

Charging arrangements associated with GB SQSS design variations based on customer requests

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Overview:

National Grid Electricity Transmission plc (NGET) has responsibility for establishing how users of the GB transmission network, such as generators and electricity suppliers, should be charged for using the network. In this context, NGET has proposed a change to the way generators should be charged. This change, if implemented, would mean that generators who choose to have a cheaper, less secure connection will pay lower charges.

Ofgem has the ability to intervene to stop the proposal being implemented if we do not think the change is appropriate. Before we decide on whether to exercise this power of veto we have chosen to publish an impact assessment seeking wider views. This document is our impact assessment.

Contact name and details: Grant McEachran, Head of Transmission Charging

Tel: 0141 331 6011

Email: grant.mceachran@ofgem.gov.uk

Team: Networks, Transmission

Context

Standard condition C5 of National Grid Electricity Transmission plc's ("NGET") electricity transmission licence requires it to keep its use of system charging methodology under review at all times and to make proposals to modify that methodology as required with a view to the methodology better achieving its relevant objectives in relation to cost-reflectivity, competition and reflecting developments in the transmission system.

NGET has raised a proposed modification in order to provide a mechanism whereby capital savings associated with single circuit connection can be passed through to customers who choose such a connection. On 17 November it submitted this to the Gas and Electricity Markets Authority (the "Authority")¹ for a decision.

The Authority is required to assess proposed modifications to the use of system charging methodology and to decide whether or not to veto those proposals. Under Section 5A of the Utilities Act 2000 the Authority is required to carry out an impact assessment where it considers a proposal is important within the meaning set out in section 5A. On 5 December 2006, we published a letter confirming that it was our intention to undertake an impact assessment before it makes a decision on this proposal. This document sets out that impact assessment.

Associated Documents

- SQSS design variation: Pre-consultation document - NGET, August 2006
www.nationalgrid.com/NR/ronlyres/8A0E0369-A358-4FBC-BAB7-9B1FC8A31512/9272/GBECM06SQSSDesignVariationpreconsultation.pdf
- SQSS design variation: Consultation - NGET, October 2006
www.nationalgrid.com/NR/ronlyres/597EB9D5-DD49-4605-BBEC-388816C4416C/11930/GBECM06SQSSDesignVariationsConsultation.pdf
- SQSS design variation: Conclusions Report - NGET, November 2006
www.nationalgrid.com/NR/ronlyres/ED88CECC-7B6C-44AB-9020-345BF4E17FB4/12859/GBECM06ConclusionsReport.pdf
- Use of system charging methodology modification proposal GB ECM-06: SQSS design variation based on customer requests - Ofgem, December 2006
www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/17940_209_06.pdf?wtfrom=/ofgem/index.jsp

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

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Summary

Issue

The planning criteria for the direct connection of generators or demand customers to the GB transmission system are set out in the GB Security and Quality of Supply Standard ("SQSS") document. The connection design meeting the standard requirements specified by the SQSS has at least one duplicate element at connection interfaces - e.g. a double circuit connection. The SQSS also allows generators or demand customers to choose a standard of connection with a higher or lower standard as long as: the security of the main system is not affected; it would not result in additional costs to another party overall; and it would not compromise the ability of the transmission licensees to meet their other obligations.

Therefore, in order to comply with the SQSS a generator wishing to have a connection with lower level of security would have to accept certain conditions. These conditions include uncompensated access restrictions in the event a single circuit was unavailable; and also the potential requirement for alternative arrangements to be put in place such that the standard condition continues to be satisfied should system conditions change, for example as the result of a new generator connection. Under the existing charging arrangements the savings from utilising fewer transmission infrastructure assets associated with a lower-security connection would not be passed directly to the connectee but rather would be shared among all users. The consequence of these combined factors is that under the existing arrangements there is weak incentive for customers to choose a less costly connection with a lower level of security.

National Grid Electricity Transmission plc ("NGET") has proposed a modification to its use of system charging methodology which it argues would provide a financial signal by which the capital saving associated with a single circuit design would be reflected in a user's charges, thereby enabling those parties to make efficient decisions regarding the merits of a single circuit connection.

Purpose of this document

The Authority is required to assess a modification proposal and decide whether or not to veto it on the basis of whether it results in the better achievement of the relevant objectives set out in NGET's transmission licence and in relation to our wider duties and principal objective. Before publishing a decision on a modification proposal, the Authority may undertake an impact assessment in accordance with Section 5A of the Utilities Act 2000. The Authority is required to undertake an impact assessment where it appears to the Authority that a proposal is important. Section 5A defines the criteria for judging whether a proposal is "important".

Having assessed NGET's modification proposal in relation to the charging arrangements associated with SQSS design variation we concluded that this proposal met the importance criteria set out in the Utilities Act and published a letter on 5 December confirming our intention to undertake an impact assessment before making a decision on NGET's charging proposal. The purpose of this document is to

set out that impact assessment as a means of seeking further views from interested parties on the impacts of the proposed change.

Way forward

In line with our published guidance on impact assessment, this document provides six weeks for respondents to submit any comments. Having received and had time to fully consider those responses, we are planning to take a decision on NGET's proposed modification by 16 February 2007.

NGET is seeking to implement the modification proposal from 1 April 2007 in order to allow the discount to be reflected in the 2007/08 charging year.

1. Background and structure of document

Chapter Summary

This chapter set out the background to this document and the legal framework against which the document is developed. It also sets out a summary of the chapter structure of the document.

