local substation discount, we acknowledge the views of some respondents raising concerns over the ability of NGET to accurately identify the civil and electrical functions and costs, and therefore the value the proposed discount (reflecting onshore civil costs). In response, NGET has provided the following further explanation: "*In developing the methodology, recent projects were examined and filtered under the following criteria:*

- *Connections of various magnitudes were considered to take into account both variable and fixed cost elements associated with civil work.*
- *A range of generation and substation technologies were considered.*
- *Geographic spread: Civil costs will vary with factors such as local ground subterranean structure/ composition.*
- *Typical: Projects with one-off or highly exceptional civil works were not considered as were not representative of future works.*

This ensured that the most robust, cost reflective, stable and non-complex methodology was developed. In order to test the robustness of the resultant methodology, NGET recently examined three further projects which have been developed in detail since the publishing of the Offshore Consultation. The project sizes range from 700-1000MW, includes both GIS and AIS technology and are not geographically proximate. The average civil works cost for these projects are £0.331/kW (with a range of £0.296/kW to £0.402/kW) as compared to the proposed substation tariff adjustment of £0.350/kW, showing a continued close correlation.

As with all aspects of the Charging Methodology, NGET will keep the proposed Local Substation Discount under constant review to ensure its continued accuracy."

Finally, we consider that by charging substation, as well as cable assets, on a cost reflective basis to the relevant generator(s), the incentive for any misallocation of costs by the OFTO will be much reduced.

SLC C5 5(c) – Properly taking account of developments in the transmission system

We are of the view that the arrangements in GBECM-08 will complement the changing nature of the transmission network, in particular by providing the Use of System charging arrangements required for the introduction of the regulated offshore transmission network in 2010/11. They will provide more cost-reflective signals to users to assist in the development of an economic and efficient transmission system.

We also consider that the offshore charging proposals are compatible with the developments in NGET's transmission business in relation to its role and responsibilities as designate GBSO

for offshore transmission as well as the wider development in the licensing and regulatory regime for offshore transmission.

The Authority's decision

Ofgem considers that Option 1 of the proposed modification would better facilitate achievement of the relevant objectives specified in NGET's electricity transmission licence for the reasons set out above and that it is consistent with the Authority's general duties and obligations. The Authority has therefore decided **not to veto Option 1 of the modification proposal, and to veto Option 2 of the modification proposal.**

Please contact me on the number above, or Anthony Mungall on 0141 331 6010, if you have any queries in relation to the issues raised in this letter.

Yours sincerely

Stuart Cook
Director of Transmission

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