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Minimum transmission capacity requirements in the Security and Quality of Supply Standard

Impact Assessment and Consultation

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Overview:

This document assesses the impacts of GSR009, a proposal to modify the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) by amending the criteria for assessing the minimum transmission boundary transfer capability requirements. The proposal, developed by the SQSS Review Group, is intended to ensure that the SQSS sets out appropriate requirements for the treatment of intermittent generation (such as wind) in assessing transmission capacity requirements.

This document considers the potential impacts of the proposal. We are seeking views on the proposal and the impacts we have identified, along with any other issues respondents consider relevant to this proposal.

Context

The National Electricity Transmission System Security Quality of Supply Standard (NETS SQSS) sets out the criteria and methodologies that transmission licensees use in the planning and operation of the transmission system to ensure the security and service quality of the network. The SQSS Review Group is responsible for keeping the standard under review and submitting any proposed changes to us for a decision.

In recent years there has been a significant change in the generation mix connecting to the transmission system. In particular, there has been notable growth in intermittent generation such as wind. This presents a different set of challenges for the transmission network than conventional generation. Therefore the SQSS Review Group felt it was appropriate to review the SQSS requirements in relation to the way different generation types are treated when planning and operating the transmission system. In April, a proposal (known as GSR009) to amend the way minimum transmission capacity requirements are calculated was submitted to the Authority for decision.

This paper represents our analysis of the impact of the GSR009 proposal, and marks the start of a consultation which will help inform our decision making process.

Associated documents

- National Electricity Transmission System Security and Quality of Supply Standard, March 2011 http://www.nationalgrid.com/NR/rdonlyres/784F2DFC-133A-41CD-A624-952EF4CCD29B/45776/NETSSQSS_v21_March2011.pdf

- SQSS Review Group Governance http://www.nationalgrid.com/NR/rdonlyres/00679067-2077-42A0-B975-FA214D179FF4/45777/netssqssgovernanceMarch2011.pdf

- SQSS Review Group Amendment Report (GSR009), April 2011 http://www.nationalgrid.com/NR/rdonlyres/BC265EEB-7415-4C58-8C56-0CF580581B8C/47751/GSR009ofgemreportv1_2_.pdf

- NETS SQSS code drafting for intermittent generation (Review Group Consultation), October 2010 http://www.nationalgrid.com/NR/rdonlyres/8787B41A-FA5F-4112-8ED9-09460B6D8292/43376/Windtextconsultationfinal.pdf

- NETS SQSS Consultation: Review of required boundary transfer capability with significant volumes of intermittent generation, June 2010 http://www.nationalgrid.com/NR/rdonlyres/E22B1547-D4CC-4F88-AEEF-C76305718C25/41720/GSR009SQSSConsultation.pdf

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Executive Summary

Background

The National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS or SQSS) sets out the criteria that transmission licensees must apply when planning and operating the electricity transmission system. The SQSS Review Group ('Review Group') is responsible for considering modifications to the SQSS and making modification recommendations to the Authority.

In recent years there has been significant growth in intermittent generation (such as wind) connecting to the transmission system. This has raised new issues for the design of the transmission system. In light of this, the Review Group felt that it was appropriate to review the design criteria in the SQSS relating to the capability of the Main Interconnected Transmission System (MITS).

The proposal

GSR009 is a proposal to amend Section 4 of the SQSS (and associated appendices), which outlines the assessment of minimum transmission capacity requirements. The proposal recommends a 'dual criteria' approach which incorporates both demand security and economic criteria to be considered in the development of the transmission network. Each of these criteria would include specific assumptions about different types of generation, including intermittent generation.

- The *Demand Security Criterion* requires sufficient transmission system capacity such that peak demand can be met without intermittent generation.

- The *Economy Criterion* requires sufficient transmission system capacity to accommodate all types of generation in order to meet varying levels of demand efficiently. The proposed approach involves a set of deterministic parameters which have been derived from a Cost Benefit Analysis (CBA) seeking to identify an appropriate balance between the constraint costs with the costs of transmission reinforcements.

Summary of impacts

As the proposal would essentially replace one set of deterministic parameters with another more transparent set, there are no direct implementation costs associated with the proposal.

Our analysis shows that the GSR009 proposals would result in the following differences in the levels of required transmission capacity in comparison with applying the current deterministic rules in the SQSS:

- The *Demand Security Criterion* (when becoming the determining factor of required capacity, ie if it is the more onerous of the dual criteria) could result in a level of required transmission capacity higher or lower than the current rules. The effect for any particular boundary would depend on

the proportion of demand within that boundary which is met by local generation and the location of intermittent generation.

- The *Economy Criterion* would result in a required transmission capacity level closer to the optimal level (ie the level that would be determined by a full CBA) than the current deterministic rules, which could be either higher or lower than the result from applying the current rules. In general, the proposed approach is more likely to result in lower total transmission costs (ie including transmission investment and constraints cots) than current rules.

Of course, we note that the SQSS is not the sole determinant of the investment or reinforcement needed on the transmission network. In particular, for significant transmission investment projects, a detailed CBA is normally carried out as part of the wider decision making process. Therefore the GSR009 proposals are not expected to materially impact the level of investment in the transmission system. However, we consider that there is merit in getting a first pass deterministic assessment that more closely matches detailed assessments.

Our assessment indicates that the GSR009 proposal would have the following indirect impacts:

- The proposal would ensure that the SQSS provides a better starting point for considering more detailed and relevant technical solutions and compare their relative merits. This would lead to better efficiency in the transmission licensees planning process.
- The proposal would provide greater transparency for stakeholders. Under the GSR009 proposal the SQSS would offer a better overview of the likely level of transmission capacity at key locations.
- The proposal would provide a clearer starting point for the planning of new transmission and, in particular, planning applications.

Next steps

We would welcome views from interested parties on the potential impacts we have identified, the measurement of these impacts and any other factors relevant to our consideration of this proposal. The deadline for responses to this document is 23 September 2011.

After the consultation period we will consider the responses received as part of our decision making process. We intend to make a decision in autumn 2011.

1. Introduction and background

Chapter summary

In this chapter we explain the background to the GSR009 proposals and set out the legal and assessment framework we intend to use in making our decision.

Question box
There are no questions in this chapter.

Purpose of this document

1.1. This document sets out our assessment of GSR009, a proposal to amend the requirements in relation to the treatment of intermittent generation in the National Electricity Transmission System Security and Quality of Supply Standard (the 'NETS SQSS' or 'SQSS'). This assessment forms the basis of a six week consultation on the proposal, which will help inform our decision.

Background

1.2. The SQSS sets out the minimum criteria that transmission licensees must comply with when planning and operating the National Electricity Transmission System (NETS[1]). The SQSS Review Group (the 'Review Group') is responsible for recommending changes to the SQSS. The Review Group is required to perform its functions to ensure efficient discharge by each of the transmission licensees of the obligations imposed upon it under the Electricity Act 1989 and its associated licences, specifically focusing on the following principles:

- development, maintenance and operation of an efficient, economical and coordinated system of electricity transmission,
- ensure an appropriate level of security and quality of supply and safe operation of the NETS, and
- facilitating effective competition in the generation and supply of electricity[2].

[1] The NETS consists of both the Onshore Transmission System and the Offshore Transmission System.
[2] As set out in the Review Group Governance document: http://www.nationalgrid.com/NR/rdonlyres/00679067-2077-42A0-B975-FA214D179FF4/45777/netssqssgovernanceMarch2011.pdf

1.3. In January 2007 the Review Group initiated work to consider whether the SQSS should set specific parameters for intermittent generation (GSR001)[3]. The review was undertaken in anticipation that there would be significant changes to the generation capacity and technology mix connecting to the NETS in the future. In particular a substantial increase in wind powered generation is expected, along with the further development of other types of intermittent generation (such as wave power).