Question box

There are no questions in this chapter.

Background

1.1. In April 2005 the British Electricity Trading and Transmission Arrangements ("BETTA") came into effect. As part of BETTA, the plugs 'shallow'² connection charging arrangements were introduced across Great Britain ("GB") whereby connection assets were defined as assets for the sole use of each connected party. The impact of plugs was that many of the assets previously classified as connection were reclassified as use of system.

1.2. Prior to the introduction of plugs, a customer choosing a lower standard of connection design had the lower costs directly reflected in lower connection charges. However, since infrastructure assets are funded from use of system rather than connection charges then following the introduction of plugs the savings associated with a single circuit connection would no longer be passed directly to that customer but rather would be shared among all users. There is only, therefore, a weaker incentive for a generator to choose a single circuit connection even though that option may be more efficient.

1.3. On 11 August 2006, NGET published a pre-consultation document which set out various options in relation to the treatment of single circuit connections. Those options were:

- Retaining the status quo;
- A change to the SQSS;
- A return to 'deeper' connection charging for generation connections; and
- A change to the use of system charging methodology.

² The arrangements are shallow in the sense that the costs of any assets which are shared or sharable by another user are recovered from all users through use of system charges.

1.4. Following the receipt of responses NGET published a consultation document on 10 October. That document noted broad support for the option to change the use of system charging methodology and sought further views on this approach.

1.5. On 17 November NGET submitted a conclusions report to the Authority setting out a proposal to change the use of system charging methodology.

1.6. On 5 December we published an open letter setting out our intention to undertake an impact assessment on NGET's proposed modification and to publish this prior to Christmas with a view to making a decision on NGET's proposal by 16 February 2007.

Legal framework

Electricity Act 1989

1.7. The Electricity Act 1989 (the "Act") sets down the legislative structure under which the electricity industry operates including the roles and duties of the Authority. Sections 3A to 3C set out the Authority's principal objective and statutory duties.

1.8. The Authority's principal objective is "to protect the interests of consumers ... wherever appropriate by promoting effective competition". In addition the Act places a number of other duties on the Authority including carrying out its functions in a manner which is best calculated to secure a diverse and viable long term energy supply and having regard to the effect of any proposal on the environment.

1.9. 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. In carrying out its duties the Authority must also have regard to any additional guidance issued by the Secretary of State in relation to social or environmental policies.

1.10. In addition to the regulatory framework set out under the Act, the electricity industry is also subject to European law and competition law. Section 3D of the Act confirms that the obligations imposed on the Authority under Sections 3A to 3C of that Act do not override contradictory duties or obligations under European law including Directive 2003/54/EC concerning common rules for the internal market in electricity and Directive 2001/77/EC concerning the promotion of electricity from renewable sources in the internal market.

Licence obligations

1.11. Standard condition C5 of NGET's electricity transmission licence sets out the relevant licence objectives with which the use of system charging methodology must conform. These are:

- a. to facilitate 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;
- b. to result in charges which reflect, as far as is reasonably practicable, the costs incurred by the licensee in its transmission business; and that
- c. so far as is consistent with sub-paragraphs (a) and (b), the Use of System charging methodology, as far as is reasonably practicable, properly takes account of the developments in the licensee's transmission business.

1.12. In making its decision whether or not to veto the proposed charging methodology the Authority will first consider if the proposals meet the relevant licence objectives.

Impact assessment

1.13. 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 believing that it is unnecessary for it to undertake an impact assessment.

1.14. Section 5A(2) sets out the matters which would determine whether or not a proposal is "important" for the purposes of section 5A. These are where a proposal:

- a. Involves a major change in the activities carried out by the Authority;
- b. Has a significant impact on market participants in the gas or electricity sectors;
- c. Has a significant impact upon persons engaged in commercial activities connected to the gas or electricity sectors;
- d. Has a significant impact on the general public in GB or in a part of GB; and
- e. Has significant effects on the environment.

Structure of document

1.15. The remainder of this document is structured as follows:

- Chapter 2 sets out a brief explanation of NGET's proposed modification to the use of system charging methodology.
- Chapter 3 provides an assessment of the impact of the proposal in relation to the relevant objectives.
- Chapter 4 provides an assessment of the impact of the proposal in relation to wider considerations.

- Chapter 5 sets out an assessment of the impact of the proposal in relation to the environment.
- Chapter 6 sets out the way forward.

2. Outline of NGET's modification proposal

Chapter Summary

This chapter summarises NGET's proposed modification to the use of system charging methodology.

Question box

There are no questions in this chapter.

Modification Proposal

Description of proposal

2.1. The proposed modification put forward by NGET involves the introduction of one discount mechanisms comprising two elements. The purpose of the discount is to adjust Transmission Network Use of System ("TNUoS") charges to reflect the capital savings associated with a single circuit design variation connection.

2.2. An example of how the discount may affect a typical customer has been provided by NGET and is included in Appendix 3 of this document.

Substation discount

2.3. The first discount element is to reflect the savings associated with the reduction in substation assets required for a single circuit connection as opposed to a double circuit connection. These savings are not distance related. NGET propose to reflect those savings in a £/kW discount to the TNUoS tariffs. The proposed discounts vary by connection voltage and range from £3.12/kW to £0.49/kW.

2.4. NGET propose to review the substation discounts at the beginning of each Transmission Price Control Review and during each price control period to adjust the discounts by RPI.

Circuit discount

2.5. The second proposed discount element is in relation to the savings associated with circuit assets. These savings are distance related. The discount is intended to reflect the capital efficiencies from constructing a single overhead line, or cable, as compared to a double circuit.

2.6. NGET propose to reflect the circuit discount in a nodal specific £/kW tariff reduction from the TNUoS charge. It will be calculated by multiplying the circuit marginal length in km by the expansion constant measured in £/MWkm.

Eligibility for discounts

2.7. NGET propose that all SQSS single circuit design variation connections that have arisen from a customer request and have a spur length of 2km or greater will be eligible for the discount.

2.8. The criteria for variations to connection designs also state that should system conditions subsequently change, for example due to the proposed connection of a new customer, such that either immediately or in the foreseeable future, the conditions within the SQSS are no longer satisfied, then alternative arrangements and/or agreements must be put in place such that the standard continues to be satisfied. This means that, should a new customer wish to connect with an SQSS compliant connection at the same point as one receiving a discount due to a design variation, then the connection must be upgraded and the discount will end. There will be no "grandfathering³" of the discount to TNUoS charges.

Implementation date

2.9. Subject to the Authority not vetoing the proposal, NGET has set an implementation date for the proposal of 1 April 2007. This would allow the discount to be reflected in charges for the TNUoS charging year 2007/08.

³ "Grandfathering" is a where a right is protected even if the existing arrangements change.

3. Outline of NGET's modification proposal

Chapter Summary

This chapter sets out an assessment of the impact of the modification proposal in relation to the relevant objectives of NGET's transmission licence. In other words, it considers the relevant impacts in terms of cost-reflectivity, competition and reflecting development in the system.

Question box

Question 1: Do respondents have any views on the appropriateness and size of the discounts described?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents feel that the discounts available reflect the types and sizes of connections that have been built as well as those currently within the GB queue?

Question 4: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

Impact in relation to relevant objectives

3.1. We must assess the proposed change against the relevant objectives for NGET's charging methodology, as specified in NGET's licence. An assessment of the impact of the proposal in the light of each of these objectives is provided below. Where relevant, this draws on views expressed by interested parties to date.

Cost-reflectivity

3.2. NGET's charging methodology is required to be cost-reflective. In broad terms, the proposal could impact on the cost-reflectivity of the methodology in the following ways:

- It will increase the numbers of ways in which charges potentially vary for different users by allowing charges for specific users to vary with user choices over connection design;
- It will base the differences in charges on simplified assumptions about differences in actual costs whether a user chooses a less secure connection design; and
- It will update the parameters of the discount to allow for changes in underlying cost data provided by the transmission companies every five years.

3.3. Each of these areas is considered in turn below.

The introduction of a discount

3.4. Currently charges for use of the transmission network do not differentiate between users with different types of access or connection. Any underlying cost differences that result for a user choosing to adopt a less secure connection are not being reflected in that user's charges. The proposal will introduce such a differentiation in charging treatment.

3.5. An impact of the proposal is therefore to provide users with a stronger financial incentive to choose a less secure connection design, other things being equal, than is currently the case.

Method of calculating the level of discount

3.6. The level of discounts proposed by NGET for users opting for a less secure connection design is calculated using a number of simplified assumptions, as outlined in chapter 2 above. The impact of these simplified assumptions on the objective of cost reflectivity depends on how reasonable and robust the simplified assumptions are relative to the actual costs that should appropriately be reflected.

3.7. In response to NGET's consultation, some respondents voiced concerns over whether the level of discount was appropriate. Some considered that the discounts were too high while others characterised them as inappropriately low. If there is systematic bias in how the level of discount is calculated (either way), then an impact of the proposal could be the lost opportunity of introducing a more cost reflective discount scheme.

3.8. Those stating that the discounts were too low believed that, as the discounts stand, they do not provide an adequate incentive to connect via the more efficient, but less secure, single circuit design. One particular view that was expressed for example was that for a generator to be properly incentivised by cost-reflective charges the total discount should be increased to around 20% of the total TNUoS charge. If related to the example offered in Appendix 3, this would make the discount for zone 9 (southern Scotland) £2.43/kW as opposed to the £1.44/kW proposed by NGET.

3.9. On the other hand there were respondents that expressed the view that the discounts (in particular the circuit element) were too large. One such response, for example, stated that the circuit element of the discount was approximately 25% larger than it should have been.

3.10. Given this range of opinion, we would welcome further evidence in support of these competing views as a means of assessing the impact of the proposal relative to the objective of cost reflectivity.

3.11. The final point about the variance of charges which is worth noting is the fact that the substation discounts that NGET have proposed differ depending on the voltage levels involved in the connection. NGET are of the opinion that the substation investment cost savings for lower voltage connections are relatively higher than those for higher voltage connections. The table below shows the substation discounts that NGET propose. If the differentials between the voltage discounts are appropriate then the expected impact would be for parties to make the most efficient choice of connection at their particular location. If, however, the differentials were not appropriate then, from the perspective of cost-reflectivity some parties may make a less efficient decision. Parties' views on the appropriateness of different substation discounts for different voltages would be welcomed.