1.4. At that time there were a number of ongoing reviews of different elements of the SQSS and the Review Group determined that a broader review of the SQSS was needed. This meant that a number of ongoing reviews, including GSR001, were incorporated into one more wide ranging review (referred to as GSR008). However in April 2010 it was decided that in order to allow the issue of intermittent generation to be progressed in a timely fashion, it would be considered as a standalone review (GSR009).

1.5. Following the establishment of the GSR009 review, the Review Group set up a working group to consider the issues and propose any specific changes to the SQSS. The changes proposed relate largely to the methodology used to determine the appropriate level of transmission network capacity that should be developed in light of new generation capacity.

1.6. The Review Group consulted on a range of proposals in June 2010 and then in October 2010 consulted on the proposed text changes in the SQSS. They submitted the final amendment report to the Authority on 1 April 2011, recommending that we approve the proposals. Each of the onshore transmission licensees, who form the Review Group, support the GSR009 proposal.

Legal and assessment framework

1.7. The Authority's principal objective is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition. When carrying out its functions in the manner best calculated to further that principal objective, the Authority must have regard to, amongst other things, securing a diverse and viable long-term energy supply, including the need to ensure that all reasonable demands for gas and electricity are met and also the need to contribute to the achievement of sustainable development.

1.8. In accordance with standard licence conditions C17, D3 and E16 of the electricity transmission licence, onshore and offshore transmission licensees are required to plan and operate the transmission system in accordance with a specific version of the SQSS approved by the Authority. The current version of the SQSS is

[3] Further details on the GSR001 review can be found on the National Grid website. http://www.nationalgrid.com/uk/Electricity/Codes/gbsqsscode/reviews/

Version 2.1 and is published on National Grid Electricity Transmission plc's (NGET) website[4].

1.9. In recognition of the fact that the SQSS may need, from time to time, to be developed and amended to reflect changes in the industry and technology, the transmission licensees have established a Review Group to co-ordinate these activities. Governance arrangements for the group, including the procedures for proposing amendments and recommending changes to the Authority where appropriate, are set out in a governance document[5] produced by the three onshore transmission licensees, NGET, SP Transmission Limited (SPT) and Scottish Hydro Electric Transmission Limited (SHETL)[6].

1.10. Having received an Amendment Report from the Review Group, the Authority then decides whether or not it should approve a version of the SQSS which incorporates the changes proposed. We are undertaking this impact assessment to help inform this decision[7].

1.11. In making its decision we think it is appropriate that the Authority takes into account, amongst other things, whether the proposal better facilitates the principles applied by the Review Group in its review of the SQSS (set out above at paragraph 1.2). The Authority will also have regard to the licence obligations that transmission licensees must comply with and must make a decision that is consistent with its own principal objective and statutory duties, including those arising under European law. We have set out in Appendix 2 further detail on the Authority's decision making framework.

Structure of this document

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

- Chapter 2 describes how the minimum transfer capacity is currently determined and gives further detail on why the GSR009 proposal has been brought forward.
- Chapter 3 sets out the detail of the GSR009 proposal.
- Chapter 4 contains our assessment of the impacts of the GSR009 proposal.
- Chapter 5 outlines the next steps in the decision making process.

[4] http://www.nationalgrid.com/NR/rdonlyres/784F2DFC-133A-41CD-A624-952EF4CCD29B/45776/NETSSQSS_v21_March2011.pdf
[5] http://www.nationalgrid.com/NR/rdonlyres/00679067-2077-42A0-B975-FA214D179FF4/45777/netssqssgovernanceMarch2011.pdf
[6] The Review Group is currently carrying out a consultation on these governance arrangements. http://www.nationalgrid.com/NR/rdonlyres/1B8FCB61-767B-4512-9C5A-C81746EA197A/47812/SQSSGovernanceReviewPaperv10Final.pdf
[7] The Authority is required to undertake an impact assessment where it considers that a decision is important for the purposes of Section 5A of the Utilities Act 2000.

2. The existing approach and case for change

Chapter summary

In this chapter we outline how the SQSS currently determines the minimum transfer capacity requirements and discusses how this approach might be affected by the growth in intermittent generation.

Question box
There are no questions in this chapter.

Minimum transfer capacity requirements

2.1. The SQSS sets out criteria which are used to determine the required capability of the transmission system. This includes separate criteria for determining the capabilities for: local generation circuits that connect generation to the Main Interconnected Transmission System (MITS); radial connection of offshore generation to the MITS; the supply of demand and the required capability of the MITS itself. These criteria are designed to identify the level of capability that ensures adequate demand security, facilitates competition in the generation market and is economic (in terms of the overall cost of transmission development versus constraint costs).

2.2. Section 4 of the SQSS sets out the minimum requirements for the design of the MITS. It is permissible to design to a higher standard than set out in the SQSS provided the higher standard can be justified economically. There are circumstances where it is possible for the MITS capacity to fall below the SQSS minimum level. This can happen either if Ofgem has directed a derogation (in response to a specific request) or under the "self-derogation" arrangement introduced as part of the Connect and Manage regime[8].

2.3. When determining the required level of capacity, the SQSS requires that the system is able to accommodate generation and demand in different zones across the system. This involves considering the limits on the bulk transfer of power across certain system boundaries. Although these boundaries can occur anywhere on the transmission system, there are a set of specific boundaries which are typically considered. Specifically a set of 17 such boundaries (11 in England & Wales, 1 between Scotland and England and 5 in Scotland) are set out the in Seven Year

[8] Details of the connect and manage self derogation arrangements can be found here http://www.decc.gov.uk/assets/decc/Consultations/Improving%20Grid%20Access/251-govt-response-grid-access.pdf

Statement and are commonly used for the purpose of illustrating system performance, the need or otherwise for transmission reinforcement and for describing opportunities. A map showing these boundaries can be found in Appendix 4.

2.4. It should be noted that the SQSS is not the sole determinant of whether a particular investment or reinforcement is needed. In the case of large investment projects a detailed CBA is normally carried out as part of the wider decision making process and can result in the final decision of building higher or lower levels of capacity than that stipulated by the deterministic rules in the SQSS as set out in paragraph 2.2.

What the SQSS currently requires

2.5. The SQSS sets out a series of requirements which the system must satisfy. In order to ensure compliance with these requirements the standard also sets out the 'background conditions' or assumptions which should be used when assessing the required level of capacity. It is these 'background conditions' or assumptions which the GSR009 proposal seeks to modify. These include the output of generating units (including sensitivities) and power flows.

2.6. The existing SQSS states that the required transfer capacity between two parts of the transmission system is based on a prescribed *Planned Transfer* condition plus applying the *Interconnection Allowance*[9] adjustment.

2.7. The *Planned Transfer* condition is set out in Appendix C of the SQSS and defines the first part of the required capacity transfer across boundaries to meet peak demand given assumptions on generation operating to meet peak demand. This effectively scales the registered capacities of each directly connected power station (and large embedded generation) so that the total of the scaled capacities is equal to peak demand minus imports from external systems.

2.8. In p*ractice the tran*smission licensees adopt an additional scaling factor for wind as part of this process. This involves applying an availability factor of 72% for wind generation prior to undertaking the normal SQSS process of scaling demand. The combined impact of the specific wind scaling (72%) and the application of the *Planned Transfer* condition (which typically amounts to a scaling factor of approximately 83%) is that final treatment of wind is equivalent to a 60% scaling.

2.9. The *Interconnection Allowance* is set out in Appendix D of the SQSS and adds the second part to the *Planned Transfer* condition. This is required to ensure that the transmission system does not unduly restrict generation from contributing to demand security, and to take account of non-a*verage condition*s (such as the availability of generation, weather conditions etc). The interconnection allowance

[9] Paragraph 4.4 of Version 2.1 of the NETS SQSS

only applies to boundaries where: the smaller of the two areas of the NETS has peak demand greater than 1500MW; and the boundary does not lie wholly in either the SPT area or SHETL area.

2.10. The SQSS states that the minimum transmission capacity of the MITS should be planned such that:

- the required transfer capacity is met without giving rise to any defined undesirable events (such as thermal overloading of a transmission circuit, unacceptable changes in voltage or system instability)[10].

- the required transfer condition can be subject to a list of prescribed "events" such as a fault outage of a particular transmission equipment without giving rise to any defined undesirable events (such as loss of supply capacity or system instability)[11].

2.11. As mentioned earlier, the SQSS is only one of the factors involved in determining the appropriate level of investments and for large reinforcements CBA is normally carried out as a matter of course.

The impact of intermittent generation

2.12. There is expected to be continued growth in intermittent generation in the coming years. Conventional generation plant generally has fairly predictable performance, and is able to provide power when needed. Intermittent generation such as wind is different as its ability to generate is impacted by availability of the energy source (ie a wind generator can't produce electricity when there is no wind). This presents two potential issues for the SQSS:

- The concern that, for an importing zone containing intermittent generation, it might be imprudent to rely on the output from such generation to secure the supply of demand in that zone. In other words, in considering the required level of transmission capacity on the boundary to such a zone, there may be need to reconsider the treatment of intermittent generation in that zone.

- Whether the existing approach would identify an economically efficient solution for the export of wind generation. In other words, intermittent generation in an exporting zone, with different potential impact on constraints costs (due to intermittency), may justify a different level of transmission capacity than conventional generation with higher load factor. Whilst some temporary scaling factors have been used by the

[10] Paragraph 4.5 of Version 2.1 of the NETS SQSS
[11] Paragraph 4.6 of Version 2.1 of the NETS SQSS

transmission licensees there is a need to carry out thorough review to inform the appropriate treatment.

2.13. In light of this it is therefore necessary to consider whether the existing approach taken to assessing capacity requirements remains appropriate, ie whether the approach set out in the SQSS would indicate a level of transmission capacity requirement which is reasonably close to the optimum.

2.14. Whilst the transmission companies could still rely on additional analysis such as CBA to help determine what the appropriate level of investment should be, there is wide recognition in the industry that the existing deterministic rules in the SQSS should be reviewed and potentially revised.

2.15. Given the need to balance the design of an economically efficient system with ensuring security of supply and enabling competition, the Review Group determined it was appropriate to review the existing SQSS arrangements.

3. The proposal and its development

Chapter summary

In this chapter we outline the different elements of the GSR009 proposal and summarise the process to date.

Question box

Question 1: Do respondents support the proposed dual criteria approach?

The proposal

Dual criteria

3.1. Under the GSR009 proposal, the SQSS would contain two separate assessment criteria (the demand security criterion and the economic criterion), which would be based on two different system backgrounds: the *Security Background* and the *Economy Background*. The more onerous result of the two assessments would be used to determine capacity requirements in each circumstance.

3.2. The *Security Background* would indicate a level of required transfer capacity between two parts of the transmission system based on:

- the *Security Planned Transfer* condition (to be set out in Appendix C of the SQSS)
- plus the *Interconnection Allowance* adjustment (already set out in Appendix D of the SQSS, but with minor modifications).

3.3. The *Economy Background* would indicate a level of required transfer capacity between two parts of the transmission system based on:

- the *Economy Planned Transfer* condition (to be set out in Appendix E of the SQSS)
- plus the *Boundary Allowance* adjustment (to be set out in Appendix F of the SQSS).

Demand Security Criterion

3.4. The *Security Planned Transfer* would be based on the existing *Planned Transfer* arrangements, the main difference being that different availability factors would be applied to the registered capacities of power stations before the uniform scaling procedures are carried out. This would effectively replace the offline adjustment currently made by the transmission licensees (as described in paragraph 2.8). The proposed availability factors are:

0 for stations powered by wind wave or tides

0 for imports of exports from/to external systems

1 for all other power stations

3.5. The *Interconnection Allowance* which is used to adjust the planned transfer in the current version of the SQSS would not be materially altered by the proposal (including the restriction of its application for size of zones and location, as set out in paragraph 2.9), and would be used to adjust the *Security Planned Transfer* condition for the assessment of the capacity required under the demand security criterion.

Economy Criterion

3.6. For the purposes of the *Economy Planned Transfer* condition, generation plant would be split into three categories:

- Non contributory generation – this type of plant, including open cycle gas turbines (OCGTs), would not form part of the generation background.
- Directly scaled plant – where a fixed scaling factor will be applied (most plant would fall into this category).
- Variably scaled plant – all output from plant in this category would be uniformly scaled by a variable scaling factor. The scaling factor would be calculated to ensure that generation and demand balance.

3.7. The proposed scaling factors for directly scaled plant (which would be reviewed at least every five years) are:

- 85% for nuclear stations and coal/gas fired stations fitted with carbon capture and storage (CCS).
- 70% for power stations powered by wind, waves or tides.
- 50% for pumped storage based stations.

- 100% for importing interconnectors.

3.8. The *Boundary Allowance* would be used to adjust the economy planned transfer condition to take into account year round variations in the levels of generation and demand. Unlike the interconnection allowance (which is the corresponding adjustment for the security planned transfer condition under the demand security criterion), the *Boundary Allowance* would apply to all boundaries which split the NETS into two contiguous parts, irrespective of their size or location.

3.9. The *Boundary Allowance* is determined by the group generation and demand in the smaller of the two areas. The full boundary allowance would apply for fault outages and half of the boundary allowance for all other secured events.

Further development

3.10. The proposal states the scaling factors used in the *Economy Criterion* will be regularly reviewed (at least every five years) and revised as appropriate. The Review Group also indicated that it will, along with the wider industry, actively seek ways of improving the accuracy of the input data forecasts.

The development of the proposal

3.11. The Review Group set up a working group which looked at options developed under the earlier GSR001 review and followed up on these in more detail as appropriate as well as looking at additional options. Three key approaches were explored:

- A specific reinforcement CBA – A probabilistic approach which would mean individual CBAs being carried out for each potential boundary reinforcement.

- An indicative incremental CBA – A probabilistic approach in which generic CBA assumptions would be used in order to assess individual reinforcements.

- A Pseudo CBA – A deterministic approach in which key assumptions are set in order to allow an economic assessment of reinforcements. The Pseudo CBA approach would be based on a probabilistic approach but the resulting 'assumptions' would then remain in place for a specific period of time.

3.12. The Review Group consulted on these options in June 2010 indicating its preference for the Pseudo CBA approach as they believed it balanced the need for a transparent and consistent process without adding undue complexity to the process. A second consultation was carried out in October 2010 which focused on the changes

that would be required to the text of the SQSS in order to implement the GSR009 proposals.

3.13. The Review Group's consultation[12] found that there was general industry support for the dual criteria approach, and the specifics of the proposed demand security criteria. However industry views were more mixed regarding which of the approaches for the economic criteria would be most appropriate.