	Tariff substation discount (£/kW)
33kV connection	3.12
132 kV connection	1.05
275kV and 400kV connection	0.49

3.12. Within the current charging methodology, the costs for substation assets are charged across all customers within the non-locational element of the overall TNUoS charge. NGET argue that to reflect truly the savings associated with a single circuit, it must include substation assets within the discount, which is calculated for specific substations. As such the proposal would introduce an internal difference within NGET's methodology in respect of its treatment of sub-station costs. We would welcome views on this difference of application of cost-reflectivity as proposed by NGET relative to the principles adopted in its charging methodology more generally.

Cost data

3.13. To derive the discounts within its proposal, NGET used generic cost data for a range of connection designs. NGET stated that the discounts are designed to accurately reflect the true cost savings of connecting via a single circuit as opposed to an SQSS compliant connection.

3.14. To compile this generic data, NGET issued a data request to the Scottish Transmission Owners ("TOs") which required them to submit costs for a range of substation assets. NGET are of the opinion that these were broadly reflective of the types of single circuit connections currently being built, as well as those being proposed in the foreseeable future.

3.15. In making our assessment we must ensure that the discounts are relevant not only to the types of connection that may be offered in the foreseeable future but also to those that have been offered and built in the past. If the level of the discounts is appropriate then the impact on connectees should be that their charges reflect the costs they impose on the system. If the discount was not available to those already connected then they would be paying higher charges than the cost-reflective level.

We welcome views on whether parties believe these costs to be reflective of and appropriate for the types of connections that have been and are currently being offered to customers.

3.16. Another point worth noting regarding the basis of the discounts is that NGET's proposed approach to calculating the substation element of the discount differs from that proposed for the circuit element. Instead of using the average of specific cost assessment provided by the Scottish TOs, the circuit discount proposed by NGET is based on generic values for expansion constant, expansion factor and modified security factor from the GB use of system charging methodology. We would welcome any views on this in response to this impact assessment.

3.17. NGET propose to update the discounts periodically every five years to ensure consistency with the assumptions on costs used within the TPCR. This is with the aim of ensuring the discounts are up to date and cost reflective.

Competition

3.18. NGET's charging methodology is required to facilitate effective competition in the generation and supply of electricity. In broad terms, the proposal could impact on competition in the following ways:

- It provides generators with an opportunity to reduce their costs if they are content to trade in the wholesale market with a less secure connection design - hence making available a potential source of competitive advantage which is not currently available;
- It makes the charging methodology more complex;
- The proposal might be particularly relevant to intermittent generation - and as such might reduce a potential barrier to entry for a particular class of new entrant; but
- Whether the size of the competitive advantage is appropriate or not depends on whether the size of the discount is appropriate. A discount which is systematically too high or too low could distort competition.

3.19. Each of these areas is considered in turn below.

Competitive advantage

3.20. In general we support the concept of increased customer choice and the positive impact it has on competition. Choice enables customers to make the most efficient decisions regarding their connections and in doing so have greater control over their costs.

3.21. However, in this case the issue has been raised by a number of respondents that allowing a customer to decide on the type of connection method, may place the TOs in conflict with their legal obligation of maintaining an "efficient, co-ordinated and economical"⁴ network. Respondents argued that what is economic and efficient for one customer may not be for the wider needs of the transmission network. As it was raised by a number of parties, we would welcome any further views in responses to this impact assessment on which party should make connection decisions. By raising the proposed modification, NGET has demonstrated that it does not share this view - and that affording users with this choice is, in its view, consistent with operating an efficient and economic network.

3.22. The key concept that underpins this proposal is that the customer should retain the choice of what type of connection is most efficient for itself, rather than the TO stipulating the type of connection it believes to be most efficient. On the whole, respondents to NGET's consultation were supportive of the right for users to choose. However, there were parties that did not agree that the customer should be the party deciding on the infrastructure that would provide the most efficient connection. It was argued that the only party in a position to determine what is most efficient (particularly from a wider networks perspective) is the TO involved in the connection. We invite parties to comment further on this.

Complexity

3.23. A potential barrier to competition is the transparency and complexity in the rules under which generators participate in the electricity wholesale market. The charging arrangements are one element of the arrangements.

3.24. The impact of the proposal is to increase the complexity of the charging methodology, albeit the increased complexity is relatively small, and the decision of a generator to avail itself of the proposed discount is optional. Further, the existing arrangements ensure that the transparency of the charging methodology more generally will continue irrespective of this proposal.

Impacts on particular classes of generator

3.25. We note the sliding scale of discounts for substations may be seen as benefiting smaller and intermittent generators on the basis that the discounts available are relatively larger than those which would be available to large generators. Further, the concept of a less secure connection might, in general, be more attractive and relevant to a smaller, intermittent generator and compared to a larger, baseload generator.

⁴ Section 9 (1)(a) of the Electricity Act 1989

3.26. While it is unlikely that the discount will represent the difference for a generator between choosing to enter the market or not, the discount could influence the commercial position at the margin. It might therefore represent a small reduction in barriers to entry relative to a position where no discount is available.

3.27. We welcome any views parties may have on this, in particular on the types of generation that may benefit or be affected and any wider consequential impacts this may have.

3.28. Another issue which respondents have raised in the context of barriers to entry is, in accordance with the SQSS, that any discount a customer may receive should cease in the event that a future customer connects at the same point and require an SQSS compliant connection. Some respondents stated that this was discriminatory to those customers who would lose their discounts as their choice had been removed without recourse. There were some calls for the discount to be agreed and in place for the life of the connection or until the customer receiving the discount no longer requires it. This would inevitably give rise to situations where customers had an SQSS compliant connection yet would receive a discount.

3.29. We feel that the risk of losing the discount at some point in the future should and could be factored into the initial economic decisions made by customers when deciding on the location and type of connection for their sites. Continuing a discount after a customer receives an SQSS compliant connection would mean they no longer pay charges reflective of the true costs they incur on the system. We feel this is unfair and discriminates against other users. We would welcome any further views on this.

Impact of level of discount on competition

3.30. In order to facilitate competition in generation, it is important that the charges levied on customers are cost reflective. It is important therefore that the discounts that are being proposed accurately reflect the capital cost savings of connecting via a single circuit and therefore do not unduly discriminate against types of/individual customers.

3.31. The appropriate size of the discount was discussed above specifically in the context of cost-reflectivity. We are seeking respondents' views on this issue with regards to its impact on competition.

Reflecting developments

3.32. The discounts proposed within this modification are a consequence of the changes to connection charging introduced with the plugs shallow charging methodology. Under a deeper connection regime, customers were provided with sharper transmission cost signals relating to their connection designs, and hence were better placed to make efficient trade-off between costs and security of their transmission connection. The change to a shallow connection boundary has transferred the cost signal from connection charges to use of system charges.

Potentially this results in the strength of the incentive to choose a design variation connection is reduced. We welcome NGET's moves to review the charging methodology to reflect these developments.

3.33. Within responses to NGET's consultations on the proposal, concerns were raised that this was further evidence of a continual, reactive and piecemeal approach to modifying the charging methodology. It was stated that this "tinkering" was affecting the certainty and stability of charges and destabilising the industry. There are currently ongoing moves to update the SQSS in light of industry developments which may have to be accounted for in future charging methodologies. It was stated within responses that there should be a general review and update of the charging methodology as a whole, taking account of recent and foreseeable developments elsewhere (such as in the SQSS) to move away from the perceived reactive process that may currently exist. We welcome respondents' view on this point.

3.34. Finally, prior to making a decision on this proposal, there are certain implementation issues that first need to be considered. One key issue is the effect the proposal would have on those customers in the GB queue that have accepted an offer without considering the potential impact of a discount for single circuit connection on their decision. We are mindful that a large number of those in the queue may wish to revisit their offers should this be approved. There are, therefore, possibly significant implementation issues (particularly for the TOs) should customers wish to revisit their offers. We are not in a position to be able to quantify the impact of these issues. It would therefore be useful for parties to comment on their thoughts on what effects this proposal may have on the GB queue and the offer process in general.

4. Assessment of other factors

Chapter Summary

This chapter sets out an assessment of the other key aspects of the proposal that are relevant to the Authority's wider duties. These include consideration of the impacts on the environment, security of supply and non-discrimination.

Question box

Question 1: Do respondents have any views on the additional analysis set out in this chapter?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

Areas for assessment

4.1. This section sets out an assessment of the impact of NGET's proposal on factors that are relevant to the Authority's principal objective and statutory duties. This assessment is not intended to be an exhaustive assessment of all general duties but only those we consider are of relevance to the assessment of the impact of NGET's proposal.

Non-discrimination

4.2. There are a number of respects in which a consideration of non-discrimination is relevant to NGET's proposal.

4.3. First, all SQSS single circuit design variation connections that have arisen from a customer request and have a spur length of 2km or greater will be eligible for the discount. This means that from the perspective of eligibility, all connectees, whether generation or demand and irrespective of size or location, are treated non-discriminatorily. We welcome respondents' views on this issue.

4.4. Under NGET's proposals a customer would lose its discount in the event of a future connection of a third party at the same connection point. We note that the connection of a third party may result in the construction of a double circuit connection with firm access rights. If the original customer were not to lose its discount then it would be treated differently to the other generators connected at the same point that would not get the discount. Equally, it would also be treated differently from other parties receiving a discount who continued to have a lower

level of security and non-firm access rights. Therefore, any approach which involved retaining the discount could be considered discriminatory. In this context NGET's proposed approach can be considered non-discriminatory. We note the views of one respondent that an approach based on retaining the discount could be attributed to different historical factors and therefore may not amount to undue discrimination. We welcome views on this position.

4.5. A further area in which a consideration of discrimination is relevant is in relation to the varying level of the substation discount at different voltage levels. One respondent to NGET's consultations considered this to favour smaller, intermittent generators whilst discriminating against larger power stations that are only able to connect at higher voltages.

4.6. In order for the modification to be non-discriminatory, the proposed discount must be available to all customers. As well as those currently making a request for connection, it must also be made available to those already connected as well as those wishing to be connected in the future. As stated previously this may impact existing connection agreements and offers for connection.

Security of supply

4.7. The key issue in relation to security of supply is the ongoing role of the SQSS. The SQSS sets out the criteria for variations to connection designs. The criteria ensure that any choice of non-standard connection design has no implication for the security of the main interconnected transmission system or for the security and quality of supply of all customers. On this basis, we do not consider there to be any security issues associated with NGET's proposed change to the use of system charging methodology. If parties however have a different opinion or additional views on this, we would welcome them.