3.14. A number of respondents raised concerns that the Review Group's preferred option for the economy criterion (the Pseudo CBA approach) sacrificed accuracy of results for the sake of simplicity. The Review Group acknowledges that a full CBA approach would theoretically give more accurate results but they believed that in practice the pseudo CBA approach best balanced the need for accuracy, consistency and transparency.

[12] A more comprehensive summary of responses can be found in the Amendment Report

4. Impacts of GSR009

Chapter summary

In this chapter we firstly summarise the overall impact of the GSR009 proposal. Then we consider in more detail the proposal and examine specifically the impact of the proposals on consumers, competition, sustainable development and other impacts.

Question box

Question 1: Do respondents consider that we have identified and, where appropriate, quantified the impacts of the GSR009 proposal?

Question 2: Do respondents consider that there are any additional impacts that we have not fully considered?

Question 3: Do respondents wish to present any additional analysis that they consider would be relevant to our assessment of the GSR009 proposal?

4.1. In considering the impacts of GSR009, we have taken into consideration the direct impact of the proposal on the planning and operation of the transmission system and any impact the proposal might have on consumers, competition and sustainable development. These are discussed in turn below.

Direct impacts

4.2. Our analysis shows that the GSR009 proposal would result in the following differences in the levels of required transmission capacity in comparison with applying the current deterministic rules in the SQSS:

- The *Demand Security Criterion*, when becoming the determining factor of required capacity (ie if it is the more onerous of the dual criteria), could result in a level of required transmission capacity higher or lower than the current rules for certain parts of the transmission network.
- The *Economy Criterion* would result in a required transmission capacity level closer to the optimal level (ie the level that would be determined by a full CBA) than the current deterministic rules, which could be either higher or lower than the result from applying the current rules. In general, the proposed approach is more likely to result in lower total transmission costs (ie including transmission investment and constraints costs) than current rules.

4.3. As the proposal would essentially replace one set of deterministic parameters with another more transparent set, there are no direct implementation costs associated with the proposal.

4.4. In assessing the proposal we recognise that, in reality, investment decisions are based on more that the application of the SQSS rules alone to one isolated boundary for a particular background. Large investments are normally subject to more detailed cost benefit analysis taking into account system-wide requirements such as interactive boundaries, multiple-year conditions with potential variation in capacity requirement, and costs of specific elements under a particular set of circumstances and level of uncertainty therein. There will also be wider consideration of other factors such as impact on overall security of supply, and facilitation for future development of various types of generation. Therefore the actual investment decision could depart from the results from applying either the rules proposed by GSR009, or the current rules today. But overall, compared to the current deterministic criteria, GSR009 would be expected to provide a better overall view of what the optimum investment is likely to be and give a first-pass deterministic assessment likely to be closer to the optimum answer. This in turn could have some directly related benefits as discussed in more detail in later sections of this chapter.

The Review Group's Analysis

4.5. The Review Group's analysis, conducted in 2009/10, is based on a background scenario including a set of assumptions about generation and demand developed in 2008 (named GG5c in its June 2010 consultation). Their analysis focused on six key boundaries[13]:

- B4 – which lies between the transmission areas owned by SHETL and SPT
- B6 – which lies between the transmission areas owned by SPT and NGET (often referred to as the Cheviot boundary)
- B7a – upper north to north
- B8 – north to midlands
- B9 – midlands to south
- B15 – Thames Estuary

4.6. The background scenarios used by the transmission licensees are regularly updated to reflect latest developments and thinking. In order to inform our assessment of the GSR009 proposal we asked NGET to provide us with analysis showing what results might arise from applying the criteria proposed in GSR009 using a more up to date background scenario. To this end NGET provided analysis based on their RIIO Gone Green scenario (developed in November 2010).

[13] A map showing the boundaries can be found in Appendix 4

4.7. This undated analysis was also extended to cover each of the 17 commonly used boundaries.

Demand Security Criterion

4.8. The *Demand Security Criterion* is designed to ensure that the system is able to meet demand on those occasions that intermittent generation is unavailable. The criterion is based on a number of assumptions about the availability of different types of generation.

4.9. There are three main assumptions underpinning this criterion:

- By setting a scaling factor of zero for wind it is effectively assumed that in relation to transmission security wind and other intermittent generation does not provide any reliable level of demand security.

- By setting a scaling factor of zero for interconnectors it is effectively assumed that in relation to transmission security they do not provide a reliable level of demand security.

- By setting a scaling factor of one for conventional generation it is effectively assumed that in relation to transmission security all other types of generation provide similar levels of demand security.

4.10. The *Demand Security Criterion*, when becoming the determining factor of required capacity (ie if it is the more onerous of the dual criteria), could result in a level of required transmission capacity higher or lower than the current rules. This is because the required transmission capacity needed to meet demand on the importing side of a boundary depends on the proportion of demand that is met by local generation on the same side of the boundary. This in turn is affected by the relative spread of intermittent and other types of generation on both sides of the boundary. More specifically:

- For a boundary where intermittent generation is mostly located on the exporting side and some conventional generation is located on the importing side, then the demand security criterion would reduce the output from all the intermittent generation to zero, and allow for greater output from the conventional generation. This means that a greater proportion of the demand on the importing side would be met by local generation, which leads to lower requirement of transmission capacity to draw in power from the exporting side to meet the remaining demand. In this situation, contribution from local conventional generation is not unduly suppressed by over expectation of intermittent generation elsewhere, which would lead to the effect of reducing the required transmission capacity on that boundary.

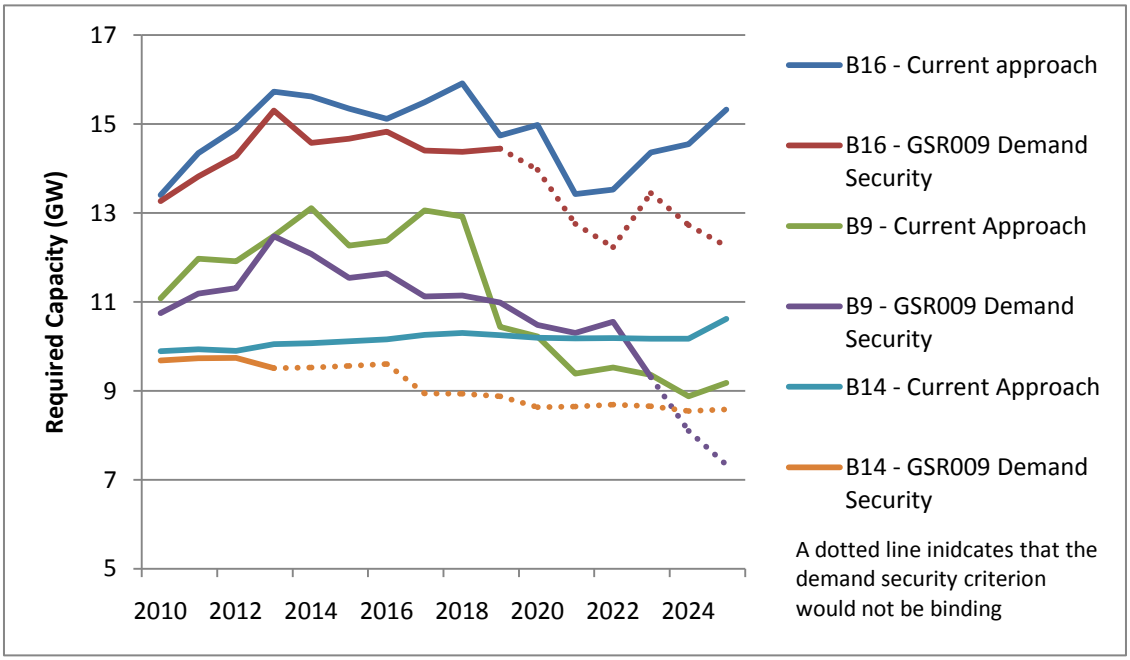
- For a boundary where a material amount of intermittent generation but little conventional generation is located on the importing side, then the demand security criterion would reduce the output from all the intermittent generation to zero, and greater output from the conventional generation on the exporting side. This means that a smaller proportion of the demand on the importing side would be met by local generation, which leads to higher requirement of transmission capacity to draw in power from the exporting side to meet the remaining demand. In this situation, the GSR009 proposal would remove over reliance on intermittent generation output, which would lead to the effect of increasing the required transmission capacity on that boundary.