Best regulatory practice

4.8. The modification proposal, and more explicitly Ofgem's approach to assessing the proposal, is relevant to the Authority's obligations regarding best regulatory practice. Our decision to publish this impact assessment and to give six weeks for responses is in line with our published impact assessment guidance. We recognise that generally we try to provide a longer time for responses should a consultation fall over a holiday period, but note that in this case we may be required to publish a direction on NGET's modification proposal by 16 February 2007. Taking into consideration the need to provide a sufficient period of time to consider respondents' views and noting the extensive consultation process that has already been undertaken on this subject, we consider that a six week consultation period including the holiday period is appropriate in this case.

4.9. In addition, from the perspective of transparency, we published an open letter at the earliest possible stage setting out our intention to undertake an impact assessment and the implications of the timescales associated with that decision for our decision-making process.

4.10. We consider that the impact of providing such guidance is to provide industry with greater certainty regarding the likely future impact of proposals.

Interests of consumers

4.11. It is in the interests of consumers that the charging arrangements facilitate efficient use of and connection to the transmission system, which in turn helps to achieve efficient electricity supply overall.

4.12. To the extent that NGET's proposed discounts could result in some connectees taking better account of transmission costs in making choice of a more efficient connection design then the total costs of transmission should be reduced to the benefit of consumers.

4.13. If the discount was not of the appropriate magnitude to appropriately incentivise connectees then any positive impacts on consumers are likely to be diluted or not realised at all. For example, if the discount were too low it would be expected that fewer parties would opt for an efficient single circuit connection and thus the total costs of the transmission system would be at a less efficient level.

5. Environmental impact assessment

Chapter Summary

This chapter sets out an assessment of the environmental impacts relevant to NGET's use of system charging proposal.

Question box

Question 1: Do respondents consider that we have appropriately outlined the key environmental impacts of the proposal?

Question 2: Do respondents consider that there are other environmental impacts that should have been assessed?

Question 3: Do respondents have any additional analysis in relation to environmental impacts that they wish to present?

Utilities Act 2000

5.1. Pursuant to Section 5(2) of the Utilities Act 2000, it is a requirement of an impact assessment undertaken by Ofgem to include an assessment of the impact on the environment of the decision being considered. This section seeks to identify the different ways in which the proposal might impact on the environment.

5.2. In 1999, electricity generation accounted for about a third of UK CO₂ emissions. Any proposals that have implications for the levels of generation could make a significant contribution to the UK's emission reduction commitments under the Kyoto Protocol.

Impact on the balance of different generation types

5.3. One potential consideration for the environment is the implication of any proposal for the different forms of generation connected to the transmission network.

5.4. Different forms of generation have differing effects on the environment. For example, while greater use of fossil fuel generation would be expected to increase CO₂ emissions, the opposite effect would be expected of the greater use of generation from renewable and nuclear sources.

5.5. Other things being equal, the types of generator that are most likely to consider the option of a single circuit connection are remotely situated intermittent generators such as wind farms. If NGET's proposed discounts create a greater incentive for such parties to opt for a single circuit connection, then the outcome is likely to be positive for the economic connection of intermittent generation which in turn will have a beneficial impact on the environment.

Size of the transmission network

5.6. A key issue for the environment is the size and make-up of the transmission network. Changes in the size of the transmission network have a number of environmental impacts. For example, a reduction in the need for double circuit connections could result in fewer (or smaller) transmission towers. This is particularly the case in remote rural areas where transmission towers are often deemed detrimental to the visual amenity of the area.

5.7. CO₂ is produced in generating the energy necessary to build the steel pylons required to extend the transmission system. A reduction in the building of new transmission pylons as a result of the increased use of single circuits has a consequential positive impact on CO₂ emissions.

Losses

5.8. "Transmission losses" is the term given to the electricity lost on the GB transmission system (mainly as heat) through the physical process of transporting power from power stations to demand. The greater the level of losses, the greater the amount of generation that needs to be transmitted to meet demand. This has negative environmental impacts, such as the emission of CO₂ and acidifying gases to the atmosphere.

5.9. Using fewer transmission assets in parallel would generally result in higher levels of transmission losses. Whilst this negative impact is marginal in comparison to other economical and environmental factors associated with the proposal under consideration, the general issue of the treatment of transmission losses is an important one and is considered separately under other policy work streams.

Total environmental impact

5.10. Overall, a discount that encourages the most efficient development of the transmission network would be expected to have a positive impact on the environment. This is the case both in terms of the economic connection of intermittent generation and in terms of the total size of the transmission network.

5.11. However, it should be noted that if the discount was not of the appropriate magnitude to appropriately incentivise connectees then any positive impacts on the environment are likely to be diluted or not realised at all. For example, if the discount were too low it would be expected that fewer parties would opt for a single circuit connections. Equally, if the discount were too high it could result in some parties requesting a single circuit connection when this was not the most economic solution for the development of the transmission system with the associated implications that short-run environmental gains are ultimately offset by the future requirement to upgrade specific circuits.

6. Process and way forward

Chapter Summary

This chapter sets out the process that we intend to adopt in order to reach a decision on the modification proposal and identifies a timetable for the publication of that decision.

Question box

Question 1: Do respondents have any views on both the process and timetable that are proposed for taking forward this assessment of the modification proposal?

Question 2: Do respondents have any views on the appropriateness of the Authority granting a shorter notice period to allow this modification proposal to be implemented by 1 April 2007 if approved?

Intended process

6.1. In line with our published guidance on impact assessments, this document provides six weeks for respondents to submit any comments. Having received and had time to fully consider those responses the Authority will take a decision on NGET's proposed modification.