4.11. The Review Group's analysis indicated that the *Demand Security Criterion* would not be binding based on the background scenario used for any of the six boundaries looked at in detail. The most recent analysis from NGET shows that the demand security criterion is likely to be binding (ie the criterion which sets the more onerous required capacity than the economic criterion) in three cases:

- The Midlands – South boundary (B9).
- London boundary (B14).
- The North East - Yorkshire boundary (B16).

4.12. Figure 4.1 compares the results of NGET's recent analysis for B9 and B16 specifically comparing the difference in required capacity under the current approach and under the GSR009 proposal.

Figure 4.1: Required Capacity – GSR009 Demand Security Criterion compared with current approach



4.13. For B14 and B16 the analysis indicates that the capacity requirement identified under GSR009 (for the period that the demand security criterion is binding) would be lower than under the existing arrangements. This is consistent with the first effect described in paragraph 4.10.

4.14. In the case of B9 the analysis shows that both effects would be seen over time, with the required capacity identified by the Demand Security Criteria being lower in the initial years and then higher from 2019 onwards.

4.15. We note that this result is contingent on the set of assumptions used in the analysis and therefore could change over time. We also note that based on the background conditions used in the analysis the impact changes over time.

4.16. We also note as outlined elsewhere in this document, that actual investment decision is not solely driven by the results of applying the deterministic criteria, but takes into account other important factors such as practicality and the magnitude of the shortfall. Therefore the isolated comparison above may not necessarily represent the actual difference in investment plan on the transmission network. It is nevertheless helpful to have some deterministic assessment that is closer to a more appropriate balance between the reliance on local generation and on transmission capacity.

Economy Criterion

4.17. The *Economy Criterion* is based on a set of deterministic values which are designed to give capacity requirements which match the 'optimal' position more closely than the current approach. The Review Group estimated the optimal position using an indicative (or incremental) CBA.

4.18. When considering the impact of any change in boundary requirements there are two factors to consider – investment costs and constraint costs. The criterion set out in GSR009 are intended to give an overall more efficient balance between these costs than the existing approach.

Assumptions underpinning the analysis

4.19. In determining this optimal position the Review Group made a number of assumptions. These are discussed in more detail in Appendix 3 but can be summarised as:

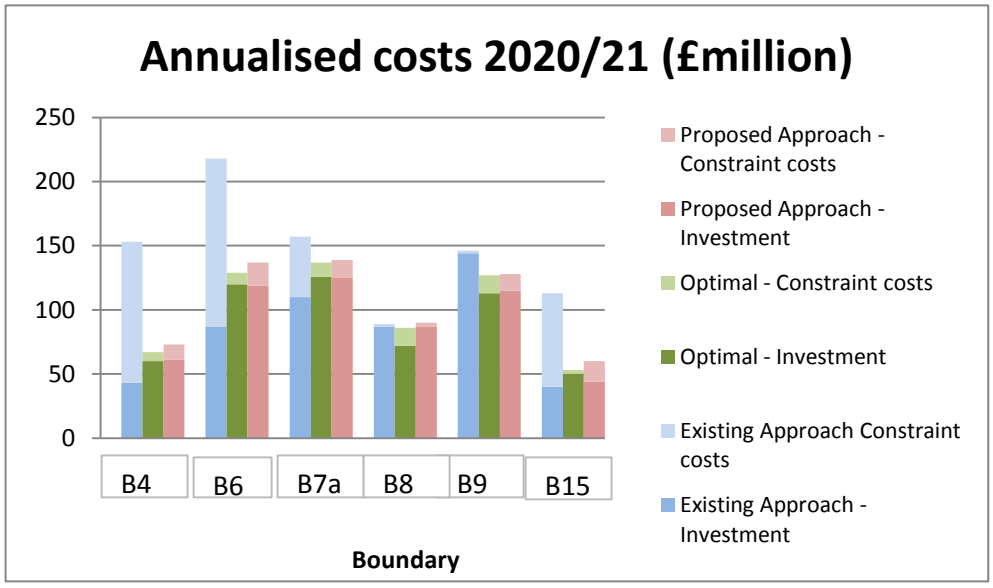
- The price of constraints. If transmission capacity is lower than the flow resulting from unconstrained generation then there will be costs incurred for energy that is not able to be transported. The Review Group assumed a cost of £90 per MWh in the indicative CBA. This was based on its analysis of the generation merit order data.
- The cost of transmission capacity. The CBA makes an assumption that this equates to an annuitised cost of £100/MW.km. In setting the value of this assumption they looked at the cost of a variety of different projects (a summary is provided in Appendix 3). The Review Group also undertook sensitivity analysis for a range of capacity costs from £50/MW.km to £200/MW.km.

Comparison with existing approach

4.20. Figure 4.2 shows the potential impact of the *Economy Criterion* element of GSR009 by an example of comparing the annualised investment costs and constraint costs that could result from building transmission capacity according to three approaches for the selection of boundaries looked at in depth by the Review Group:

- the existing methodology
- based on a generic CBA
- the GSR009 economy criterion.

Figure 4.2: Annualised investment and constraint costs under different approaches to boundary analysis (£million, 2020/21)[14]



4.21. Figure 4.2 shows that for some of the boundaries (B4, B6, B7a, B15), if transmission capacity were to be built strictly according to the current deterministic approach, there could be high constraint costs, which the 'optimal' approach based on full CBA would seek to lower by building higher transmission capacity. The Economy Criterion proposed in GSR009 would bring about results much closer to this 'optimal' balance between constraints and transmission investment costs. On other boundaries (B8, B9), both the GSR009 economic criterion and the full CBA would result in lower transmission capacity while still resulting in lower total costs.

4.22. As noted elsewhere in our assessment, such differences in investment decision would not be typically expected in reality. This is because the actual investment decision would be subject to more careful examination and assessment. However this example illustrates clearly that the GSR009 economic criterion is likely to result in a first-pass assessment matching the optimal results more closely that the current deterministic rules.

Stability of the results

4.23. As mentioned above, NGET have recently updated much of the boundary analysis to reflect an updated set of background conditions. This provides a useful basis for us to test the stability of the results, ie whether under a different set of background conditions GSR009 would still identify a capacity requirement closer to the optimum than would be indentified under the existing approach.