6.2. SLC C5(4) of NGET's electricity transmission licence sets out that, where the Authority intends to undertake an impact assessment, NGET will not make any modification to the use of system charging methodology within 3 months of the report being furnished to the Authority. Therefore, we intend to publish our decision on NGET's proposal on or before 16 February 2007.

Implementation

6.3. NGET is seeking to implement the modification proposal from 1 April 2007 in order to allow the discount to be reflected in the 2007/08 charging year.

6.4. In accordance with the Connection Use of System Code ("CUSC"), NGET are required to provide two months notice of the intention to change charges. This would require a decision on the modification proposal to be made by the end of January 2007. Given the publication of this impact assessment this date will not be possible unless the Authority consented to a shorter notice period in accordance with Section 2.15 of the CUSC.

6.5. Where it is deemed appropriate that a modification proposal is not vetoed, we will weigh up the benefits of its early introduction alongside the issues of greater uncertainty associated with a shorter notice period. We welcome respondents' views on this.

Further information

6.6. Appendix 1 sets out both the details for responding to this impact assessment and the appropriate contact details should you have any questions. It also sets out a list of all the key areas where we have sought respondents' views in relation to the contents of this document. Respondents' views are also welcomed on any other aspect of this impact assessment.

Appendices

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Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 26 January 2007 and should be sent to:

- Grant McEachran
- Head of Transmission Charging
- Ofgem
- 70 West Regent St
- Glasgow
- G2 2QZ

- grant.meachran@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to publish its decision on NGET's proposal by 16 February 2007. Any questions on this document should, in the first instance, be directed to:

- Michael Dodd
- Transmission Policy Analyst
- Ofgem
- 70 West Regent St
- Glasgow
- G2 2QZ

- 0141 331 6008
- michael.dodd@ofgem.gov.uk

CHAPTER: Three

Question 1: Do respondents have any views on the appropriateness and size of the discounts described?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents feel that the discounts available reflect the types and sizes of connections that have been built as well as those currently within the GB queue?

Question 4: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

CHAPTER: Four

Question1: Do respondents have any views on the additional analysis set out in this chapter?

Question2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

CHAPTER: Five

Question 1: Do respondents consider that we have appropriately outlined the key environmental impacts of the proposal?

Question 2: Do respondents consider that there are other environmental impacts that should have been assessed?

Question 3: Do respondents have any additional analysis in relation to environmental impacts that they wish to present?

CHAPTER: Six

Question 1: Do respondents have any views on both the process and timetable that are proposed for taking forward this assessment of the modification proposal?

Question 2: Do respondents have any views on the appropriateness of the Authority granting a shorter notice period to allow this modification proposal to be implemented by 1 April 2007 if approved?

Appendix 2 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. 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 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.⁵

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly⁶.

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- The need to secure that all reasonable demands for electricity are met;
- The need to secure that licence holders are able to finance the activities which are the subject of obligations on them⁷; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.⁸

⁵ entitled "Gas Supply" and "Electricity Supply" respectively.

⁶ However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

⁷ under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.

⁸ The Authority may have regard to other descriptions of consumers.

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- Promote efficiency and economy on the part of those licensed⁹ under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- Protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity;
- Contribute to the achievement of sustainable development; and
- Secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- The effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- The principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- Certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation¹⁰ and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

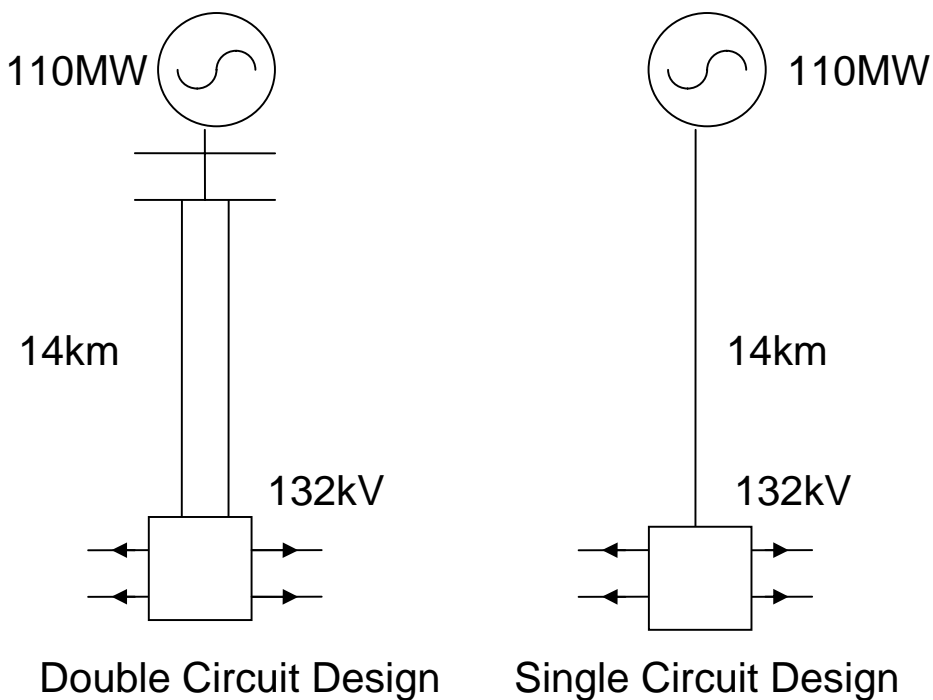
⁹ or persons authorised by exemptions to carry on any activity.