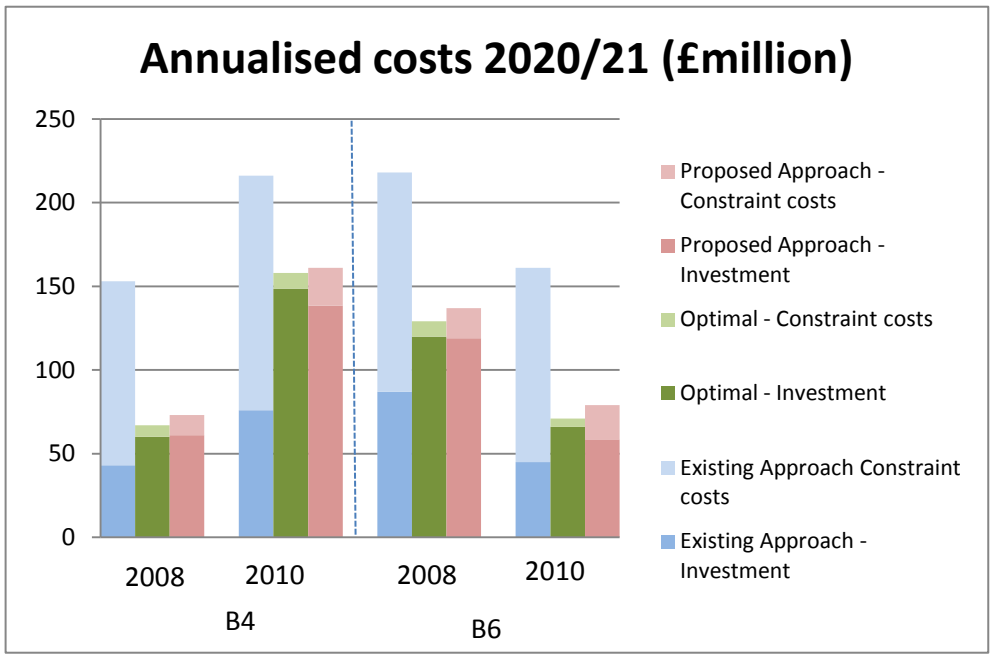
[14] Based on data from the June 2010 consultation document

4.24. Figure 4.3 shows for two boundaries[15], on a similar basis to figure 4.2, how the analysis varies between the:

- 2008 background scenario (GG5c) underpinning the Review Group's analysis.
- 2010 background scenario (RIIO Nov 2010) underpinning NGET's updated analysis.

4.25. We note that the scenario backgrounds have evolved between these 2008 and 2010 scenarios. For the year 2020, the 2010 scenario has 2.3GW less capacity than the 2008 scenario however this includes a shift in the balance between Scottish capacity (which is up 1.7GW in the 2010 scenario) and capacity in England and Wales (which is down 4GW in the 2010 scenario). This suggests that the 2010 scenario would require higher required capabilities for northern boundaries.

Figure 4.3: Annualised investment and constraint costs under different background conditions (2020/21)



4.26. Figure 4.3 indicates that the parameters set out in GSR009, would generate results closer to the optimal than the existing approach for both background scenarios considered. This suggests that the GSR009 parameters are not unduly

[15] These are the two boundaries for which the updated NGET analysis provides the full information needed for this comparison – ie re-estimation of the optimal approach.

sensitive to changes in the background conditions. We also note that under the GSR009 proposal the scaling factors would be reviewed at least every five years. This periodic review is intended to ensure that the deterministic assumptions in the SQSS continue to produce results which reasonably closely match the optimum even if the background conditions change.

Impact on consumers

4.27. In this section we summarise the overall impact on consumers of the GSR009 proposal. As discussed above the GSR009 proposal is not expected significantly to alter the investment decision as such decisions would be subject to more careful examination and assessment. However, the proposal would be expected to result in a first-pass assessment matching the optimal results more closely that the current deterministic rules. This is likely to result in some secondary impacts on consumers.

4.28. By providing a better 'first estimate' of the optimal capacity requirements GSR009 could bring better efficiency in transmission licensees technical design and planning processes. As GSR009 provides a better starting point before more detailed assessment is carried out this could simplify and streamline the process avoiding some unnecessary or wasted effort.

4.29. The *Demand Security Criterion*, when binding, could result in more secure supply in areas which would otherwise be more reliant on intermittent generation.

4.30. There could also be other follow-on benefits, resulting from the impact on competition and sustainable development. These are discussed in following sections.

Impact on competition

4.31. As with the impact on consumers, any impact on competition is somewhat secondary in nature. The benefit comes from the improved process of identifying required capacity rather than any particular change in the level of that capacity.

4.32. Specifically, GSR009 is likely to give improved transparency and certainty to generators. As GSR009 would mean the required capacity initially identified under the deterministic SQSS rules is closer to the final outcome, generators would benefit from a simpler and more efficient way (than full CBA) of assessing likely investment.

4.33. As GSR009 would improve the information available to generators (with the deterministic rules being clearly stated in the SQSS) the proposal could potentially help reduce any existing barriers to entry that might exist under the current approach. In addition the proposal could facilitate more efficient decision making by generators etc.

4.34. The GSR009 proposal could also facilitate more efficient decision making by other policy stakeholders (such as planning agencies), which in turn could lead to

more timely resolution of planning barriers for transmission investment which would also better facilitate competition in generation.

Impact on sustainable development

4.35. The GSR009 proposal is intended to ensure that the transmission system is planned in such a way that is appropriate for the types of generation connecting to it. Intermittent generation is typically low carbon in nature and often situated far from centres of demand. Although the GSR009 proposal would not significantly alter the level of required capacity needed for renewable generation it would make the process of identifying the required capacity simpler and more transparent.

4.36. The simplification of this process of identifying this required capacity as discussed above is likely to facilitate the future development of generation. Much of this new generation is likely to be renewable and therefore its timely development would help achieve sustainable development targets.

Other impacts

Impact on health and safety

4.37. We are not aware of any health and safety implications related to the GSR009 proposals.

Risks and unintended consequences

4.38. We consider that any risks or unintended consequences resulting from the GSR009 proposals have been identified elsewhere in this impact assessment. However we would welcome any parties views on other potential risks and unintended consequences associated with the GSR009 proposals.

Conclusions

4.39. Our analysis suggests that as actual investment decisions would be subject to detailed assessment the GSR009 proposals would not significantly alter the investment decisions made but rather the implications of the proposals would result from the improved process involved.

4.40. As GSR009 essentially updates the deterministic assumptions in the SQSS rather than introduces a new process, there are no implementation costs associated with the proposal. Our assessment indicates that the GSR009 proposal would have the following indirect impacts:

- It would ensure that the SQSS provides a better starting point for considering more detailed and relevant technical solutions and compare

their relative merits. This would lead to better efficiency in the transmission licensees planning process.

- It would provide greater transparency for stakeholders. Under the GSR009 proposal the SQSS would offer a better overview of the likely level of transmission capacity at key locations.

- It would provide a clearer starting point for the planning of new transmission, and in particular planning applications.

5. Next steps

Chapter summary

In this chapter we outline the next steps in our decision making process for the GSR009 proposal.

Question box
There are no questions in this chapter.

5.1. The publication of this impact assessment marks the start of a six week consultation period. Appendix 1 set out details of how to respond to this consultation, including contact details for any queries. It also gives a complete list of the questions which we are seeking respondents' views on in this document. Respondents' views are also welcomed on any other aspect of this document.

5.2. After the consultation period we will consider the responses received as part of our decision making process. We intend to make a decision in autumn 2011.

Appendices

Index

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 23 September and should be sent to:

Sheona Mackenzie
Electricity Transmission
Cornerstone
107 West Regent Street
Glasgow
G2 2BA
0141 331 6019
sheona.mackenzie@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. Having considered the responses to this consultation, we will consider the responses received as part of our decision making process. Any questions on this document should, in the first instance, be directed to Sheona Mackenzie (contact details provided above).

CHAPTER: One

There are no questions in this chapter.

CHAPTER: Two

There are no questions in this chapter.

CHAPTER: Three

Question1: Do respondents support the proposed dual criteria approach?

CHAPTER: Four

Question 1: Do respondents consider that we have identified, and where appropriate, quantified the impacts of the GSR009 proposal?

Question 2: Do respondents consider that there are any additional impacts that we have not fully considered?

Question 3: Do respondents wish to present any additional analysis that they consider would be relevant to our assessment of the GSR009 proposal?

CHAPTER: Five

There are no questions in this chapter.

Appendix 2 – Legal and Assessment Framework

1.1. This Appendix summarises the legal and assessment framework for amendments to the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).

Procedure for proposing amendments to the NETS SQSS

1.2. The NETS SQSS sets out a coordinated set of criteria and methodologies that transmission licensees (both onshore and offshore) shall use in the planning and operation of the National Electricity Transmission System. These will determine the need for services provided to the transmission licensees. The criterion presented in the NETS SQSS represents the minimum requirements for the planning and operation of the National Electricity Transmission System.

1.3. The 'GB SQSS Governance'[16] (the Governance Arrangements) set out the arrangements for the establishment and composition of the GB SQSS Review Group (the 'Review Group'). The Review Group performs its functions to ensure efficient discharge by each of the transmission licensees of the obligations imposed upon it under the Electricity Act and its associated licences, specifically focusing on the "Review Group Principles". The Review Group Principles are as follows:

1. development, maintenance and operation of an efficient, economical and coordinated system of electricity transmission;
2. ensure an appropriate level of security and quality of supply and safe operation of the Transmission System; and
3. facilitating effective competition in the generation and supply of electricity.

1.4. The procedure for proposing amendments to the NETS SQSS is also contained in the Governance Arrangements. Under section 4 of the Governance Arrangements, amendments to the NETS SQSS may be proposed by a transmission licensee, the Authority or a relevant interested person.

1.5. Proposed amendments to the NETS SQSS are made by a Review Request. A Review Request should address an issue/defect and must better facilitate the achievement of the applicable Review Group Principles than the existing NETS SQSS baseline.

[16] The NETS SQSS replaced the earlier GB SQSS. The governance arrangements were carried over from the GB SQSS to the NETS SQSS and can be viewed on the codes section of National Grid's website. The governance arrangements can be viewed at the following link: http://www.nationalgrid.com/NR/rdonlyres/00679067-2077-42A0-B975-FA214D179FF4/17781/governance.pdf

1.6. Once a NETS SQSS Review Request has been raised, it is considered by the Review Group. A Review Request may be referred by the Review Group for evaluation and assessment by a Working Group. Following completion of its evaluation, the Working Group commissions an assessment from each of the transmission licensees of the likely effect of the Review Request on, amongst other matters, that licensee's transmission system.

1.7. Following completion of this assessment, the Working Group prepares a report (the Working Group Report) as to whether the Review Request better facilitate achievement of the Review Group Principles. The Working Group Report is then considered by the Review Group and a Consultation Document is prepared and consulted upon, which contains, among other matters, the recommendations of the Review Group as to whether the proposed amendment(s) should be made.

1.8. If the transmission licensees agree that an amendment to the NETS SQSS is required, the Review Group prepares an Amendment Report which it sends to the Authority. If not all transmission licensees agree that an amendment to the NETS SQSS is needed, each licensee's recommendation is incorporated into the Amendment Report.

Legal Framework for Decision

1.9. After receipt of the Amendment Report, the Authority makes a decision as to whether or not to direct implementation of the proposed amendment to the SQSS or any alternative(s). It makes its decision in the context of a prescribed legal and assessment framework as set out below.

Impact assessment

1.10. Section 5A of the Utilities Act 2000 (Duty of the Authority to carry out an impact assessment) imposes a duty on the Authority to undertake an impact assessment in certain cases.

1.11. Section 5A of the Utilities Act 200 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 1989 or the Gas Act 1986; 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.

1.12. 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. An impact assessment must include an assessment of the likely effects on the environment of a proposal.

1.13. 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 persons engaged in the shipping, transportation or supply of gas conveyed through pipes or in the generation, transmission, distribution or supply of electricity;
c) a significant impact upon persons engaged in commercial activities connected with the shipping, transportation or supply of gas conveyed through pipes or with the generation, transmission, distribution or supply of electricity;
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.

Decision-making process

1.14. With regard to a proposed amendment, the Authority will assess the proposed amendment against the applicable NETS SQSS Relevant Principles set out above.

1.15. The Authority will determine which of the options available to the Authority is best calculated to further the principal objective to protect the interests of consumers (including existing and future consumers) in relation to electricity conveyed by transmission systems, wherever appropriate by promoting effective competition. The Authority must also consider whether the proposal is consistent with its wider statutory duties, including those arising under European law.

1.16. Neither the above summary nor the summary in section 2 of this document is intended to be a substitute for referring to the relevant legal instrument or the NETS SQSS Governance Arrangements.

Appendix 3 – Cost benefit analysis Assumptions

1.1 In this appendix we summarise the assumptions made by the Review Group in setting the deterministic values which are designed to give capacity requirements which match the optimal position. These assumptions are discussed in more detail in Appendix 4 of the Review Group's June consultation[17], and in Appendix 5 of the Amendment Report[18].

1.2 The economic criterion is based on calibrating a set of deterministic assumptions to closely match the outcome of an indicative cost benefit analysis. The Cost Benefit Analysis (CBA) is not specific to a particular investment but rather designed to be indicative of the overall relationship between investment and constraint costs. As the deterministic assumptions (ie 70% for wind) are linked to the specific assumptions made in the CBA we need to consider the appropriateness of these underlying assumptions.

The cost of transmission capacity

1.3 One of the key assumptions made in the CBA relates to the price of transmission capacity. The CBA makes an assumption that this equates to an annual cost of £100/MW.km. Table A3.1 shows comparators of this assumptions against reinforcement costs[19]:

Table A3.1 : Cost of Transmission Capacity[20]

		Annual £/MW.km	*Variance from GSR009 assumption*
'Ideal' Reinforcement – result of NGET consultation on new routes		£58/MW.km	*-£42/MW.km*
Average Price from TPCR4	NGET	£41/MW.km	*-£59/MWkm*
	SPT	£58/MW.km	*-£42/MW.km*

[17] http://www.nationalgrid.com/NR/rdonlyres/E22B1547-D4CC-4F88-AEEF-C76305718C25/41720/GSR009SQSSConsultation.pdf
[18] http://www.nationalgrid.com/NR/rdonlyres/BC265EEB-7415-4C58-8C56-0CF580581B8C/47751/GSR009ofgemreportv1_2_.pdf
[19] The figures in Table A3.1 come from Appendix 5 of the Amendment Report.

	SHETL	£32/MW.km	*-£68/MW.km*
Specific Projects (2009 ENSG report)	Scotland to England 'incremental'	£240/MW.km	*+£140/MW.km*
	Scotland – England HVDC Links	£100/MW.km	*No variance*
	Beauly-Denny	£200/MW.km	*+£100/MW.km*
	North Wales	£100.MW/km	*No variance*

1.4 The Review Group concluded that their central assumption of £100/MW.km was consistent with the comparisons above.

1.5 The Review Group also carried out sensitivities based on £50/MW.km and £200/MW.km a range which encompasses most of the above estimates.

The price of constraints

1.6 The price of constraints is another key assumption made in the CBA. The constraint costs assumed by the Review Group can be seen from the merit order assumptions in Table A3.2.

Table A3.2: Merit Order[21]

Fuel	Rank	£/MWh	
		Bid	Offer
Nuclear	1	-100	n/a
Wind/Wave	2	-50	n/a
Base Gas	3	10	40
Base Coal	4	15	60
France	5	20	80

[21] This table is simply a replication of Figure 14 from Appendix 5 of the Amendment Report.

Water	6	23	90
Marginal Gas	7	25	100
Marginal Coal	8	30	120
Pumped storage	9	75	300
Britned/Imera	10	90	360
Oil	11	100	400
Aux GT/Main GT	12	150	500

1.7 The Review Group based their £90/MWh assumption on a typical constraint action where the base gas plant is constrained off (at a bid price of £10/MWh) and replaced with a Marginal gas plant (at an offer price of £100/MWh).

Losses

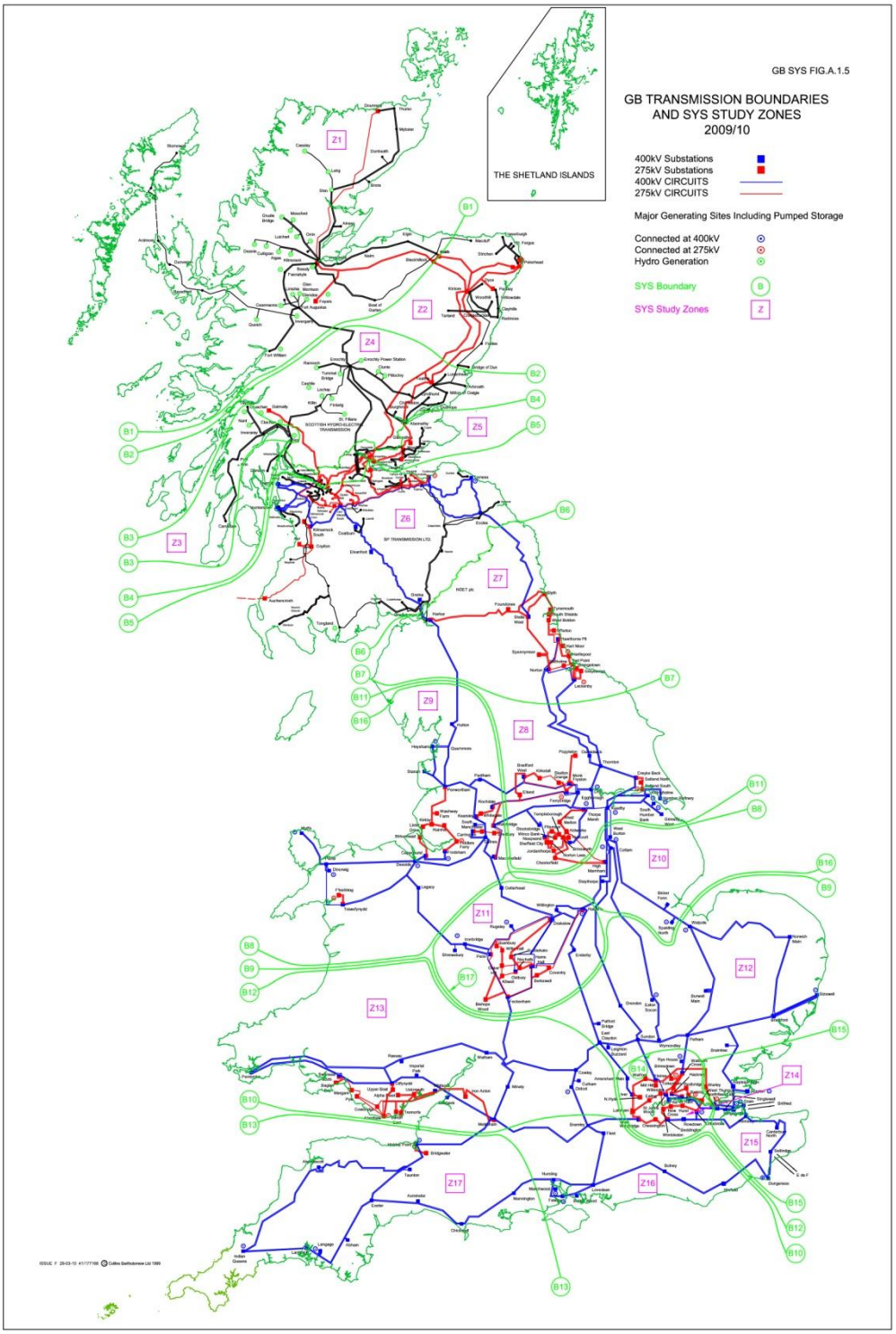
1.8 Traditionally a transmission cost benefit analysis will compare the cost of transmission reinforcements with the cost of constrains plus the cost of losses saved.

1.9 The Review Group considered that as recent analysis of losses benefits (relating to anticipatory schemes) produced very variable results it was prudent to assume a losses benefit of zero.

Outage Costs

1.10 Similarly given the variability in outage costs relating to the construction of reinforcements are highly dependent on the nature of the reinforcement (ie a new-build or reconducting existing circuits for a higher rating), the Review Group considered it prudent to assume zero outage costs.

Appendix 4 – GB Transmission Boundaries



Appendix 5 - Glossary

A

The Authority (Ofgem)

Ofgem is the Office of 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 Great Britain.

B

Boundary Allowance

An allowance to be added to transfers arising from the Economy Planned Transfer Condition to take into account year round variations in generation and demand. This term does not currently exist in the SQSS but would be introduced if GSR009 were approved. The details would be contained in Appendix F of the NETS SESS.

D

Demand Security Criterion

A requirement that there is sufficient transmission system capacity that peak demand can be met without intermittent generation. There is not currently such a requirement but it would be introduced if GSR009 were approved.

E

Economy Criterion

A requirement that there is sufficient transmission system capacity to accommodate all types of generation in order to meet varying levels of demand efficiently.

Economy Planned Transfer Condition

This arises from scaling the registered capacity of each directly connected power station and embedded power station according to the type of generation such that the total of the scaled capacities is equal to the ACS peak demand. This term does not currently exist in the SQSS but would be introduced if GSR009 were approved. The details of the scaling factor would be contained in Appendix E of the NETS SQSS

G

Generator

A person who generates electricity under licence or exemption under the Electricity Act 1989.

I

Interconnection Allowance

An allowance in MW to be added in whole or in part to transfers arising out of the planned transfer condition to take some account of non-average conditions. The interconnection allowance is set out in more detail in Appendix D of the NETS SQSS. The GSR009 proposals if approved would amend the application of the interconnection allowance.

N

NETS

The national electricity transmission system comprises the onshore transmission system and the offshore transmission systems.

National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS)

The document prepared pursuant to conditions C17, D3 and E16 of the Transmission Licences, setting out the criteria and methodologies which transmission licensees shall use in the planning and operation of the national electricity transmission system.

O

Ofgem

See definition of the Authority.

Offshore electricity transmission networks

Offshore electricity transmission networks will be required to transmit electricity from offshore renewable generators to customers via the onshore transmission and distribution networks.

P

Planned Transfer Condition

A method of scaling of generation, to ensure the total of scaled capacities is equal to peak demand (less imports from external systems). Full details of this condition can

be found in Appendix C of the NETS SQSS. The GSR009 proposals would change this aspect of the NETS SQSS.

R

Review Group

In the context of this paper the Review Group refers to the SQSS Review Group

S

SQSS

See definition of the NETS SQSS

Secured event

A contingency which would be considered for the purposes of assessing system security and which must not result in the remaining national electricity transmission system being in breach of the security criteria.

Security Planned Transfer Condition

A condition designed to ensure that there is sufficient transmission system capacity that peak demand can be met without intermittent generation, by applying availability factors to different types of generation. This forms part of the GSR009 proposals and would be based on the existing Planned Transfer Condition but with the addition of scaling factors.

Appendix 6 - 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:

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