¹⁰ Council Regulation (EC) 1/2003

Appendix 3 - NGET's charging example

1.1. We asked NGET to provide a simple example of what effect the discounts would have on the TNUoS charges for a typical generator connecting to the transmission network via a single circuit.

1.2. A 110MW wind farm is to be constructed 14km away from an existing main interconnected transmission system substation. The generator's connection node would fall within TNUoS tariff zone 9, "South Scotland", as shown in the Statement of the Use of System Charging Methodology.



1.3. The connection voltage in this case is 132kV. Provided all the relevant criteria contained within the GB SQSS are met, a single-circuit design variation connection could be considered.

Source data from the Statement of the Use of System Charging Methodology

SP & NG Region 132kV OHL Expansion Factor	= 2.61
GB Expansion Constant	= £10.07/MWkm
TNUoS Tariff for "South Scotland"	= £12.140893/kW
132kV design variation substation discount	= £1.05/kW

Substation Discount

$$\begin{aligned}
 \text{Annual Substation Discount} &= 132\text{kV Substation Discount} \left(\frac{\text{£}}{\text{kW}} \right) \times \text{Generator TEC (kW)} \\
 &= \text{£}1.05 / \text{kW} \times 110,000 \text{kW} \\
 &= \text{£}115.5\text{k}
 \end{aligned}$$

Circuit Discount

$$\begin{aligned}
 \text{Circuit Discount} \left(\frac{\text{£}}{\text{km}} \right) &= \frac{\text{Single - circuit length (km)} \times \text{Expansion factor} \times \text{Expansion const} \left(\frac{\text{£}}{\text{MWkm}} \right)}{1000} \\
 &= \frac{14\text{km} \times 2.61 \times \text{£}10.07 / \text{MWkm}}{1000} \\
 &= \text{£}0.367958 / \text{kW}
 \end{aligned}$$

$$\begin{aligned}
 \text{Annual Circuit Discount} &= \text{Circuit Discount} \left(\frac{\text{£}}{\text{kW}} \right) \times \text{Generator TEC (kW)} \\
 &= \text{£}0.367958 / \text{kW} \times 110,000 \text{kW} \\
 &= \text{£}40.5\text{k}
 \end{aligned}$$

1.4. For this example, a generator choosing a double circuit connection would pay the full TNUoS tariff for zone 9, "South Scotland", of £12.140893/kW which would result in an annual charge of £1,335.5k. A generator choosing a single-circuit design variation would receive a discount of £1.417958/kW, resulting in an annual charge of £1,179.5k (a total saving of £156k per annum).

Appendix 4 - Glossary

A

[The Authority/ Ofgem](#)

Ofgem is the Office of the Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA), the body established by section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in GB.

B

[British Electricity Trading and Transmission Arrangements \(BETTA\)](#)

BETTA introduced a single GB-wide set of arrangements for trading energy and for access to and use of the transmission system which came fully into effect at BETTA go-live (1 April 2005).

C

[Connection and Use of System Code \(CUSC\)](#)

Multi-party document creating contractual obligations among and between all users of the GB transmission system, parties connected to the GB transmission system and NGET in relation to their connection to and use of the transmission system.

G

[GB transmission system](#)

The system of high voltage electric lines providing for the bulk transfer of electricity across Great Britain.

[GB Transmission System Security and Quality of Supply Standard \(GB SQSS\)](#)

The document prepared pursuant to conditions C17 and D3 of the Transmission Licences, setting out the criteria and methodologies that the GB transmission licensees shall use in the planning and operation of the GB transmission system.

L

[Locational Security Factor](#)

The factor used to uplift the incremental transmission capacity requirements to reflect the requirement for security on the transmission system.

N**Node**

A transmission node is a point on a network at which circuits meet.

P**Plugs**

A method used by NGET to classify network assets (for the purposes of charging) as either general infrastructure assets or connection assets. The plugs model identifies connection assets as excluding any assets which are shared or sharable by another user. The cost of connection assets are used to derive connection charges, while the cost of infrastructure assets is used to derive use of system charges. See Transmission Network Use of System charges.

S**Substation**

An assembly of equipment in an electric power system through which electric energy is passed for transmission, transformation, distribution, or switching.

T**Transmission Network Use of System (TNUoS) charges**

Charges levied by NGET on users of the GB electricity transmission network to recover the costs of providing and maintaining the general network infrastructure assets. TNUoS tariffs vary by location on a zonal basis, and are different for generators and for suppliers. TNUoS tariffs comprise a locational element, derived from the DCLF ICRP model, and a non-locational residual element.

Transmission Owners (TO)

Companies which hold transmission owner licenses. Currently there are three electricity TOs; NGET, SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd.

Transmission Price Control Review (TPCR)

The TPCR will establish the price controls for the transmission licensees which will take effect in April 2007 for a 5-year period. The review applies to the three electricity transmission licensees, NGET, SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd and to the licensed gas transporter responsible for the gas transmission system, NGG.

U**Use of system charging methodology**

The methodology which NGET is required to have in place by its transmission licence and which is used to calculate the charges to customers for use of the GB transmission system. The GB transmission use of system charging methodology is in practice comprised of two separate methodologies – a BSUoS charging methodology (defined above) and a TNUoS charging methodology (defined below).

Appendix 5 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk