

Transmission Access Review – Enhanced Transmission Investment Incentives: Final Proposals

Document type: Decision and consultation

Ref: 04/10

Date of publication: 19 January 2010

Deadline for response: 16 February 2010

Target audience: Electricity transmission licensees, conventional and renewable generators, renewable interest groups, distribution network operators, suppliers and customers

Overview:

Ofgem is committed to playing a full role in helping to reduce carbon emissions to tackle climate change. Following completion of the joint Ofgem/Department for Energy and Climate Change (DECC) Transmission Access Review (TAR), we have taken forward work to develop funding arrangements for investments by the electricity transmission owners (TOs) which anticipate future demand from generators.

This document sets out our Final Proposals to facilitate additional investment within the current transmission price control period (TPCR4). It confirms the funding framework we intend to adopt to fund costs up to the end of 2011/12 and discusses how we will phase our decisions on funding the investments proposed by the TOs, on which additional expenditure of around £1bn is currently planned over this period. We have assessed the initial tranche of investments and intend to allow £78m of pre-construction funding and £241m of construction funding on projects planned to commence construction before 1 April 2011. We anticipate the need to provide further funding for additional investment projects.

This document also incorporates a preliminary consultation, prior to formal statutory consultation under section 11 of the Electricity Act 1989, on the draft legal text of the licence changes to give effect to our Final Proposals. It also discusses further work.

Contact name and details:

Cheryl Mundie, Senior Manager - Electricity Transmission Policy
(cheryl.mundie@ofgem.gov.uk, 0141 331 6003)

David Hunt, Senior Manager - Electricity Transmission Policy
(david.hunt@ofgem.gov.uk, 020 7901 7429)

Team: Electricity Transmission Policy and Compliance

Context

Energy plays a critical role in the continued economic prosperity of Great Britain. Increasing the contribution that renewable generation makes to meeting electricity demand is a critical part of Government's energy policy goals.

In the 2007 Energy White Paper, the Government announced a joint review of transmission access by Ofgem and the Department of Trade and Industry (DTI) (now the Department of Energy and Climate Change (DECC)). The Transmission Access Review (TAR) focused on the framework for the delivery of new electricity transmission infrastructure, the management and operation of existing grid capacity, and the operation of the grid. The need for the joint review was driven by the delays that a large volume of renewable and conventional generation face when seeking connection to the transmission system and the potential effects this will have, if not addressed, on achieving the Government's climate change targets and maintaining security of supply.

Following publication of the TAR Final Report in June 2008, a range of measures have been taken forward with the aim of improving access to the transmission network. These measures include actions to address short term impediments to connecting new generation to the grid and actions designed to improve access to the grid over the longer term. In addition, the Transmission Owners (TOs) have identified a considerable amount of further system reinforcement in the run up to 2020, to facilitate delivery of the Government's climate change target. We have been working with the TOs to establish funding arrangements to facilitate this programme of investment, which work we refer to as "TO Incentives".

The focus of our TO Incentives work is on transmission investment projects which could be commenced within the current transmission price control period (TPCR4). We have taken into account relevant interactions with related work on transmission investment, including our review of the regulatory framework (the RPI-X@20 project) and the setting of the next transmission price control. Our Initial Proposals, published in November 2009 set out our view that at this stage, taking into account the current condition of financial markets, a simple pragmatic approach to funding is the best way to ensure that critical investment is not delayed. This document sets out our Final Proposals taking into account views of respondents and the TOs and reflects our further assessment of the TOs investment plans taking into account the conclusions of the work carried out by our consultants.

Associated Documents

Documents relating to Transmission Price Control Review 4 (TPCR4):
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR4/ConsultationDecisionsResponses/Pages/Consultationdocumentdecisionsresponses.aspx>

Meeting the Energy Challenge - A White Paper on Energy. May 2007.
<http://www.berr.gov.uk/files/file39387.pdf>

RPI-X@20 project publications. March 2008 to date.
<http://www.ofgem.gov.uk/Networks/rpix20/Pages/RPIX20.aspx>

Transmission Access Review related documents are listed here:
<http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Pages/Traccrw.aspx>

TO Incentives documents:

- Transmission Access Review – Initial Consultation on Enhanced Transmission Investment Incentives. December 2008
- Transmission Access Review - Enhanced Investment Incentives Open Letter: Consultation on Short Term Measures. February 2009
- Transmission Owner (TO) Incentives Licence Modification. March 2009
- Transmission Access Review – Enhanced Transmission Investment Incentives: Update and Consultation on Further Measures. September 2009
- Transmission Access Review – Enhanced Transmission Investment Incentives: Initial Proposals. November 2009
- TO Incentives: Stakeholder Workshop. December 2009
- Transmission Access Review – Enhanced Transmission Investment Incentives: Final Proposals, Supplementary Appendix. January 2010
- Assessment of overall robustness of the transmission investment proposed for additional funding by the three GB Electricity Transmission Owners, KEMA Consulting. January 2010
- Transmission Investment Project Appraisal, PB Power. January 2010

Other Transmission Access Review documents:

- A Call for Evidence for a Review of Transmission Access. August 2007.
- Short Term Access Governance Report – Report to the Secretary of State. October 2007.
- Transmission Access Review – Interim Report to the Secretary of State. January 2008.
- Transmission Access Review – Analytical Discussion Document. April 2008.
- Transmission Access Review – Final Report to the Secretary of State. June 2008.

Documents relating to Transmission Price Control Review 5 (TPCR5):
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR5/Pages/TPCR5.aspx>

Table of Contents

Summary	1
1. Introduction	3
Enhanced transmission investment incentives	3
Process to date.....	4
December 2008 consultation	4
Short term measures	5
September consultation.....	5
Initial Proposals consultation	5
Stakeholder workshop	6
Interaction with RPI-X@20 and TPCR5	6
Scope and overview of Final Proposals in this document	7
Licensing issues.....	8
Structure of this document.....	8
2. Developments following our Initial Proposals consultation	10
Introduction	10
Funding framework	10
Consultation responses.....	12
Assessment of projects nominated for funding consideration	13
<i>PB's review of efficiency of design, timing and costing of individual projects</i>	18
Key results of detailed assessment of projects under consideration for funding at this stage	19
Pre-construction costs	20
Construction costs	20
3. Final Proposals	23
Funding pre-construction costs	23
Funding construction costs	25
Funding mechanism	29
Cost of capital allowance	30
Capex efficiency sharing factor	30
Depreciation	31
4. Preliminary consultation on legal text	33
Proposed licence changes.....	33
5. Further work and way forward	35
Potential for further work	35
Handling of new information.....	35
Way forward	36
Responding to this document.....	36
Appendices	38
Appendix 1 - Consultation response and questions	39
Appendix 2 – Summary of responses to Initial Proposals consultation	41
Appendix 3 – Update on projects nominated for funding consideration	47
Appendix 4 – More Detail on Consultants' Assessment of Projects ..	50
Appendix 5 – More Information on RPI-X@20 Project	55
Introduction.....	55

The rationale underpinning RPI-X@20	55
Guiding principles for RPI-X@20	55
Progress of RPI-X@20	56
Appendix 6 – The Authority’s Powers and Duties	57
Appendix 7 - Glossary.....	59
Appendix 8 - Feedback Questionnaire	65

Summary

Background

Following publication of the Final Report from the Transmission Access Review (TAR) in June 2008, Ofgem and industry have been working on a range of measures to improve access to the transmission network. An important element of these measures is our work to fund future investments that are likely to be needed to facilitate the achievement of the Government's 2020 targets. Our work on transmission investment consists of two major workstrands:

1. The 2020 Transmission System Study, which was produced by the Transmission Operators (TOs) and published under the auspices of the Electricity Networks Strategy Group (the "ENSG study"); and
2. Our work on enhanced transmission investment incentives ("**TO incentives**") which provide an appropriate funding framework for anticipatory investment.

Following the completion of the ENSG study, the TOs have requested funding for a substantial programme of investment, including links to the Scottish Islands, with a combined cost of some £5 billion (including both pre-construction and construction activities). The TOs consider this programme is required to accommodate new generation connections in the period up to 2020. This is in addition to the £4 billion of investment in new capacity and asset replacement allowed in the current electricity transmission price control (TPCR4), which runs from 2007 to 2012. For a significant proportion of the investment put forward by the TOs, construction is currently proposed to commence within TPCR4.

Our work on TO incentives aims to develop appropriate funding arrangements for the projects identified by the TOs, as enhancements to the arrangements under TPCR4. A key aim is to ensure that funding arrangements do not create a barrier to the investment needed to accommodate future generation, whilst ensuring adequate protection to consumers where that investment is undertaken on an anticipatory basis. We have also taken account of the prevailing investment climate and interactions with future funding arrangements in reaching our view that, at this stage, a simple pragmatic approach to funding is the best way to ensure that critical investment is not delayed. We have scrutinised the TOs' plans to identify projects eligible for funding at this stage, taking into account our assessment against criteria including needs case and readiness of the TOs to take forward the planned work.

Progress to date

We published our first consultation document on TO incentives in December 2008. In April 2009 we provided a total of £12.5m of funding for initial pre-construction work in 2009/10 on specific projects which were not already funded during TPCR4. By providing this funding we kept options open, ensuring that critical projects would not be delayed. In September 2009 we consulted on the scope and timing of TO incentives work. Our Initial Proposals consultation in November 2009 sought views on our proposed funding framework. We discussed our initial assessment of projects planned to commence construction by the end of 2010/11. Our stakeholder workshop on 7 December 2009 provided further opportunity for stakeholders to engage in the development of our Final Proposals.

Final Proposals

This document sets out our Final Proposals for enhancements to the current funding arrangements, to facilitate additional investment within the current transmission price control period (TPCR4). It describes the funding framework we intend to adopt, based on the approach set out in the Initial Proposals consultation.

We will fund efficient costs, up to the end of TPCR4, for pre-construction work for all projects and construction work for specific projects.

We will provide initial funding under this framework for construction spend incurred up to the end of 2011/12, when the current price control expires. Over this period, the TOs currently plan additional investment of around £1bn across all projects, representing around a fifth of the overall £5bn investment programme. Future funding arrangements, beyond 2011/12, will be considered separately.

At this time, we are not reaching a decision on all the investment planned up to the end of 2011/12. This document discusses how we will phase our decisions on funding and confirms the planned investment which we intend to fund at this stage based on our assessment to date. Our assessment has taken into account our consultants' final reports, which are published alongside this document and reflect further work undertaken since the stakeholder workshop.

At this stage, over the period to the end of 2011/12, we intend to allow total of £78m of pre-construction funding across all projects and £241m of construction funding across the following projects:

- Initial stages of NGET's **East Anglia** scheme,
- SHETL's **Beuly-Blackhillock-Kintore, Beuly-Dounreay** and **Knocknagael** projects,
- NGET's work to replace **Deeside substation** as part of the joint NGET-SPTL scheme **Western HVDC link**, and
- SPTL's **preparatory work** on its series compensation project **NGET-SPTL interconnection**.

This document also incorporates a preliminary consultation on the draft legal text of the licence changes to give effect to our Final Proposals. Following consideration of responses, we intend to issue a formal statutory consultation under section 11 of the Electricity Act 1989 with a view to implementing licence changes by 1 April 2010.

Further work

We may further consider the funding of relevant projects as additional information becomes available, including the following projects which are currently planned to commence construction in 2010/11: **Hunterston-Kintyre link** (joint SHETL-SPTL project), **Western Isles link** (SHETL project, including Lewis infrastructure), and **Shetland link including offshore hub** (SHETL project).

Consideration of the funding of construction spend in 2012/13 may be taken forward through either our TO incentives work or our work on the one year 'adapted roll-over' of TPCR4, as appropriate.

1. Introduction

Chapter Summary

This chapter sets out the background to this document and an overview of our Final Proposals for enhancements to the existing funding arrangements to facilitate additional investment within the current transmission price control. It also discusses the scope of our Final Proposals at this stage and explains this document's structure.

Question box

There are no questions in this chapter.

Enhanced transmission investment incentives

1.1. The TAR Final Report published in June 2008¹ set out a package of measures that are targeted at helping facilitate the Government's 2020 targets, by reducing or removing grid-related access barriers to connecting new generation. These measures include steps to create the appropriate regulatory and commercial framework and rules to enhance the speed with which new generation (renewable and conventional) could connect to the transmission system. Following the TAR Final Report, we initiated two parallel activities:

1. **2020 Transmission System Study ("ENSG study")** – we asked the three electricity Transmission Owners (TOs) - National Grid Electricity Transmission plc (NGET), Scottish Power Transmission Limited (SPTL) and Scottish Hydro Electric Transmission Limited (SHETL) - to undertake system studies to look at investment scenarios that would be capable of supporting the Government's 2020 targets.
2. **Enhanced transmission investment incentives ("TO incentives")** – this work has focused on the development of appropriate funding arrangements, as enhancements to the arrangements under the current transmission price control (TPCR4), to provide funding for critical. It has also considered the merits of introducing incentives to encourage the transmission companies to anticipate future investment requirements.

1.2. Published by the Electricity Networks Strategy Group (ENSG²) in July 2009, the ENSG study³ identified a large number of major transmission system projects designed to support the connection of new generation. The report highlighted reinforcements which the TOs consider are most likely to commence in the near

¹ Transmission Access Review – Final Report, June 2008 available at the following link: <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=84&refer=Networks/Trans/ElecTransPolicy/tar>

² Jointly chaired by Ofgem and the Department of Energy and Climate Change (DECC), formerly BERR

³ ENSG 'Our Electricity Transmission Network: A Vision for 2020' Full Report available at the following link: <http://www.ensg.gov.uk/index.php?article=126>.

future and also set out areas where further reinforcements have been identified for potential future consideration.

1.3. The findings of the ENSG study are an important input to our work on TO incentives but the study does not supplant the TOs' normal and ongoing programme of transmission system reinforcement work, or the scrutiny that we need to apply to the expenditure which the TOs are proposing to incur. In order to take forward our work on TO incentives, we therefore asked the transmission companies to identify and provide further information on those projects they consider require additional or earlier funding during the current transmission price control period. The TOs have put forward a long term investment plan with a slightly expanded scope to that set out in the ENSG report. The TOs' plan involves some £5 billion of investment in both pre-construction and construction work, of which they propose to spend around £1 billion within the next two years.

Process to date

December 2008 consultation

1.4. Our initial consultation on the TO incentives project was published in December 2008 (referred to as the "December consultation")⁴. We discussed the current funding arrangements for transmission investment and explained why we considered change might be needed to provide a framework for anticipatory investment. We defined anticipatory investment as capital expenditure based on anticipated future requirements, rather than prevailing contracted requirements. The December consultation identified scope for short term work to address immediate blocks to investment primarily associated with funding for pre-construction works; we proposed to implement the measures flowing from our short term work in Spring 2009. We also committed to consider, following further consultation, whether further measures could be introduced in Winter 2009 to facilitate additional investment that could commence within TPCR4.

1.5. Respondents to that consultation generally agreed that there is a need to establish a framework which provided additional funding for transmission investment and supported our proposed approach for taking this work forward. Respondents also supported our proposal to consider both **short term measures** to address barriers to investing ahead of need, and **further measures** to provide an appropriate funding framework for further investment within TPCR4.

⁴ Transmission Access Review – Initial Consultation on Enhanced Transmission Investment Incentives, December 2008 available at the following link:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=94&refer=Networks/Trans/ElecTransPolicy/tar>.

Short term measures

1.6. On 27 February 2009 we consulted (in our “February consultation”⁵) on our proposed way forward for the **short term measures** to address barriers to investing ahead of need. We described our intention to provide short term funding for pre-construction work (covering expenditure in the 2009/10 financial year) on the projects nominated by the companies for such funding. In light of the support for our proposed approach, on 1 April 2009 we implemented the licence changes to give effect to our proposed short term measures⁶, which provided a total of £12.5m of funding for initial pre-construction work in 2009/10 for specific projects.

1.7. In allowing funding for pre-construction activities, we highlighted that this did not create any expectation about the future funding arrangements - the focus of our short term measures was on developing a simple, pragmatic approach to providing additional funding for pre-construction works which would allow the TOs to provide a more detailed needs-case and cost assessment for our further consideration in the next stage of the TO incentives work.

September consultation

1.8. We issued a further consultation on 8 September 2009 (our “September consultation”), on our proposed way forward for the **further measures** to provide an appropriate funding framework for further investment within TPCR4. We explained our intention to appoint consultants to support our assessment of projects put forward by the TOs for funding consideration. We also discussed the scope and timing of our TO incentives work going forward towards finalisation of our proposals.

1.9. We discussed the interaction with the RPI-X@20 project and sought views on two options for the scope and timing of our TO incentives work. Option 1 would delay final proposals until March 2010, aligning more closely with the RPI-X@20 project, but preventing revenues from being recoverable in 2010/11. Option 2 proposed a split funding approach, allowing certain more urgent projects to be funded by more traditional arrangements. This approach has the advantage of allowing more material policy changes associated with RPI-X@20 to be accommodated whilst providing accelerated funding for certain investments.

Initial Proposals consultation

1.10. Following consideration of responses to our September consultation we published our Initial Proposals consultation on 3 November 2009. That document set out our proposals for enhancements to the current funding arrangements, to facilitate additional investment within the current transmission price control period

⁵ Transmission Access Review - Enhanced Investment Incentives Open Letter: Consultation on Short Term Measures. February 2009 available at the following link:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=99&refer=Networks/Trans/ElecTransPolicy/tar>.

⁶ Transmission Owner (TO) Incentives Licence Modification, available at the following link:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=123&refer=Networks/Trans/ElecTransPolicy/tar>.

(TPCR4). It explained our view that at this stage, taking into account the prevailing investment climate and interactions with future funding arrangements (discussed below), a simple pragmatic approach to funding is the best way to ensure that critical investment is not delayed (Option 2 as set out in our September consultation document). We sought views on our proposed funding framework and discussed our initial assessment of projects planned to commence construction by the end of 2010/11. We received 14 non-confidential and one confidential response to our Initial Proposals consultation. All non-confidential responses have been published on our website⁷. Our Initial Proposals are discussed further in chapter 2 and a detailed question-by-question summary of responses can be found in appendix 2.

Stakeholder workshop

1.11. To provide further opportunity for interested parties to engage in the development of our Final Proposals, we held a stakeholder workshop on 7 December 2009. An introductory presentation by Ofgem clarified the context and scope of our incentives work, and explained how we will phase our decisions on funding of individual projects (discussed further below). The transmission companies presented an overview of the ENSG study and of the projects they had nominated for funding. There were also presentations from Ofgem's consultants KEMA and Parsons Brinckerhoff (PB) which included the latest findings of their assessment. Material from our stakeholder workshop is available on our website⁸ and issues raised are discussed further in chapter 2.

Interaction with RPI-X@20 and TPCR5

1.12. A key area of interaction with our work on TO incentives is the 'RPI-X@20' review. The RPI-X@20 review is a major project, initiated by Ofgem in March 2008, to consider the workings of the current approach to regulating GB's energy networks and to develop recommendations for the future direction of regulatory policy. The RPI-X@20 project⁹ is looking fundamentally at the RPI-X regulatory framework, which has been used to regulate Britain's energy networks for nearly 20 years. Appendix 5 provides further information on the RPI-X@20 project, including its rationale and guiding principles.

1.13. Our work on TO incentives is focussed on the arrangements for funding additional investment within the current price control period, TPCR4, while the RPI-X@20 project is looking to develop recommendations for the way we regulate in the future. As highlighted in our Initial Proposals document, our chosen approach, through which funding would be provided up to the end of TPCR4, will help ensure alignment with the outcome of the RPI-X@20 project.

⁷Responses to our Initial Proposals consultation available at the following link:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=178&refer=Networks/Trans/ElecTransPolicy/tar>

⁸ Material from our Stakeholder Workshop available at the following link:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=181&refer=Networks/Trans/ElecTransPolicy/tar>

⁹ For more information see: <http://www.ofgem.gov.uk/Networks/rpix20/Pages/RPIX20.aspx>.

1.14. A related area of interaction is the process and timetable for taking forward the next transmission price control review (TPCR5). We have now confirmed our decision to extend TPCR4 for one year until 31 March 2013, to allow TPCR5 to take into account the conclusions from the RPI-X@20 project.¹⁰ We will shortly issue a document setting out that decision and the approach and timetable that will be followed for taking forward TPCR5 and the one year 'adapted roll-over' of TPCR4.

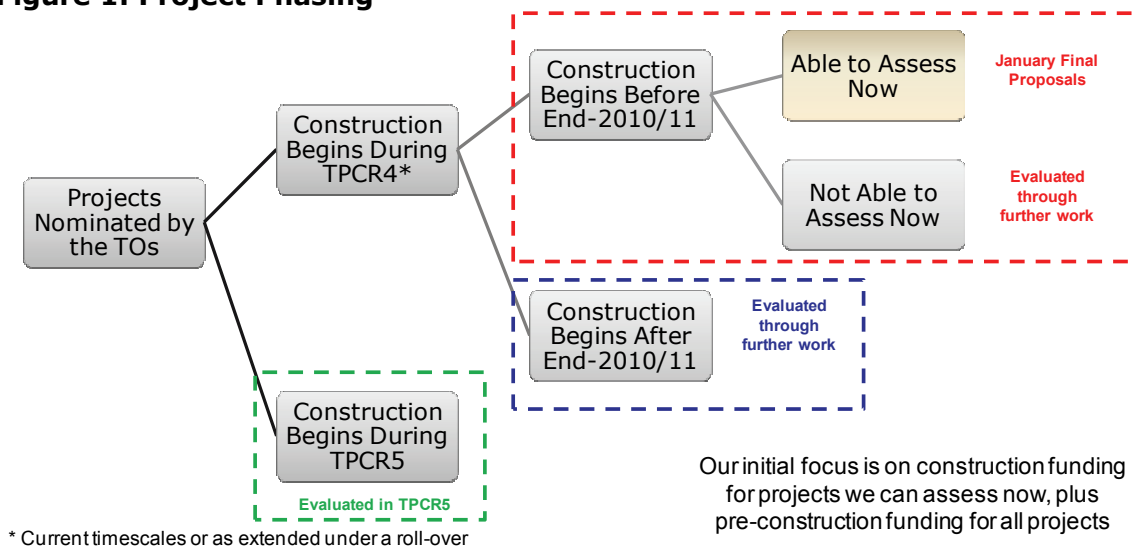
Scope and overview of Final Proposals in this document

1.15. This document discusses developments following our Initial Proposals consultation and sets out our Final Proposals for the funding framework we intend to introduce in April 2010 for funding additional investment within TPCR4.

1.16. In setting out the Final Proposals in this document, we have focussed on pre-construction costs for all projects and construction costs for projects where work is planned to commence before the end of 2010/11. At this stage we will provide funding under this framework up to the end of 2011/12, when the current price control expires. Over this period, the TOs currently plan additional investment of around £1bn across all projects, representing around a fifth of the overall £5bn investment programme put forward by the TOs.

1.17. We currently have insufficient information for us to reach a decision on all of the investment planned in 2011/12. We are therefore phasing our work on funding the investment raised by the TOs, as illustrated in the chart below.

Figure 1: Project Phasing



¹⁰ For further information, please see the following link:
[http://www.ofgem.gov.uk/networks/trans/pricecontrols/tpcr5/Documents1/FINAL%20-%20TPCR5%20draft%20letter%20of%20notice%20of%20Auth%20Dec%20\(sig\)%20\(2\).pdf](http://www.ofgem.gov.uk/networks/trans/pricecontrols/tpcr5/Documents1/FINAL%20-%20TPCR5%20draft%20letter%20of%20notice%20of%20Auth%20Dec%20(sig)%20(2).pdf)

1.18. We set out below our decisions on the funding we intend to provide at this stage based on our assessment to date. Subject to reaching agreement with the TOs on the licence changes to give effect to these Final Proposals including the definition of the outputs which will be delivered by the agreed funding, we will fund £78m of pre-construction costs across all projects and £241m of construction costs on specific projects planned to commence construction before the end of 2010/11. This document includes a preliminary consultation on the initial drafting of the legal text for the licence changes to give effect to our Final Proposals. We will work with the TOs to develop the detailed application to relevant projects before issuing a statutory consultation under section 11 of the Electricity Act 1989.

1.19. Our assessment to date has taken into account our consultants' final reports, which are published alongside this document, as well as respondents' views on the initial assessment set out in our Initial Proposals document and the further informal consultation undertaken through our stakeholder workshop. For a number of projects currently planned to commence construction by the end of 2010/11, we consider that there is not currently enough information available for us to make a decision on construction funding. At a later stage, and following receipt of updated information from the TOs, we may take forward further work to give further consideration to these projects. We may similarly give further consideration to construction funding for projects currently planned to commence construction after 2010/11 but before commencement of TPCR5. We welcome views on the opinions expressed by our consultants.

1.20. We will give separate consideration to the future funding arrangements, beyond 2011/12, for both new and existing investments. We note that costs incurred in 2012/13 may fall within scope of this funding framework or under the one year 'adapted rollover' of TPCR4. Based on current TO plans, expenditure during 2012/13 could amount to a further £0.9bn.

Licensing issues

1.21. As we have discussed in previous documents, some projects may require construction in areas which lie outside the authorised areas of a given transmission licensee. For example, links that are likely to extend into territorial waters and beyond into the Renewable Energy Zone ("REZ"). It will be necessary to provide an appropriate licensing framework for projects that fall into this category. These licensing issues are being considered and addressed in a parallel work stream to our work on TO Incentives.

Structure of this document

1.22. The remainder of this document is structured as follows: Chapter 2 discusses developments following our Initial Proposals consultation. Chapter 3 sets out our Final Proposals for enhancements to the current funding arrangements to facilitate additional investment within TPCR4, identifying the funding we intend to provide at this stage, while Chapter 4 includes a preliminary consultation on the legal text to

give a effect to these proposals. Chapter 5 discusses further work to consider the remaining investment planned by the TOs and discusses the way forward.

2. Developments following our Initial Proposals consultation

Chapter Summary

This chapter discusses developments following our Initial Proposals consultation which we have taken into account in developing our Final Proposals for the funding framework and the initial funding to be provided under that framework. This includes our consideration of responses to our Initial Proposals consultation and our further assessment of projects nominated for funding consideration taking into account updated information from the TOs, the conclusions of our consultancy work. It also includes discussions at our stakeholder workshop.

Question box

There are no questions in this chapter.

Introduction

2.1. This chapter provides a more detailed discussion of the matters set out in our Initial Proposals consultation and subsequent developments taken into account in determining the Final Proposals set out in this document. This includes responses to our Initial Proposals consultation and discussions at our stakeholder workshop, updated information on the projects nominated for funding consideration and our further assessment of these projects taking into account conclusions of our consultancy work.

2.2. This chapter is structured so as to cover issues relating to the funding framework first, before turning to issues relating to our assessment of the projects nominated by the TOs.

Funding framework

Initial proposals

Provision of interim funding to specific projects

2.3. As discussed in chapter 1, our Initial Proposals explained our decision to adopt a simple, pragmatic approach to funding at this stage. Specifically, we proposed to fund efficient costs, up to the end of TPCR4, for pre-construction work for all projects and construction work for specific projects. We stated that we would take decisions on the funding of construction work based on criteria including the strength of the needs case for individual projects and the readiness of the TOs to take forward the planned work.

2.4. We explained that, if all projects proceed according to the TOs' latest plans, our proposals could deliver funding for up to £1 billion of investment in the period to 1 April 2012, representing one fifth of the overall investment plan worth £5 billion. We explained that our proposals would provide clear funding arrangements for priority investments, which have a clear needs case and where construction can begin. We considered that this would avoid delay to critical investments. We further stated that our proposed approach would allow us to harmonise funding arrangements for transmission investments with the outcome of the RPI-X@20 project. We also highlighted that this approach would avoid complex funding arrangements against which the TOs might have found it difficult to raise finance (given current financial market conditions) and which would be difficult to develop and agree with the TOs in a timely way. We further noted that our proposals left open the prospect of introducing a competitive regime for some investments in the future.

Funding framework and mechanism

2.5. We proposed to provide funding for relevant projects up to an appropriate project-specific end point. We set out our view that in general this end-point should be the end of TPCR4, unless there is an earlier date beyond which deliverables cannot be defined and/or costs cannot be assessed.

2.6. We proposed to provide ex ante funding for efficient costs relating to pre-construction work for all projects and construction work for specific projects. We proposed to treat both cost categories as capex and adopt the TPCR4 cost of capital at 6.25% pre-tax WACC (or 5.05% vanilla WACC) but to increase the TOs' risk/reward exposure of over/underspend from 25% as under TPCR4 to 50% on the basis that cost uncertainty would be reduced. We also proposed to link allowances with defined deliverables and to make provision for adjustments in certain circumstances.

Implementation

2.7. We explained that, in January 2010, we would set out our Final Proposals and revenue allowances up to the end of TPCR4 (or earlier), so far as practicable based on information available from the TOs, for potential implementation in April 2010. We noted that this might allow additional allowed revenue to be reflected in setting 2010/11 TNUoS tariffs. We further noted that we may review further information that may become available from the TOs following finalisation of our proposals and may grant additional funding for further projects on the same basis as the investments which are funded in our Final Proposals. We clarified that future funding arrangements (beyond the end of TPCR4) will be addressed as part of the next price control review process.

Consultation responses

Views of TOs

2.8. The TOs differed in their reaction to our intention to shelve until TPCR5 more sophisticated models for funding anticipatory investment. One TO was disappointed that there would not be an opportunity to earn a premium rate of return for riskier projects, while the other two TOs considered our proposals to be appropriate.

2.9. One TO expressed concern that Ofgem was “micro managing” licensees, “drip feeding” funding to transmission companies and that Ofgem had become *de-facto* decision maker about network investment. Another TO pointed out that they were likely to incur additional cost as a result of having to strike contracts that are sufficiently flexible to deal with the lack of funding post 2012 at this stage. However the TO in question did not quantify the scale of this effect despite an explicit request for views on the magnitude of these additional costs.

2.10. The TOs expressed a willingness to accept the same costs of capital as that enshrined within TPCR4, as long as they were not exposed to increased risk. One TO argued that, should the risk sharing factor be changed away from 75:25, the cost of capital allowance should be increased.

2.11. One TO expressed a preference for pre-construction costs to be treated as Opex rather than Capex.

2.12. One TO criticised the fact that we left open the possibility of introducing competition into the provision of some transmission assets, arguing that 80% of their work was outsourced anyway.

Views of other respondents

2.13. The four generators and suppliers who responded to the consultation were all supportive of the approach we proposed in the Initial Proposals document, including the intention to use the TPCR4 cost of capital allowance. One commented on the criteria for identifying projects eligible for construction funding and expressed a view that this should take into account the volume of generation that could be connected and the impact on the need for SQSS derogations. This respondent also considered that the arrangements should not favour vertically integrated TOs. Another respondent was concerned that funding is limited to costs incurred up to the end of TPCR4.

Ofgem further views

2.14. Having carefully considered respondents’ views, we remain of the view that the simple, pragmatic approach to funding which we set out in our Initial Proposals consultation is appropriate at this time and that this will ensure that critical investment is not delayed. In chapter 3 we confirm the details of the funding

framework we intend to introduce in April 2010 and adopt to fund additional investment within TPCR4.

2.15. We note that the application of this framework to individual projects requires detailed scrutiny of the TOs' investment plans. As discussed in chapter 1 and taking into account our assessment set out below, we consider that we do not have sufficient information to reach a decision on all of the planned investment. We are therefore phasing our work on funding the investment raised by the TOs.

Assessment of projects nominated for funding consideration

Initial proposals

2.16. Our Initial Proposals consultation provided information on the projects nominated by the TOs for funding consideration, and discussed our approach to assessing the TOs' investment plans. It also confirmed the appointment of two consultants – KEMA and Parsons Brinckerhoff (PB) – to assist with our review of the projects nominated by the transmission companies, and explained their role in our assessment. It noted that KEMA's work is focussed on the overall robustness of the transmission investment plan proposed by the TOs while PB are conducting a detailed review of individual projects. The two pieces of work are complementary in nature, assessing the investment plan from two different directions.

2.17. Our Initial Proposals explained that our focus is on assessing funding needs in order to identify projects for which there is justification for further detailed assessment of appropriate funding arrangements for construction work. It identified five key assessment areas relevant: **need case, scope, timing, planning consent, technical** readiness. It noted that our assessment of funding arrangements would also consider **efficient costs**.

2.18. It included our initial assessment of the funding needs of projects where construction of at least one of its composite parts is currently anticipated by the end of 2010/11. We set out our view that, taking into account our consultants' initial findings, that there appeared to be a sufficiently strong justification for detailed consideration for construction funding for the following projects:

- **East Anglia** (NGET)
- **Beaulieu-Blackhillock-Kintore** (SHETL)
- **Beaulieu-Dounreay** (SHETL)
- **Knocknagael** (SHETL).

We stated that we had not yet reached a view on the case for providing construction funding in 2010/11 for other projects, for which we set out our initial assessment and identified the key areas that our consultants indicated the need for further information on these projects, as summarised in the table below.

Table 1: Projects for which we had not reached a view to provide construction funding in 2010/11

TO	Project Name	Need case	Appropriate scope	Appropriate timing	Full planning consent	Technical readiness
NGET	Western HVDC link (with SPTL)					
	- West Coast HVDC link	Q	Q	Q	> mid 2012	Q
	- New Deesside 400kV substation	Q	Q	Q	Y	Y
SPTL	SPTL - NGET interconnection	Q	Q	Q	Q	Q
	Western HVDC link (with NGET)	Q	Q	Q	> mid 2012	>2yrs
	Hunterston - Kintyre link (with SHETL)	Y	Q	Q	apply Jan 2010	Q
SHETL	Western Isles link	Q	Q	Q	Q	Q
	Shetland link	Q	Q	Q	Q	Q
	Hunterston-Kintyre link (with SPTL)	Y	Q	Q	apply Jan 2010	Q
Note : Initial assessment set out in Initial Proposals consultation (November 2009). "Y" indicates initial positive assessment subject to further detailed review; "Q" indicates further information/evidence required at this stage.						

2.19. We stated our intention to set out our further views on these projects in our Final Proposals document and to extend this assessment to the remaining projects if the information from the TOs had allowed our analysis to progress sufficiently.

Consultation responses

2.20. A number respondents to our initial proposals consultation commented on our initial assessment of specific projects. A summary of the issues raised, and Ofgem's further views, are set out below:

- **SPTL-NGET interconnection** – One TO expressed its disappointment that this project had not received the green light. *(As set out below, we believe that there is still insufficient information to allow us to take a firm view of the cost and phasing of all stages, especially the later stages, of this project. However, recognising the benefit of utilising the outage windows next year and the current status of the project, we propose to provide funding for [the] early phase[s] of this project.)*
- **Western HVDC link** – One TO expressed its disappointment that this project has not received the green light. *(As set out below, we consider the need case*

for this project is uncertain, although, also as set out below, we propose to fund the initial stage of the project relating to the Deeside substation).

- **Orkney link** - Five respondents expressed the opinion that the initial assessment should not have omitted the potential enhancement to the Orkney link. *(Pre-construction work on the Orkney link is already funded as part of the TPCR4 settlement and SHETL has indicated that it intends to use this funding to undertake development work in the area, without requesting additional funding for this project through our work on TO incentives.)*
- **Western Isles link** - Three respondents argued that there was a strong needs case for the Western Isles link, stating that 510MW of capacity was expected to connect on Lewis. They criticised our initial assessment for not taking into account social and economic aspects of the projects and argued that our approach was “not strategic enough”. *(We have not yet received sufficient information on the Western Isles link to take a decision and may further consider this project following receipt of further information.)*

Updated information from TOs

2.21. Details of all the latest cost estimates for all the projects put forward by the TOs are given in Appendix 3. The following table provides summary information on the additional funding sought by the TOs. It summarises the total pre-construction and construction costs of projects that are neither covered by the current price control provisions nor the short term funding measures implemented in April 2009. Based on the latest costs submission from the TOs, the total additional costs they are seeking to incur within the current price control (that is, by end of financial year 2011/12) are £78m for pre-construction and £1005m for construction activities, totalling just under £1083m. This total increases to £1990m if costs in 2012/13 are included.

Table 2: Additional funding required by TOs for TO Incentives Project Nominations

Additional funding required (£m)	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Total
NGET	0	33	31	24	14	4	2	0	0	107
SPTL	0	6	5	0	0	0	0	0	0	11
SHETL	0	1	3	0	0	0	0	0	0	4
Total Pre-construction	0	40	39	25	14	4	2	0	0	122
NGET	2	55	195	357	606	778	594	313	79	2979
SPTL	0	5	55	139	220	198	83	0	0	700
SHETL (incl. offshore hub)*	19	336	337	386	187	28	0	0	0	1294
Total Construction	21	397	587	882	1013	1004	677	313	79	4973
Total Pre-Construction and Construction	21	437	625	907	1026	1008	679	313	79	5095
Total to 2011/12	1083									
Total to 2012/13	1990									

*Our Initial Proposals excluded the cost of the offshore hub which SHETL have asked us to consider in our Final Proposals.

Note: All costs and totals are rounded to the nearest integer from detailed TO cost submissions.

2.22. At the stakeholder workshop on 7 December 2009, the transmission companies presented an overview of the ENSG study and of the projects they had nominated for funding under the TO Incentives framework. NGET stressed that the projects nominated in the ENSG study facilitated meeting the Government's and the European Commission's legally binding targets. SPTL emphasised that the planning process was unlikely to cause delays to their nominated projects. SHETL set out its investment programme, specifically focussing on island connections and addressing the constraint along the B1 boundary.

2.23. As part of its submission on the Shetland link project, SHETL included an alternative design which would include the construction of an "offshore hub" by adding an intermediate offshore platform along the route of the proposed Shetland link. This would increase the total investment cost by £130m, with £70m to be incurred by 2011/12 and £117m by 2012/13. For this investment, SHETL submitted an application to the European Commission in July 2009 for funding to cover half of the cost of the additional cost associated with the hub. In their application document, SHETL explained that the purpose of the hub was to facilitate the connection of offshore wind and marine generation. However, they also indicated other potential benefits, such as for the hub to act as a marshalling point for other

transmission lines such as an additional transfer route between Caithness and Blackhillock.

On 9 December 2009, the European Commission announced that they had approved the funding of €74.10m (which is £65 million sterling, equivalent to half of the cost of incremental cost of the offshore hub) in connection with the Shetland link. SHETL therefore requested that, when we consider the merits of the Shetland link, we should include the offshore hub element in our assessment, for which they would seek the remaining half of the cost, i.e. £65m. We have therefore included the cost of the offshore hub in the Shetland link project costs. The Authority has not yet made a decision on the funding of this project.

Consultants' assessment

Role in assessment process and approach taken

2.24. As discussed above, our examination of funding needs for individual projects has focused on the following: the **need case, scope, timing, planning consent requirements** and **technical readiness** of the project in question. Where relevant, we have also considered **efficient costs**. Our assessment has been informed by two complementary pieces of consulting work undertaken by KEMA and PB.

2.25. Noting that the projects nominated by the TOs were at different stages of development, we grouped the projects into phases for the purposes of our consultants' assessment, as outlined in figure 1 above. We initially asked the consultants to focus on projects (or self contained elements of a project) where it is anticipated that construction costs will begin to be incurred by the end of 2010/11, so that we may be in a position to provide funding clarity sooner for projects with a greater urgency to proceed and which we are able to assess now. This approach has also allowed us to target our work on projects where there is more detailed information and to identify projects on which we are able to reach a decision on construction funding as part of these Final Proposals.

2.26. Following an initial review of the TOs' information, the consultants made additional information requests, responses to which have now been provided by TOs. The consultants also held meetings with each of the TOs to obtain further insight into the overall investment and individual project plans. Our consultants' assessment has taken account of further information as it became available.

2.27. Further to the initial assessment set out in our Initial Proposals consultation and discussed above, our consultants gave presentations at our stakeholder workshop on their assessment of the project proposals. KEMA's presentation set out the approach they applied when assessing the overall robustness of the TOs' plans. They explained how each individual project had been appraised and in particular the way in which KEMA had traded off investment cost today with potential constraint costs in the future. PB then explained how they assessed each individual project plan against deliverability, design and cost. This assessment was based on the information available to them at the time and they found that, for some projects,

further information was required before they were able to come to a conclusion on the merits of the projects. They recommended that the projects be reassessed once this information is available. The presentation slides and a summary note of the discussion are available on our website¹¹.

2.28. The final conclusions of our consultants' assessment, taking into account the latest information from the TOs and additional work undertaken following the stakeholder workshop, is summarised below. Further detail is given in our consultants' final reports published alongside this document.

2.29. Any additional information subsequently provided by the TOs will be taken into account in any further work.

KEMA's review of the robustness of the transmission investment plan

2.30. We commissioned KEMA to review the TOs' overall plan of investments for the GB transmission system aimed at facilitating the government's 2020 renewable generation targets. KEMA were asked to consider the ENSG study and information that TOs supplied in support of project nominations.

2.31. As part of their assessment, KEMA assessed individual projects against the following criteria:

- **Needs Case** (certainty of need): whether the case for investment is clear and certain at this time.
- **Scope** (appropriateness of scope): whether the scope of investment is appropriate and represents an efficient response to the need.
- **Timing** (certainty of timing): whether the timing of the investment is appropriate given that there is a satisfactory case for need and that scope of investment is appropriate.

2.32. KEMA expressed the summary results of its assessments through "traffic-light" indicators in its report. KEMA's assessments considered project nominations against supporting information supplied by the cut-off date 14th December 2009. Ofgem used these indicators in its consideration for funding individual projects (see Appendix 4).

PB's review of efficiency of design, timing and costing of individual projects

2.33. PB assessed individual projects against the following criteria:

¹¹ Material from our Stakeholder Workshop available at the following link:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=181&refer=Networks/Trans/ElecTransPolicy/tar>

- **Planning Consents** (deliverability): consideration of the detailed programme of work including pre-construction activities, procurement and construction work. Also the anticipated degree of difficulty in acquiring consents if needed.
- **Technical Readiness** (design): whether the project design was optimal considering: alternatives to the design, whether the design was likely to change; the detailed implementation plan; plant and circuit ratings; whether the scope of the project is best designed to achieve the objectives of the project, and whether PB consider the project will achieve the objectives.
- **Efficient Costs:** whether proposed costs are reasonable compared to industry benchmark prices for labour and equipment.

2.34. PB has assessed the efficiency of all of the nominated projects based on quantities and unit costs of generic asset types involved for each project, adjusted for project specific factors. The unit cost estimates are based on various sources such as PB's own company intelligence as well as publicly available information such as publications by the International Council of Large Electric Systems (CIGRE).

2.35. PB found that individual projects are at different stages of development. For example, some projects were well advanced whereas others still required significant preparatory work. The extent of assessment undertaken reflects the information currently available. For some projects in early planning stages, PB's assessment has considered pre-construction costs only.

2.36. PB produced a "traffic-light" table to display its assessments of project nominations down to sub-project level where this information was available, (some projects were divided into several, smaller projects). PB's assessments considered project nominations against supporting information supplied by the cut-off date 14th December 2009. Ofgem used these indicators in its consideration for funding individual projects (see Appendix 4).

Key results of detailed assessment of projects under consideration for funding at this stage

2.37. For the purposes of our Final Proposals (set out in chapter 3) we have focussed on reaching decisions on initial funding (to end 2011/12) of pre-construction costs for all projects and construction costs for projects currently planned to commence construction before the end of 2010/11. This section summarises key results from our consultants' detailed assessment of relevant projects and confirms the investment which we have considered for initial funding under our funding framework set out in chapter 3. The remaining investment put forward by the TOs may be further considered through further work.

Pre-construction costs

2.38. In terms of pre-construction costs, our Initial Proposals set out our view that it may be appropriate to fund the full range of the projects identified by the TOs, regardless of whether there is uncertainty about the need to carry out the related construction activities. We remain of the view that this is appropriate because the additional expenditure on pre-construction activities is relatively modest (only amounting to £78 million in the period up to the end of 2011/12) and because by funding this investment we can keep options open for the future. Our current view is that this approach is likely to remain valid in the context of the TPCR4 'adapted roll-over' arrangements, and note that the TOs plan a further £25 million of expenditure on pre-construction activities in 2012/13.

2.39. At this stage, our consultants have not proposed any adjustment to the TO estimates for pre-construction costs. However, for projects that involve proceeding through the planning process after the establishment of the Infrastructure Planning Commission (IPC), PB indicated that it is more difficult to take a firm ex-ante view on the level of costs, although there is no evidence to support a different view from that of the TOs. We have therefore provided flexibility in the licence drafting in supplementary Appendix 9 for certain specific revenue adjustments to be made subject to Authority determination.

Construction costs

2.40. Based on our initial assessment of projects planned to commence construction by end 2010/11, our Initial Proposals consultation identified projects for which we considered there appeared to be a sufficiently strong justification for detailing consideration for construction funding. These projects were set out in our Initial Proposals and have been replicated below. The table now includes the latest TO estimates of construction costs. Across all these projects, the planned expenditure on construction costs is £217.5m to end 2011/12, increasing to £312.8m if 2012/13 costs are included. For all of these projects, PB's assessment indicated that all of the TOs' cost estimates are reasonable. We therefore intend to provide construction funding for these projects as part of our Final Proposals, as set out in chapter 3.

Table 3: Initial View of Projects for Consideration of Construction Funding

TO	Project Name	Construction cost during TPCR4 (£m)					
		2009/10	2010/11	2011/12	2012/13	Total to 2011/12	Total to 2012/13
NGET	East Anglia	2.0	35.0	73.3	58.0	110.3	168.3
SHTL	Beauly - Blackhillock - Kintore	5.1	13.0	3.0	11.2	21.1	32.3
	Beauly - Dounreay	0.0	21.3	24.0	26.0	45.3	71.3
	Knocknagael	5.9	24.9	10.0	0.0	40.7	40.7
Total		13.0	94.3	110.3	95.3	217.5	312.8

2.41. The remaining projects where the TOs propose to commence construction before the end of 2010/11 have been the subject of further investigation by our consultants.

2.42. KEMA has carried out an extensive assessment of the optimal scope and timing of NGET's and SP Transmission's joint **Western HVDC link**. This was done in the context of the overall plan by the TOs to reinforce the boundary between Scotland and England. PB have also considered the TOs' readiness to progress the construction and the efficient construction costs. KEMA are not yet convinced of the need and timing for this project. However, they have looked into the merit of allowing funding for the component of this project that NGET proposed to commence in 2010/11, which relates to constructing a new **Deeside substation**. We note that NGET's estimates of construction costs for Deeside, which PB consider to be reasonable, are £42.9m up to the end of 2011/12 and £67.2m up to the end of 2012/13. The consultants have advised that there may be benefit in allowing work on Deeside to progress even if the case for the overall link is unclear. This is because the Deeside substation needs to be replaced in any case (although a straightforward replacement of the substation would cost some £20m less than the work which is necessary to support the submarine link). Funding for this component of the overall project would be a relatively cost-effective way of keeping options open.

2.43. For SPTL's series compensation project **SPTL-NGET interconnection**, KEMA has found that whilst the need to commence the work in 2010/11 is not compelling, there is potential benefit in advancing some enabling work at Eccles to utilise the outage window¹² which would reduce the construction constraints costs by some £20m. PB's assessment indicated that although four of the six proposed series compensators already have planning consent, SPTL will hold back from letting the

¹² The outage window refers to the period over summer when demand is traditionally low and certain reinforcements can be taken out of action for maintenance without adversely affecting the system.

main contract until all the sites have received planning consent; the timing of this remains uncertain. SPTL's plans include costs of £5m in 2010/11 for preparatory work on this project. PB recommended that funding should be provided for this preparatory work, whereas further funding should be reviewed after January 2010 when more information on the project becomes available.

2.44. We have taken the above matters into account in considering the merits of providing initial construction funding to these projects as part of these Final Proposals. Our decision is set out in chapter 3.

2.45. There are three further projects currently planned to commence construction by the end of 2010/11 where our consultants still consider the design work is at too early a stage to allow a decision about construction funding:

- SPTL's and SHETL's joint project **Hunterston-Kintyre link**
- SHETL's **Western Isles link** (including Lewis infrastructure), and
- SHETL's **Shetland link including offshore hub**.

2.46. We remain of the view that there is not currently enough information available for us to make a decision on construction funding on these projects. We may at a later stage, and following receipt of updated information from the TOs, take forward further work to give further consideration to these projects and may similarly consider projects currently planned to commence construction after 2010/11 but before commencement of TPCR5.

2.47. In the meantime, we welcome views on our consultants' assessment of the investment planned by the TOs for which we are not reaching a decision on initial funding (to end 2011/12) at this time. Where relevant, we will take views into account in any further work.

3. Final Proposals

Chapter Summary

This section sets out the funding framework we intend to adopt to fund efficient costs for relevant projects up to the end of the current transmission price control period (TPCR4). It also identifies the projects identified by the TOs for which we intend to provide funding at this time and sets out the associated revenue allowances.

Question box

There are no questions in this chapter.

Funding pre-construction costs

3.1. As discussed in chapter 2, we intend to fund efficient pre-construction costs for all projects nominated by the TOs. The table overleaf summarises our Final Proposals for pre-construction funding across all projects to the end of 2011/12. This would result in funding for £78m of pre-construction activities. We are not proposing any adjustment to the TO estimates for pre-construction costs. However, we note the difficulty of forming a firm view of the costs for projects involving post-IPC planning process and may need to rely on the proposed asset value adjustment event mechanism described in supplementary Appendix 9 on licence drafting to ensure efficient costs are funded.

Table 4: Final Funding Proposals for Pre-construction Costs

TO	Project Name	TO estimates of pre-construction costs (£m)			Ofgem Final Proposals for initial funding of pre-construction costs (£m)		
		2010/11	2011/12	Total	2010/11	2011/12	Total
NGET	Anglo Scottish Incremental	5.0	4.5	9.5	5.0	4.5	9.5
	Central Wales	1.2	1.8	3.0	1.2	1.8	3.0
	East Anglia	5.9	3.2	9.1	5.9	3.2	9.1
	Eastern HVDC link (NGET/SHETL)	0.8	1.6	2.4	0.8	1.6	2.4
	Humber	2.0	3.7	5.7	2.0	3.7	5.7
	London	3.0	2.0	5.0	3.0	2.0	5.0
	North Wales	7.0	7.2	14.2	7.0	7.2	14.2
	South West	2.7	2.1	4.8	2.7	2.1	4.8
	Western HVDC link (NGET/SPTL)	5.8	4.4	10.2	5.8	4.4	10.2
SPTL	Western HVDC link (NGET/SPTL)	5.5	5.0	10.5	5.5	5.0	10.5
	Hunterston-Kintyre link (SHETL/SPTL)	0.3	0.2	0.5	0.3	0.2	0.5
SHETL	Eastern HVDC link (NGET/SHETL)	0.8	2.8	3.6	0.8	2.8	3.6
TO Totals	NGET	33.2	30.5	63.7	33.2	30.5	63.7
	SPTL	5.8	5.2	11.0	5.8	5.2	11.0
	SHETL	0.8	2.8	3.6	0.8	2.8	3.6
Total		39.8	38.5	78.3	39.8	38.5	78.3

Note: All costs and totals are rounded to one decimal place from detailed TO cost submissions.

3.2. As set out above and as described in our Initial Proposals document, there are two potential approaches to addressing the funding of pre-construction activities:

- Capex treatment – under this option, the investment would be funded as capex and recovered over the relevant life of the assets together with a return on the investment; and
- Opex treatment – where the expenditure would be treated as Opex, resulting in an immediate adjustment to allowed revenue which is equal to the full amount of the investment.

3.3. We intend to treat these costs as capex for the following reasons:

- Treating these costs as Opex will have a larger impact on transmission tariffs in the short term, compared to treating these costs as capex which would spread the costs over the life of the assets. For example, treating an annual amount of £50m of pre-construction costs (which is just above the maximum level indicated by the TOs) as Opex would imply an increase of TNUoS of around 3% for one year, whereas treating these costs as capex would only result in an increase of TNUoS tariffs of around 0.3% over 20 years (including return and depreciation).
- Adopting a capex approach for pre-construction costs would be consistent with the approach to be adopted for construction costs, and would permit an approach where all additional investment within TPCR4 is remunerated in the same way. Adoption of a different funding mechanism for pre-construction costs would necessitate definition of an appropriate breakpoint between pre-construction work and construction work.

3.4. We will adopt an ex ante approach to the setting of pre-construction funding allowances, linked to the completion of defined deliverables. However, where evidence is provided by the TOs that additional costs have been incurred as a consequence of planning consent, we may make adjustments to such funding arrangements using the asset value adjusting event provision, especially regarding projects that would involve post-IPC planning processes.

Funding construction costs

3.5. Taking into account our consultants assessment and recommendations, at this stage we intend to fund the following projects at the cost levels indicated by the TOs:

- NGET's **East Anglia**;
- SHETL's **Beaulieu-Blackhillock-Kintore**;
- SHETL's **Beaulieu-Dounreay**; and
- SHETL's **Knocknagael**.

3.6. For NGET's and SPTL's joint **Western HVDC link project**, we note that our consultants have some doubt as to the certainty of the need case, the timing and the TOs' readiness to proceed with the full project. However, for the element of this project that NGET proposed to commence in 2010/11, i.e. the construction of a new substation at Deeside, we have analysed the costs and benefits of allowing this project to proceed, taking into account our consultants' advice:

- The additional costs associated with the proposed work on the Deeside substation to facilitate the Western HVDC link are the potential over-scoping of the design compared to a straight asset replacement option¹³, which our consultants estimate to be at an incremental cost in the order of £20m;

¹³ The existing Deeside Substation is up for asset replacement in 2018 anyway, so this is bringing the replacement forward and upgrading it to cater for the potential HVDC equipment

- The benefits of proceeding with the Deeside work at this time is that it would avoid a delay, by around one year, to the completion of the Western HVDC link if investment in this link were subsequently judged to be appropriate. We have conducted a high-level estimate of the potential saving of constraint costs which would result from providing the 1800MW capacity one year sooner. If the capacity is 50% utilised with a 35% load factor, and if there is 25% chance that the constraint would be active and priced at £60/MWh, the constraint costs that would be saved in one year are £41m¹⁴.

3.7. Taking account of these factors and our duties, we consider there is a case for proceeding with this element of the project in 2010/11. Therefore we propose to fund the **Deeside substation** component of the Western HVDC link from 2010/11. The remaining elements of the project – the HVDC link itself and the landing point in SPTL’s network – are not proposed to commence until after 2010/11, and therefore may be considered as part of any further work.

3.8. For SPTL’s series compensation project **SPTL-NGET interconnection**, we note the remaining uncertainty that SP Transmission will gain the planning consent for two of the six installations, which it needs in order to let a combined contract for all installations. However we note that the planned enabling works at Eccles are cleared to proceed subject to landowner consent. Whilst we are not making a decision on the remainder of the works for the SPTL-NGET interconnection project, we are proposing to provide funding for the enabling works at Eccles. Our rationale for this proposal is that there is a material benefit in allowing the reinforcement works to take place in the existing outage window in 2010/11. If the 2010/11 outage window is utilised for the enabling works, this will result in a forecast saving in constraint costs of £20m, compared with the costs of the project of £5m. On this basis, we propose to provide funding for these specific preparatory works in 2010/11 and may review further information and evidence after January 2010 to consider future funding as part of any further work.

3.9. As discussed in chapter 2, we are not reaching a decision on the funding for three projects where construction is expected to commence in 2010/11, namely SPTL’s and SHETL’s joint project **Hunterston–Kintyre link**, and the proposed **Western Isles link and Shetland link with offshore hub**. We note that SHETL intends to bring forward further information with respect to these projects in early 2010. We will consider any such information as part of any further work.

3.10. For all projects for which TOs proposed to commence construction by the end of 2011/12 (i.e. TPCR4), we have checked for any overlap with work and costs covered by capex allowances under TPCR4. The only potential double counting in allowances is for the Deeside substation work. The TPCR4 settlement includes allowances of £20.4m (in 2004/05 prices) for NGET to replace the existing Deeside substation, which would be overtaken by the new Deeside substation element of the proposed Western HVDC link project. Therefore, we propose to net off the original funding made under TPCR4 in our proposal to allow funding for the new Deeside substation work.

¹⁴ Calculation as follows: 1800 * 50% utilisation * 0.35 load factor * 8760 hours * 25% chance = 689,850MWh constrained. At a price of £60/MWh, this equals £41,391,000.

3.11. Table 5 below summarises our funding proposal for all projects for which TOs propose to commence construction by the end of 2010/11. Those highlighted in yellow indicate funding that we are now proposing to provide in addition to those published in our Initial Proposals.

Table 5: Final Funding Proposals for Construction Costs

TO	Project Name (and sub-element if applicable)		TO estimates of construction costs (£m)				Ofgem Final Proposals for initial funding of construction costs (£m)			
			2009/10	2010/11	2011/12	Total to 2011/12	2009/10	2010/11	2011/12	Total to 2011/12
NGET	East Anglia		2.0	35.0	73.3	110.3	2.0	35.0	73.3	110.3
	Western HVDC link (NGET/SPTL)	Link	0.0	0.0	25.0	25.0				
		Deeside substation	0.0	20.4	22.4	42.9	0.0	5.0	13.1	18.1
SPTL	SPT-NGET interconnection	Enabling works 2010/11	0.0	5.0	0.0	5.0	0.0	5.0	0.0	5.0
		Remaining sections	0.0	0.0	15.0	15.0				
	Western HVDC link (NGET/SPTL)		0.0	0.0	25.0	25.0				
	Hunterston-Kintyre link (SHETL/SPTL)		Included in SHETL costs							
SHETL	Beauly - Blackhillock - Kintore		5.1	13.0	3.0	21.1	5.1	13.0	3.0	21.1
	Beauly - Dounreay		0.0	21.3	24.0	45.3	0.0	21.3	24.0	45.3
	Knocknagael		5.9	24.9	10.0	40.7	5.9	24.9	10.0	40.7
	Western Isles link incl. Lewis infrastructure		8.0	101.9	106.1	216.0				
	Shetland link (incl. offshore hub)		0.1	152.6	158.7	311.4				
	Hunterston-Kintyre link (SHETL/SPTL)		0.0	22.8	34.9	57.7				
TO Totals	NGET		2.0	55.5	120.7	178.2	2.0	40.0	86.4	128.4
	SPTL		0.0	5.0	40.0	45.0	0.0	5.0	0.0	5.0
	SHETL		19.1	336.4	336.6	692.2	11.0	59.2	37.0	107.1
Total			21.1	396.9	497.4	915.4	13.0	104.2	123.3	240.5

Note: All costs and totals are rounded to one decimal place from detailed TO cost submissions.



Decision to be provided at a later date



Additional funding to that proposed in Initial Proposals consultation.

Funding mechanism

3.12. We propose that funding will be provided in the form of an *ex ante* allowance, covering approved costs to be incurred in a given year. Funding will be provided on a capex basis. The same funding mechanism will be adopted for both pre-construction costs and construction costs.

3.13. In applying this approach to provision of interim funding to a given project it will be important to ensure that the comparison of actual spend against the capex allowance is undertaken on a like-for-like basis and with reference to the relevant output measures. This will ensure that rewards reflect genuine efficiency in delivering expected outputs. Therefore, we will incentivise efficient spend by:

- Agreeing with the TOs a schedule of deliverables that we anticipate will result from the construction spend. This will be reflected in output measures for individual projects.
- Requiring that the TOs provide us each year with an independently assessed technical report which will, amongst other things, track the progress towards the achievement of the agreed deliverables.
- Truing-up the allowed spend after 2012 in the light of progress made against the schedule of deliverables.
- Setting an ex-ante construction cost allowance, based on our assessment of the costs that an efficient company would incur to secure the agreed deliverables. This ex-ante allowance will not be linked to an agreed index of construction costs (given the proximity of the planned spend).

3.14. Where the arrangements established by this Final Proposals document overlap with existing funding mechanisms, the existing mechanisms will be disabled to avoid over-compensating the TOs for the investments that they have made.

3.15. Under the existing price control (revenue driver) mechanisms, funding is linked to specific triggers, including the connection of new generation or to changes in boundary flows. We do not propose to introduce such trigger conditions for the release of funding for the projects that will be addressed in our Final Proposals. However, in our further work we may apply conditional funding in certain circumstances, for example, in the case of projects which have not yet received full planning consent but otherwise satisfy our criteria for provision of construction funding.

3.16. The projects which have been identified by the TOs include investments which anticipate future need. It is possible that, in time, improved information, including on the mix and location of generators connected to the system, may result in revisions to the assessment of the need for different investments. Given this uncertainty, we expect the TOs to ensure that their contracts incorporate appropriate

arrangements, including provisions which permit the variation and termination of these contracts, so as to minimise the risk that consumers will bear the cost of unnecessary investment.

3.17. In recognition that TO investment plans can be affected by external factors we will make provisions that in the event that there is a material, unforeseen variation in costs (other than a change in unit costs) in certain circumstances, the TOs can raise an Asset Value Adjusting Event and seek an adjustment to the ex-ante allowance. This could be the case in the event that achieving planning consents under the IPC regime is materially more or less expensive than the assumptions behind the TOs' forecasts, and would expect the TOs to make submissions to the Authority in either case. As part of our assessment of such a request we will consult with interested parties before deciding whether to make a direction to amend the licence so as to adjust the allowance.

3.18. Noting that we are not reaching a decision on all the planned investment at this stage, we will also include a process for providing additional funding for relevant projects following further work. This process is described in Annex A to the drafting for Special Condition D11 and J12 in supplementary Appendix 9.

Cost of capital allowance

3.19. In our Initial Proposals we proposed that these additional investments should be remunerated on the basis of the rate of return adopted under TPCR4 up to the end of 2011/12. The TPCR4 weighted average cost of capital (WACC) was 6.25% real pre-tax, 5.05% real vanilla and 4.38% real post-tax, all of which were based on an assumed gearing ratio of 60%.

3.20. We consider that the projects for which we have made funding proposals do not differ materially in their risk profiles from the other projects remunerated by the current TPCR4 cost of capital, especially given the time horizon for our proposals is limited at this stage to the end of March 2012. Furthermore, we see the benefit of keeping the TPCR4 settlement whole and not causing an inconsistency in the way we treat transmission companies' RAV. Taking these factors together, our final proposals on the cost of capital is to retain the existing provisions in TPCR4.

Capex efficiency sharing factor

3.21. Under the current price control arrangements, the TOs are incentivised to secure capex efficiency by means of a 25% sharing factor - they are rewarded or penalised for 25% of the net present value (NPV) of any underspend or overspend against the capex allowance.

3.22. In our Initial Proposals consultation we had suggested there might be merits in moving away from the 25% sharing factor and increasing the TOs' exposure to incentivised costs to 50%. However, in our Final Proposals we are adopting a 25% sharing factor, consistent with existing price control arrangements. We consider this is appropriate because, as far as practical, we are seeking to mirror the

arrangements which were agreed at TPCR4. This preserves the spirit of the TPCR4 settlement and is appropriate in light of the fact that the characteristics of projects nominated by the TOs for additional funding do not differ materially from the characteristics of the investments funded under TPCR4 - the projects which will receive construction funding at this stage have been identified on the basis that they satisfy criteria which are similar to those which applied to projects funded under the current control.

3.23. We will retain flexibility to adopt a different level of incentivisation when applying this framework to further projects in the future. For example, we may consider it appropriate to increase the exposure to incentivised costs (e.g. apply a higher sharing factor) when funding projects which we consider to be at higher risk of inefficient spend. Where relevant, we will give further consideration to these matters in developing funding proposals for further projects.

Depreciation

3.24. We indicated in the TPCR4 Final Proposals that, once pre-Vesting assets become fully depreciated, we intended to reduce post-Vesting regulatory asset lives to 20 years for all electricity transmission companies. This decision was based in part upon a desire to manage the potential consequences of a depreciation “cliff edge” which may have created a situation in which transmission companies’ revenues are reduced significantly at a time when large investment is needed. The point at which this reduction in the depreciation period occurs was 2009/10 for NGET and SPTL and will be 2011/12 for SHETL.

3.25. We also proposed to adopt a 20 year depreciation period in respect of the approved TIRG schemes.

3.26. We further decided that the assets transferred into the RAV as a result of BETTA should have their asset lives reduced to 20 years, as otherwise these assets would have a longer regulatory life than subsequent additions to these assets.

3.27. In bilateral discussions, TOs expressed a preference for a 20 year depreciation period for projects funded under our TO incentives funding framework, in order to be consistent with other projects funded under TPCR4 and TIRG.

3.28. To retain as much consistency as possible between the TOs and with current arrangements, our Final Proposals adopt a depreciation period of 20 years for all projects funded under our TO incentives funding framework at this stage. However, this default position applies to the end of the current price control only. In particular, the decision we take now would not preclude us from making changes to how we set depreciation at TPCR5, taking on board recommendations from RPI-X@20.

3.29. In terms of the timing of the commencement of depreciation, we note that under the TIRG mechanism, depreciation on capex commences in the year following its expenditure, rather than commencing when the asset is in use. This was considered appropriate given the anticipated scale of TIRG investments. We believe

that similar arguments apply in the case of the interim funding arrangements – we propose to start depreciation in the year following expenditure for all projects funded under our TO incentives funding framework at this stage.

3.30. There is no evidence to suggest at this stage that a different approach to depreciation should be adopted for any further projects we will fund during TPCR4 under our TO incentives work. However, we intend to reserve the right to change our position on depreciation if new evidence comes to light. In the absence of such evidence, we would also adopt our proposed approach to depreciation when applying this framework to further projects in the future.

4. Preliminary consultation on legal text

Chapter Summary

This chapter sets out preliminary consultation on the draft legal text of the licence changes to give effect to our Final Proposals set out in chapter 3. Following consideration of responses, and ongoing work on detailed application to individual projects, we intend to issue formal statutory consultation under section 11 of the Electricity Act 1989 with a view implementing the licence changes by 1 April 2010.

Question box

Question 1: Do respondents have any comments on the principles or the proposed drafting of the legal text to give effect to our Final Proposals?

Proposed licence changes

4.1. This chapter seeks views on how we intend to reflect our Final Proposals in the TOs' licences.

4.2. We think that the licence changes should meet a number of principles:

- Provisions must be simple and transparent.
- Should be project specific, setting out capex and output measures. The capex information will be set for two years only to 31 March 2012.
- Allowed spend should be trued up in the light of progress made against the schedule of deliverables.
- Should list reporting procedures consistent with the RRP process.
- Should allow for a degree of flexibility in the event that there is material impact resulting from circumstances outside of the TOs' control, but the scope of such flexibility should be limited. Issues surrounding planning consent should constitute the main areas of flexibility, especially given the impact on the costs of achieving consents that may arise as a result of the IPC regime.
- Adjustments to the funding allowances need to be approved by Authority determination.

- Any request for adjusted funding should ensure an independent audit is undertaken, supported by relevant internal papers, tender information and relevant contracts.
- All adjustments to be applied to relevant construction costs contained within the licence, rather than applying a bolt on income adjusting event term.
- Incentivisation sharing factor should be the same as the current capex incentive sharing factor of 25%.
- Depreciation period is assumed to be 20 years and commence in the year following expenditure.
- Should include provision for additional projects to be added or existing projects amended subject to detailed conditions and following public consultation and determination by the Authority.

4.3. We intend to reflect the above by introducing a new special condition into NGET, SHETL and SPTL's transmission licences, as detailed in supplementary Appendix 9. This new special condition sets out our proposed capex allowances for construction and pre-construction in accordance with our final proposals. It also includes provisions to adjust the allowances we make using a modified form of an asset value adjusting event, which exists in the TIRG licence condition, if additional works are required as a condition of statutory planning consent.

4.4. The new special condition creates an additional term called TOInct which is an annual revenue figure for the relevant TO. The mechanism for the calculation of TOInct is described in the new Special Condition D11 ("Adjustment to the Transmission Network Revenue Restriction due to Transmission Asset Owner Incentives") for NGET and new Special Condition J12 ("Adjustment to the Transmission Network Revenue Restriction due to Transmission Asset Owner Incentives") for SHETL and SP Transmission. For the licensees to recover the investment associated with this term it has been inserted into the total revenue equations set out in NGET's Special Licence Condition D2 and SHETL's and SP Transmission's Special Licence Condition J2 ("Restriction of Transmission Network Revenue"). At this stage the text contained in supplementary Appendix 9 is in draft form and we intend to revisit several areas of the provisions between publication of this document and implementation.

4.5. Following this publication, we will produce a statutory licence consultation to formally propose under section 11 of the Electricity Act 1989 to amend the transmission licensees of the three TOs. Upon acceptance of the proposals in the statutory licence consultation, we will direct changes to the transmission licence to take effect from 1 April 2010.

5. Further work and way forward

Chapter Summary

We are not reaching a decision on all planned investments now. This chapter discusses future work to consider the remaining investment planned by the TOs and discusses the way forward, including our intention to implement licence changes by 1 April 2010.

Question box

Question 1: Do respondents have any views on the way forward?

Potential for further work

5.1. As discussed in chapter 1, we are phasing our work on funding the investment raised by the TOs and are not reaching a decision on all the planned investment as part of these Final Proposals. We highlighted that at later stage we may carry out further work to give further consideration to the remaining investment planned by the TOs.

Handling of new information

5.2. We expect that in the future additional relevant information may become available on individual projects that have been proposed by the TOs. We will consider how to assess such information when it is brought to our attention. In particular, we note that such information may trigger further assessment which may potentially lead to a different assessment outcome to the extent that the project is further advanced or the needs case more certain.

5.3. We have indications that we will receive further information in early 2010 in relation to a number of projects that the TOs have indicated could commence construction during 2010/11, but which are not sufficiently far advanced at this stage for us to complete our assessments. We propose to deal with such additional information on a case-by-case basis and may make further decisions about the provision of construction funding for relevant projects up to the end of TPCR4. This may potentially include provision of funding on a retrospective basis. We may similarly give further consideration to projects planned to commence construction later than 2010/11 but before TPCR5.

5.4. In the meantime we welcome views on our consultants' current assessment (discussed in chapter 2) of projects for which we are not providing construction funding at this stage.

Way forward

5.5. Chapter 3 of this Final Proposals document confirms our intended framework for funding additional investment within TPCR4, identifies the projects we intend to fund at this stage and sets out our proposed allowances for relevant projects up to end 2011/12. Chapter 5 discusses how we will take forward any further work to consider the remaining investment proposed by the TOs and to assess further information when it is brought to our attention.

5.6. To implement our Final Proposals, it is necessary to publish a statutory consultation on the proposed modifications to electricity transmission licences pursuant to section 11 and 11A of the Electricity Act 1989. In chapter 4 we set out a preliminary consultation on our proposed legal text. Subject to consultation responses, we intend to publish the statutory consultation in February with a view to implementing the licence changes by 1 April 2010.

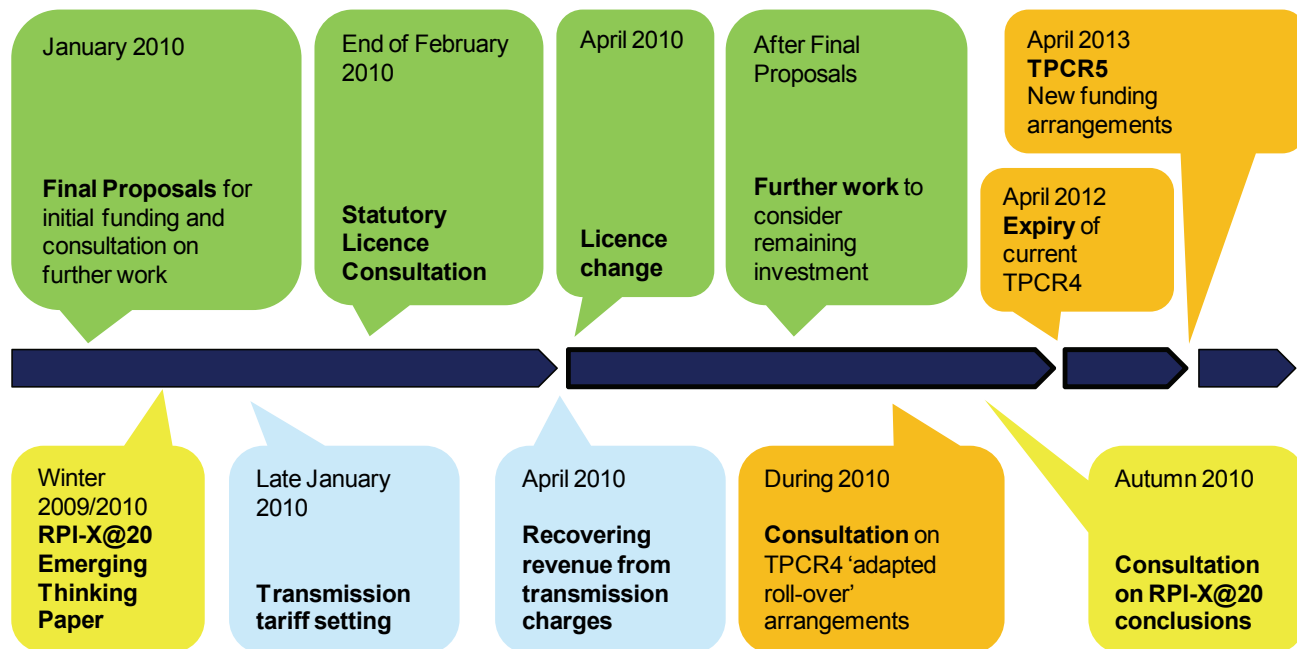
5.7. Our proposed way forward to implement our proposals is illustrated in the Figure below. We note that this timetable may allow the licence changes to take effect from 1 April 2010. We expect NGET to be able to take account of our final proposals in setting final 2010/11 TNUoS tariffs, due to be published at the end of January.

5.8. As discussed in Chapter 1, we are taking forward a separate work stream to consider licensing issues. Where such licensing issues apply it may not be possible to provide funding through the licence changes planned for April 2010 but through licence changes at a later date.

Responding to this document

5.9. We welcome your comments on the questions we posed in this document. Details on how to respond to this consultation document are set out in Appendix 1. **We have requested responses to this consultation by 16 February 2009.**

Figure 2: Way forward timeline



Appendices

Table A. 1: Appendices Index

Appendix	Name of Appendix	Page Number
1	Consultation response and questions	39
2	Summary of responses to Initial Proposals consultation	41
3	Updates on projects nominated for funding consideration	47
4	More detail on Consultants' assessments of projects	50
5	More information on RPI-X@20 Project	54
6	The Authority's powers and duties	56
7	Glossary	58
8	Feedback questionnaire	69

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.

5.10. Responses to this consultation should be received by 16 February 2010 and should be sent, preferably in electronic format by e-mail to

transmissionaccessreview@ofgem.gov.uk

or alternatively by post to:

Cheryl Mundie
Senior Manager - Transmission
Ofgem
Cornerstone
107 West Regent Street
Glasgow
G2 2BA.

1.3. 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.

1.4. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. Respondents are asked to put any confidential material in the appendices to their responses.

1.5. 1.6. Any questions on this document should, in the first instance, be directed to Cheryl Mundie (e-mail: cheryl.mundie@ofgem.gov.uk, tel: 0141 331 6003) or David Hunt (e-mail: david.hunt@ofgem.gov.uk, tel: 020 7901 7429).

CHAPTER: One

There are no questions in this chapter.

CHAPTER: Two

There are no questions in this chapter.

CHAPTER: Three

There are no questions in this chapter.

CHAPTER: Four

Question 1: Do respondents have any comments on the principles or the proposed drafting of the legal text to give effect to our Final Proposals?

CHAPTER: Five

Question 1: Do respondents have any views on the way forward?

Appendix 2 – Summary of responses to Initial Proposals consultation

1.1. This appendix provides more detail on the responses received to our Initial Proposals consultation. It follows the same structure as the questions asked in that document. We have also included comments made not in direct response to a question.

Chapter 1

1.2. There were no questions in this chapter.

Chapter 2

Question 1: Do respondents consider we have appropriately summarised the views of respondents to our September consultation?

1.3. Four respondents felt that Ofgem had appropriately summarised the views of respondents to our September consultation.

1.4. One respondent highlighted that an element of their response had been missed: specifically that reinforcements should be prioritised according to the extent to which they increase generation, increase constraint cost efficiency and improve competition.

1.5. Two respondents were concerned with the lack of mention of the Orkney link and felt its renewable energy potential was being overlooked.

Question 2: Do respondents have any comments on the initial findings of our consultants or views on the issues raised by the TOs?

1.6. One respondent supported Ofgem's initial view on three North Scotland projects and supported the proposal of re-considering other projects when new information becomes available. Another respondent commented that all projects likely to commence construction in TPCR4 should receive full funding to avoid potential constraint costs.

1.7. One respondent noted that two thirds of the total costs proposed involve offshore cabling. The respondent said that reserving these for TOs would exclude most of the UK's relevant expertise which isn't in the consumer's interest.

1.8. Seven respondents expressed concern towards Ofgem's consideration of individual projects' needs cases:

1.9. Five were concerned with Ofgem's consultants' assessment of the Western Isles link needs case. They argued that it has a strong needs case resulting from large renewable energy potential and from the number of projects currently in planning stages. One of these respondents asked Ofgem to consider whether opportunities for better meeting policy goals exist, suggesting that Ofgem look beyond current user commitment and place emphasis on cost-benefit assessments for new reinforcements to meet emerging need.

1.10. Another respondent was disappointed that the Orkney link was not proposed by TOs and subsequently not assessed by Ofgem's consultants. They urged for the Orkney link to receive pre-construction costs in TPCR4 especially if the period is extended.

1.11. The last of these respondents disagreed with Ofgem's consultants' assessments of need case, technical design and readiness for the SPTL-NGET interconnection and the Western HVDC link.

Chapter 3

Question 1: Do respondents have any comments on our proposed funding framework for additional investment within TPCR4?

1.12. Eight respondents were supportive of Ofgem's proposed funding framework for additional investment within TPCR4 although two of these showed concern for the proposed funding period. Two respondents commented that the proposals did not provide the certainty required for transmission infrastructure investment, also commenting that a year-by-year funding approach would "drip feed" TOs, remove their long-term planning ability and create difficulty in contracting suppliers.

1.13. One respondent recommended that a competitive regime should be extended to all self contained projects that are large enough to justify the cost of a tender, suggesting: substations, overhead lines, series capacitors, new cables and HVDC converter stations.

Question 2: Do respondents have any views on the appropriate funding mechanism for provision of pre-construction funding?

1.14. Six respondents agreed that pre-construction funding should be determined on an ex-ante basis. One of these respondents supported a funding mechanism with a revised incentive basis for TPCR4. Another proposed a competitive approach to pre-construction funding to accelerate the development of these projects.

1.15. Two respondents agreed that pre-construction costs should be funded as capex, one of these respondents reasoned that opex would have a significant effect on TNUoS tariffs.

1.16. One respondent disagreed that pre-construction costs should be treated as capex and should be allowed if cost efficient. Another respondent commented that opex would avoid financing issues, suggesting that financing revenues be received when investment commitments are made if preconstruction is to be treated as capex. The respondent suggested that Ofgem looks into a repex-style compromise.

Question 3: Do respondents have any views on our proposed approach to identifying projects eligible for construction funding?

1.17. Three respondents were supportive of assessment against the consultants' criteria to identify projects eligible for construction funding. Three respondents felt that progress towards an anticipatory approach was too slow.

1.18. Two respondents asked Ofgem to clarify how newly nominated projects or resubmitted projects (that currently have insufficient information for assessment) will be assessed. A different response suggested that construction costs are funded one year ahead at a time to allow new nominations.

1.19. One respondent suggested that projects are prioritised by user commitment. Five respondents were critical of the assessment of needs case in identifying projects eligible for funding. Three of these argued that basing needs case on contracted connections is flawed in respect to future potential generation; two highlighted the impact of cost of constraints and contributing towards policy objectives as drivers to invest.

Question 4: Do respondents have any views on our proposal to fund construction costs up to the end of TPCR4 for specific projects? Do respondents agree that it may be appropriate to provide funding up to an earlier end date for projects in certain circumstances?

1.20. Two respondents encouraged funding to the end of TPCR4 as they believe it allows time to review projects and will prevent multiple arrangements from operating at the same time. Another respondent agreed but suggested that project progress is reviewed annually for year-ahead funding.

1.21. Two further respondents argued that the proposal to fund projects up until the end of TPCR4 does not provide enough funding certainty for investors. One suggested that funding decision points align with milestones in contractual agreements with suppliers to avoid unnecessary costs and risk for TOs. The other respondent pointed out that revision arrangements in supplier contracts to permit variation and termination of contracts would only increase costs as suppliers take on the risk of uncertainty.

1.22. Three respondents did not agree with the uncertainty in the need for the Western Isles link and stated that it should be in the list of specific projects for funding up to the end of TPCR4.

Question 5: Do respondents agree that the same rate of return should apply as for other investment undertaken within TPCR4?

1.23. Six respondents agreed that the same rate of return should apply as for other investment undertaken in TPCR4. Three respondents also stated that they wish to maintain the 75:25 ratio of pass through to incentivised costs because they consider proposals to revise project funding for TPCR5 as risk exposure already for TOs. One of these respondents argued that, should the risk sharing factor be changed away from 75:25, the cost of capital allowance should also increase.

Question 6: Do respondents have any views on the appropriate treatment of projects beyond TPCR4 or on any interaction with our decision on the timing of TPCR5?

1.24. Three respondents signalled a need to use the same funding arrangements throughout the construction period for projects starting in TPCR4 and ending in TPCR5 to avoid financing costs and associated delays. One of these respondents suggested that this approach is also adopted for projects starting early in TPCR5.

1.25. Two additional respondents said that a review of project progress should be incorporated into Ofgem's TPCR5 work, one of these respondents commented that if the current price control was to be extended by a year then Ofgem should only consider extra funding up to 2012/13.

1.26. Three respondents commented that treatment of projects beyond TPCR4 should allow for the nomination of new projects including those of anticipatory nature.

1.27. One respondent expressed concern at the suggestion to extend TPCR4 to accommodate the results of RPI-X@20 project. The respondent was unconvinced that RPI-X@20 would meet this deadline and felt that the "framework and process" changes imply that it will make few significant changes for transmission company regulation.

Question 7: Do respondents have any comments on any other aspect of our Initial Proposals?

1.28. Two respondents were apprehensive about the proposal of conducting performance assessments halfway through the construction period because of the potentially negative effect it would have on contracting suppliers.

1.29. Two respondents urged Ofgem and its consultants to reconsider the needs case for the Western Isles link. The respondents also highlighted the option to enhance the capacity of this link through a £25m incremental spend.

1.30. In response to competition provision suggestions in our September consultation, one respondent commented that competition is already catered for in the construction phase, and that there is little evidence to suggest that there is a

large appetite for asset ownership. Another respondent was supportive of opening up suitable projects to competition arguing that consumers should reap the benefits of competition if they are funding the development work.

1.31. One respondent put forward their view that consumers will be exposed to far greater risk and financial consequences of insufficient investment in the transmission system than to the consequences of over-investing or investing too soon.

Chapter 4

Question 1: Do respondents have any views on our proposed approach for taking forward our work on TO incentives to facilitate further investment within the current transmission price control?

1.32. One respondent agreed with Ofgem's approach. Two respondents highlighted the urgency to publish Final Proposals and progress with Licence drafting to enable TNUoS charging calculations in January 2010. Another respondent welcomed recovery of TNUoS charges in the following year if they could not be determined before the start of 2010/11.

1.33. A further respondent asked Ofgem to consider linking the capital expenditure efficiency incentive to project milestones when assessing partially incomplete projects.

1.34. Three respondents urged Ofgem to continue investing in TPCR4 to maintain investment momentum for the anticipated increase in renewable generation in TPCR5. One respondent asked for preconstruction costs to be provided for the Orkney Isles link to keep the option of transmission investment in the area open.

1.35. One respondent recommended that the construction funding need for individual schemes be reconfirmed following the completion of the GB SQSS review.

Question 2: Do respondents have any views on our proposed consultation process going forward?

1.36. Two respondents requested for a key element of Ofgem's Final Proposals to set out how Ofgem intends to review projects in the future which are not funded or nominated for current TO Incentives work. Another respondent urged Ofgem to provide a stable, enduring funding framework which provides TOs with confidence to invest for longer than proposed in the Initial Proposals document. The respondent questioned the alignment with RPI-X@20 and the project's effect on TO Incentives.

1.37. One respondent highlighted their concern around the "Shetland Link offshore hub" and asked Ofgem to ensure that it wasn't a barrier to competition for Offshore Transmission Owners in the area.

1.38. Another respondent asked for draft licence conditions to be included in the Final Proposals document to allow industry sufficient time to comment before 1 April 2010.

1.39. Two respondents asked to meet Ofgem's consultants to aid informing the assessment of the Western Isles link.

Appendix 3 – Update on projects nominated for funding consideration

1.1. This appendix provides details of the latest TO cost estimates of all the projects identified by the TOs for funding consideration through our TO incentives work. This is set out in Table A.1 for pre-construction costs and in Table A.2 for construction costs.

1.2. Tables A.1 and A.2 also indicate the potential timing of the release of additional funding for each project under our proposed funding framework set out in Chapter 3. The provision of such funding for individual projects will be subject to the outcome of our ongoing review and efficiency assessment, to the extent practicable from the information provided by the TOs.

1.3. For the avoidance of doubt, the information set out in Table A.1 and A.2 is based on the TOs' submissions and is potentially subject to adjustment following the conclusion of our assessment.¹⁵

¹⁵ Tables A.1 and Table A.2 incorporate updated information received since we published our Initial Proposals consultation. National Grid submitted a change in cost breakdowns in 6 of their project proposals (covering 9 separate sub-projects), including a revised construction programme for the Bramford substation sub-project of the East Anglia scheme. This update produced a -£18.6m difference from NGET's costs submitted for our Initial Proposals paper. SPTL have updated their preconstruction funding requirements for the Hunterston-Kintyre link to cover an extra £0.5m over the period 2010/11 to end 2011/12. We await the split of costs between SHETL and SPTL; we currently list all remaining costs as SHETL's.

Table A. 2: Pre-construction costs and proposed approach of funding

TO	Project Name	Composite scheme description	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Total	
NGET	Anglo Scottish	Reconductor Harker-Hutton-Quernmore T circuits	0.5	2.0	1.5							4.0	
	Incremental	Series Compensation Harker-Hutton circuits	0.3	3.0	3.0	1.0						7.3	
	Central Wales	New Central Wales - Ironbridge 400 kV circuit	0.5	1.0	1.0	1.0	1.0						4.5
		New Central Wales Substation		0.2	0.8	1.0							2.0
	East Anglia	Reconductor Norwich Main-Walpole-Bramford	0.7	0.8									1.5
		Extend & reconfigure Bramford Substation	1.8	2.0	1.2	1.0							6.0
		2 Quadrature Boosters in Norwich - Walpole circuit	0.1	1.0									1.1
		New Bramford - Twinstead T 400kV OHL	0.4	2.1	2.0	2.0							6.5
	Eastern HVDC Link	Eastern Anglo-Scottish HVDC Link	0.2	0.8	1.4	0.2							2.5
		400kv substation at Hawthorn Pit and associated			0.2	0.8	2.0	2.0					5.0
	Humber	HVDC Link Humber-Walpole	0.3	1.5	3.2	5.0	3.0						13.0
		Substation works at Humber and Walpole		0.5	0.5	2.0	2.0						5.0
	London	Hackney to Waltham Cross 400kV upgrade	0.1	3.0	2.0								5.1
		Tilbury to Warley to Elstree 400kV upgrade							2.0				2.0
	North Wales	Second Pentir to Trawsfynydd 400 kV circuit	0.1	2.0	1.0	1.0							4.1
		Extension of Pentir 400kV substation		0.2	0.8	1.0	1.0						3.0
		Penisarwaun substation		0.2	0.8	1.0							2.0
		Replace SPT (Manweb) 132 kV circuits	0.1	1.0									1.1
		New Wylfa-Pentir circuit	0.7	1.6	2.8	1.4							6.5
		New Wylfa 400kV substation		0.2	0.8	2.0	2.0						5.0
		SComp Pentir-Deeside &Trawsfynydd-Treuddyn	0.2	0.2	1.0	1.0							2.4
		Reconductor Trawsfynydd-Treuddyn T 400kV	0.2	1.6									1.8
	South West	South West new line and reconductor	0.7	2.7	2.1	2.0	1.0						8.5
		South West new 400kV substation				1.0	1.5	1.5					4.0
	Western HVDC Link	New Deeside 400kV substation	0.6	0.7									1.3
		Western Anglo-Scottish HVDC Link (NGET/SPTL)	2.5	5.1	4.4								12.0
	SPTL	SPT-NGET interconnection	0.3	0.6	2.0								2.9
East Coast upgrade		0.2	0.4	1.3								1.9	
East-West upgrade		0.2	0.5	1.9								2.6	
Western HVDC Link (NGET/SPTL)		2.5	5.5	5.0								13.0	
Hunterston-Kintyre Link (SHETL/SPTL)			0.3	0.2								0.5	
SHETL	Knocknagael												
	Beaully-Blackhillock-Kintore	1.2	1.1									2.3	
	Western Isles link including Lewis infrastructure	0.4	0.0									0.4	
	Shetland link	0.4	0.3									0.7	
	Shetland link including offshore hub	0.6	1.1									1.6	
	Beaully-Dounreay	1.2										1.2	
	Eastern HVDC Link	0.2	0.8	2.8	0.3							4.1	
	Hunterston-Kintyre Link (SHETL/SPTL)	0.9										0.9	
Total costs expected to incur:													
NGET			10.0	33.2	30.5	24.4	13.5	3.5	2.0			117.1	
SPTL			3.2	7.3	10.4							20.9	
SHETL (incl. Shetland hub)			4.4	2.9	2.8	0.3						10.4	
Total			17.6	43.4	43.7	24.7	13.5	3.5	2.0			148.4	
Total costs TOs seek funding in addition to TPCR4 and short term measures:													
NGET				33.2	30.5	24.4	13.5	3.5	2.0			107.1	
SPTL				5.8	5.2							11.0	
SHETL				0.8	2.8	0.3						3.9	
Total				39.8	38.5	24.7	13.5	3.5	2.0			122.0	

Final proposals of funding mechanism and timing for costs above those already allowed in TPCR4 and incurred -

- in 2009/10: under TO Incentive short term measures from Apr 2009;
- in 2010/11: under TO Incentive funding proposals from April 2010;
- in 2011/12: under TO Incentive funding proposals from April 2011;
- in 2012/13: under one year adapted roll-over;
- in/> 2013/14: under new regime.

no colour not nominated for funding consideration.

Table A. 3: Construction costs and proposed approach of funding

TO	Project Name	Composite scheme description	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Total	
Anglo Scottish Incremental		Reconductor Harker-Hutton-Quemmore T circuits	0	0	30	45	23	0	0	0	0	98	
		Series Compensation Harker-Hutton circuits	0	0	17	28	20	8	0	0	0	73	
Central Wales		New Central Wales - Ironbridge 400 kV circuit	0	0	0	0	65	86	65	0	0	216	
		New Central Wales Substation	0	0	0	15	15	5	0	0	0	35	
East Anglia		Reconductor Norwich Main-Walpole-Bramford	0	10	48	30	10	0	0	0	0	98	
		Extend & reconfigure Bramford Substation	2	25	25	23	15	12	9	9	0	120	
		2 Quadrature Boosters in Norwich - Walpole	0	0	0	0	5	20	20	5	0	50	
Eastern HVDC Link		New Bramford - Twinstead T 400kV OHL	0	0	0	5	25	30	25	0	0	85	
		Eastern Anglo-Scottish HVDC Link	0	0	0	0	0	69	104	104	69	346	
Humber		400kv substation at Hawthorn Pit and associated	0	0	0	0	0	15	25	25	10	75	
		HVDC Link Humber-Walpole	0	0	0	0	15	125	125	120	0	385	
London		Substation works at Humber and Walpole	0	0	0	0	30	50	50	20	0	150	
		Hackney to Waltham Cross 400kV upgrade	0	0	4	52	70	43	9	0	0	179	
North Wales		Tilbury to Warley to Elstree 400kV upgrade	0	0	0	0	0	0	0	0	0	0	
		Second Pentir to Trawsfynydd 400 kV circuit	0	0	0	16	30	27	10	0	0	83	
		Extension of Pentir 400kV substation	0	0	0	0	10	10	5	0	0	25	
		Penisarwaun substation	0	0	0	5	5	2	0	0	0	12	
		Replace SPT (Manweb) 132 kV circuits	0	0	5	6	5	2	0	0	0	18	
		New Wylfa-Pentir circuit	0	0	0	10	30	30	20	5	0	95	
		New Wylfa 400kV substation	0	0	0	0	15	25	25	10	0	75	
South West		SComp Pentir-Deeside &Trawsfynydd-Treuddyn	0	0	0	5	14	14	10	5	0	48	
		Reconductor Trawsfynydd-Treuddyn T 400kV	0	0	18	35	8	0	0	0	0	61	
Western HVDC Link		South West new line and reconductor	0	0	0	8	70	85	30	5	0	198	
		South West new 400kV substation	0	0	0	0	20	25	25	5	0	75	
SPTL		New Deeside 400kV substation	0	20	22	24	23	14	2	0	0	106	
		Western Anglo-Scottish HVDC Link (NGET/SPTL)	0	0	25	49	84	81	35	0	0	274	
SPTL		SPT-NGET interconnection	0	5	15	27	27	11	0	0	0	85	
		East Coast upgrade	0	0	7	24	43	42	19	0	0	135	
		East-West upgrade	0	0	8	14	24	24	10	0	0	80	
		Western HVDC Link - HVDC construction (NGET/SPTL)	0	0	25	49	84	81	36	0	0	275	
		Western HVDC Link - indicative onshore works	0	0	0	25	42	40	18	0	0	125	
SHETL		Hunterston-Kintyre Link (SHETL/SPTL)	<i>(cost entered in SHETL's row only)</i>										
		Knocknagael	6	25	10	0	0	0	0	0	0	0	41
		Beaully-Blackhillock-Kintore	5	13	3	11	36	12	0	0	0	0	81
		Western Isles link including Lewis infrastructure	8	102	106	75	11	0	0	0	0	0	302
		Shetland link	0	124	118	191	99	16	0	0	0	0	547
		Shetland link including offshore hub	0	153	159	237	112	16	0	0	0	0	677
		Beaully-Dounreay	0	21	24	26	0	0	0	0	0	0	71
		Eastern HVDC Link	0	0	0	0	0	0	0	0	0	0	0
SHETL		Hunterston-Kintyre Link (SHETL/SPTL)	0	23	35	37	28	0	0	0	0	122	
		NGET	2	55	195	357	606	778	594	313	79	2979	
SHETL		SPTL	0	5	55	139	220	198	83	0	0	700	
		SHETL (incl. offshore hub)	19	336	337	386	187	28	0	0	0	1294	
Total			21	397	587	882	1013	1004	677	313	79	4973	

Final proposal of funding mechanism and timing for costs above those already allowed in TPCR4 and incurred -

Projects we are funding now

by 2010/11:	under TO Incentives from Apr 2010;
in 2011/12:	under TO Incentives from Apr 2011;
in 2012/13:	under one year adapted roll-over;
in/> 2013/14:	under new regime.

Projects that we will reach a decision on at a later date

by 2010/11:	may be funded under TO Incentives after April 2010 subject to further work;
in 2011/12:	may be funded under TO Incentive after Apr 2011 subject to further work;
in 2012/13:	under one year adapted rollover;
in/> 2013/14:	under new regime.

Appendix 4 – More Detail on Consultants’ Assessment of Projects

This Appendix summarises the findings of the assessment undertaken by our consultants (KEMA and PB).

The consultants have used “traffic-light” symbols to indicate their view of project nominations against their specified criteria. Both consultants use a green dot (●) to represent their view of “high/strong” and a red dot (●) to represent “low/weak”. These tables represent the consultants’ current views on projects from information submitted to Ofgem to date.

PB have also produced the following key to be referred to for a more detailed description of their view on current project status:

Table A. 4: Project assessment key

Deliverability	Design	Costs
● Consents already obtained or are not required	● Design firm	● Cost estimates are considered to be reasonable, reflecting content, quantities and market prices.
● Consents required but are not expected to be problematical	● Some design decisions required but may be addressed in the near future and the impact on cost may already be known	● Cost estimate considered reasonable but may be updated in short term
● Consents required and may cause a delay to the programme	● Design decisions will be addressed over a period of time and may influence cost of project	● Estimate not firm and may change with development

Table A. 5: Projects for which we propose to fund construction costs at this stage

TO	Project name	Sub-project name	PB Summary Results			KEMA Summary		
			Deliverability	Design	Costs	Certainty of need	Certainty of timing	Appropriateness of Scope
NGET	East Anglia	Reconductor Walpole-Norwich, Norwich-Bramford 400kV	● This work is deliverable within the planned time scale	● The reconductoring proposals appear sound	● Cost estimates are considered to be reasonable			
NGET	East Anglia	Bramford 400kV substation	● Wayleaves are yet to be negotiated. The project should be clear to construct in early 2010.	● The design of the substation is conventional with no addition to the minimum scope to meet objectives.	● Cost estimates are considered to be reasonable	●	● ●	●
NGET	Western HVDC link	Deeside 400kV substation replacement	● It should be possible to commence construction in early 2011.	● Design and scope are considered appropriate	● Cost estimates are considered to be reasonable	● ●	●	●
SPTL	SPTL-NGET interconnection		● The enabling works at Eccles can proceed subject to landowner consent which should be achievable. The programme has allowed for additional time to acquire consents at 2 locations. Otherwise, subject to clearing the necessary consents, the programme looks tight but feasible.	● With the exception of Strathaven, only feasibility layout drawings or drawings issued for discussion are currently available.	● ● We consider that SPT's estimated costs for the Eccles enabling works are reasonable. The main contract costs are reasonable at this stage but we would expect costs to vary as the design becomes more established.	● ●	●	●
SHETL	Knocknagael		● The work should be considered cleared to proceed to construction.	● The substation is to be built to a 400kV specification to facilitate future upgrading.	● Cost estimates are considered to be reasonable	●	●	●
SHETL	Beaully-Blackhillock-Kintore		● The work should be considered cleared to proceed to construction.	● The conductor selection is appropriate.	● The costs for this project are considered reasonable. The project is to be implemented in phases.	●	●	● ●
SHETL	Beaully-Dounreay	Dounreay Substation Reinforcement	● Subject to planning approval and wayleaves being obtained in 2010, the construction programme looks achievable. Consents are not expected to be problematical.	● It is noted that there is a large degree of asset replacement benefit from this scheme.	● Cost estimates appear to be reasonable.	●	●	●
SHETL	Beaully-Dounreay	Beaully-Dounreay Reconductoring	● The work should be considered cleared to proceed to construction.	● The conductor selection is appropriate subject to satisfactory completion of tests.	● Cost estimates are considered to be reasonable but these will be updated after tender evaluation.			

Table A. 6: Further projects planned to commence construction from 2010/11

TO	Project name	Sub-project name	PB Summary Results			KEMA Summary		
			Deliverability	Design	Costs	Certainty of need	Certainty of timing	Appropriateness of Scope
NGET	Anglo-Scottish incremental works	Reconductor Harker-Hutton-Quernmore Tee 400kV	● There are no consents issues.	● Re-conducting with high temperature "GAP" type conductors appears reasonable in order to obtain a higher thermal rating.	● Cost estimates are considered to be reasonable.			
NGET	Anglo-Scottish incremental works	Series Compensation Harker-Hutton 400kV circuits	● The outline programme should be achievable subject to consents being received in time.	● No information is currently available other than to "install 2 x 300MVA series capacitor banks" and that some of this compensation might be variable thyristor controlled series compensation.	● NGET's estimated costs are higher than what we would expect from the limited information provided by NGET. However without further details on the capacity of such variable compensation, we are unable to comment further.	● ●	●	●
NGET	Western HVDC link	Western Anglo-Scottish HVDC submarine link	● The outline programme may be achievable but subject to many factors working in SPT/NGET favour.	● Design is not yet firm.	● Overall our estimated costs are higher than those of the TOs and we would expect these costs to increase as further design and exploratory work (including a survey of the seabed) proceeds.	● ●	●	●
SPTL	Western HVDC link	Indicative Onshore works						
SPTL	Hunterston-Kintyre link		● The consents process appears to be problematical and a new site for Cour substation is being sought.	● The maximum available cable size currently available is being installed.	● SHETL's estimated costs are reasonable but would caution that the subsea cable element (£79.6 million out of a total construction cost of £121.9 million) is based on an average cost and could subsequently vary. Additional information (including SHETL's technical report, cost-benefit analysis and an update to the project costs paper) will be submitted in early 2010.	●	●	●
SHETL	Western Isles link incl Lewis infrastructure	Western Isles link	● Deliverability depends on a decision on the rating of the link and clearance of consents for Beauly substation works, once the Beauly-Denny decision is declared.	● The design concept is considered sound but major decisions have to be taken before this can be progressed.	● Cost estimates prepared are considered reasonable but subject to revision when design decisions taken. Additional information will be provided in Spring 2010	●	●	●
SHETL	Western Isles link incl Lewis infrastructure	Lewis Infrastructure	● Assuming consents are cleared in 2010, the construction of the circuits and substation works could take place between May 2011 and Jan 2013.	● A decision on the type of circuit, overland or undersea, has yet to be taken.	● Costs will depend on design decisions. We would consider the cost estimate for the land based option to be reasonable. A further submission in spring 2010 will update the estimated cost.	●	●	●
SHETL	Shetland link		● Consents are still outstanding.	● Decisions on Baseline (direct link from Shetland to mainland) or Incremental Project (link with an off-shore hub) are still required.	● We find SHETL's estimated costs for the Baseline and Incremental Projects to be reasonable. We also note SHETL's intention to submit additional detailed information in January 2010.	●	●	●
SHETL	Shetland offshore hub							

Table A. 7: Projects planned to commence construction later than 2010/11 (continued on the next page)

TO	Project name	Sub-project name	PB Summary Results			KEMA Summary		
			Deliverability	Design	Costs	Certainty of need	Certainty of timing	Appropriateness of Scope
NGET	Central Wales	New Central Wales-Ironbridge 400kV circuit	Phase 2b	Phase 2b	Phase 2b	●	●●	●
NGET	Central Wales	New Central Wales Substation	Phase 2b	Phase 2b	Phase 2b			
NGET	East Anglia	Quadrature Boosters Norwich-Walpole circuit	Phase 2b	Phase 2b	Phase 2b	●	●●	●
NGET	East Anglia	400kV OHL circuit Bramford-Twinstead Tee	Phase 2b	Phase 2b	Phase 2b			
NGET	Eastern HVDC link	Eastern Anglo-Scottish HVDC submarine Link	Phase 2b	Phase 2b	Phase 2b			
SHE TL	Eastern HVDC link	Eastern Anglo-Scottish HVDC submarine Link	Phase 2b	Phase 2b	Phase 2b	●●	●	●
NGET	Eastern HVDC link	400kV substation at Hawthorn Pit	Phase 2b	Phase 2b	Phase 2b			
NGET	Humber	HVDC Link Humber-Walpole	Phase 2b	Phase 2b	Phase 2b	●	●	●
NGET	Humber	Substation works Humber-Walpole	Phase 2b	Phase 2b	Phase 2b			
NGET	London	Hackney-Waltham Cross 400kV upgrade	● With planning approval progressed by the IPC in 2012 and with materials ordering in 2013, this project should be deliverable by 2015/16.	● Detailed engineering will commence in 2010	● We are able to account for only about £160m of the estimated £183.6m of capital expenditure. As NGET develops its design the estimated costs are likely to vary, if not increase.	●	●	●●
NGET	London	Tilbury-Warley-Elstree 400kV upgrade	Phase 2b	Phase 2b	Phase 2b			

Table A. 8: Projects planned to commence construction later than 2010/11 (continued)

Project name	Sub-project name	PB Summary Results			KEMA Summary		
		Deliverability	Design	Costs	Certainty of need	Certainty of timing	Appropriateness of Scope
North Wales	2nd Pentir-Trawsfynydd 400kV circuit	Phase 2b	Phase 2b	Phase 2b			
North Wales	Extension of Pentir 400kV substation	Phase 2b	Phase 2b	Phase 2b			
North Wales	Penisarwaun substation	Phase 2b	Phase 2b	Phase 2b			
North Wales	Replace SPT Manweb 132kV circuits	● ✘ Not assessable at present.	● ✘ The concept is satisfactory but little detail is available	● Costs are considered to be reasonable			
North Wales	New Wylfa to Pentir circuit	Phase 2b	Phase 2b	Phase 2b	●	●	● ●
North Wales	New Wylfa 400kV substation	Phase 2b	Phase 2b	Phase 2b			
North Wales	Series Compensation Pentir to Deeside, Trawsfynydd to Treuddyn	Phase 2b	Phase 2b	Phase 2b			
North Wales	Reconductor Trawsfynydd to Treuddyn Tee 400kV circuit	● ✘ A detailed programme will be prepared in April 2010.	● ✘ The proposed reconductoring with GTZACSR 2 x 600mm ² conductor is appropriate.	● ✘ Cost estimates are considered to be reasonable.			
South West	SW new line and reconductor	Phase 2b	Phase 2b	Phase 2b	●	●	●
South West	SW new 400kV substation	Phase 2b	Phase 2b	Phase 2b			
East Coast upgrade		● ✘ Obtaining consents may delay the programme.	● ✘ Final substation sites have not yet been selected and it has not yet been established whether the condition of the conductor was sufficiently good to avoid re-conductoring the route.	● ✘ Estimated costs are likely to increase.	● ●	●	● ●
East-West upgrade		● ✘ SPT still consider that planning and consents for the works associated with Wishaw have the potential to delay the programme.	● A general description of the work only has been provided. No data has been provided on the required increase in capacity.	● ✘ We consider the forecast costs to be high.	● ●	●	●

Appendix 5 – More Information on RPI-X@20 Project

Introduction

1.1. A key area of interaction with our work to develop arrangements for anticipatory investment under TAR is the “RPI-X@20” review - a major two year project, initiated by Ofgem in March 2008. It is reviewing the workings of the current approach to regulating GB’s energy networks and developing recommendations for future policy.

1.2. Our work under TAR is focussed on the arrangements to apply to anticipatory investments within the current price control period, i.e. TPCR4, while the RPI-X@20 project, which is looking more fundamentally at the current approach to network regulation, will develop recommendations for the way we regulate in the future.

1.3. This Appendix provides more information on the RPI-X@20 project.

The rationale underpinning RPI-X@20

1.4. While we recognise that RPI-X regulation has delivered significantly lower prices, better service quality and better network reliability since its implementation, we think that it is prudent to undertake a review now for a number of reasons. First, as a matter of good housekeeping, it is right that after 20 years we assess whether the approach remains fit for purpose. Second, the challenges faced by the energy industry have changed, with the emphasis now on facilitating efficient investment to achieve environmental targets and ensure security of supply as well as on the achievement of efficiency gains. Finally, over time RPI-X has become more complex and, if possible, it may be beneficial to simplify the framework to allow customers and companies to effectively engage in price control processes.

Guiding principles for RPI-X@20

1.5. We don’t intend to implement change for changes sake and amendments to the current regime will only be made where there are clear benefits. There are a number of further guiding principles to which we are following as part of the RPI-X@20 review including:

- **Consultation:** We are consulting widely with stakeholders through a range of forums including stakeholder workshops, meetings and formal consultation documents. Also through other methods such as the web forum we have developed which provides stakeholders with the opportunity to post papers or thoughts regarding RPI-X@20 on the Ofgem website and through the working groups that have been established. The use of this range of consultative tools allows stakeholders many opportunities to engage in and contribute to the overall review.

-
- **Transparency:** We are being transparent in the way we undertake this project and will continue to do so in the way we arrive at conclusions and recommendations. Our consultative approach should help to facilitate this.
 - **Better Regulation:** We are following a process and intend our conclusions to be consistent with the Better Regulation principles. **No surprises:** We are adopting a transparent approach to the RPI-X@20 review to ensure that stakeholders are aware of the direction of Ofgem's thinking and the rationale that will underpin the recommendations that we take to the Authority. There should not therefore be any surprises for stakeholders.
 - **No retrospective action:** We understand the importance of maintaining regulatory certainty and therefore are keen to make clear that RPI-X@20 will be focussed upon the framework for future regulation of energy networks rather than reconsideration of any decisions taken in the past.
 - **No stranding of efficient investment:** Where efficient investment has been undertaken by network companies, suitable funding arrangements will be incorporated within any framework that may be adopted following the recommendations of the review.

Progress of RPI-X@20

1.6. We published our "Principles, Process and Issues" consultation paper in February 2009. Since then we have published a number of working papers in different policy areas designed to inform on our early thinking and provoke debate. We have also published a number of consultant reports and other materials. We are due to publish our "Emerging Thinking" shortly. This "Emerging Thinking" consultation will set out our vision for the future regulatory framework. We will continue to engage with stakeholders and interested parties as our thinking progresses. Our final recommendations will be made to GEMA in summer 2010 and a decision consulted on in Autumn 2010.

1.7. In our February 2009 consultation, and in our recent working papers, we have signalled the need for the regulatory framework to encourage networks to focus on the needs of existing and future consumers. This will involve facilitating delivery of a sustainable energy sector and value for money for existing and future consumers. Our Emerging Thinking will set out our vision for a framework that is designed to deliver these outcomes as well as how the core framework may need to alter in relation to different networks across gas and electricity, transmission and distribution.

Appendix 6 – 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.¹⁶

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 accordingly¹⁷.

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 existing and future consumers, 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 them¹⁸;
- the need to contribute to the achievement of sustainable development; and
- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.¹⁹

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:

¹⁶ entitled “Gas Supply” and “Electricity Supply” respectively.

¹⁷ 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.

¹⁸ 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.

¹⁹ The Authority may have regard to other descriptions of consumers.

-
- promote efficiency and economy on the part of those licensed²⁰ 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; 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 Regulation²¹ 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.

²⁰ or persons authorised by exemptions to carry on any activity.

²¹ Council Regulation (EC) 1/2003.

Appendix 7 - Glossary

A

Access Rights

The rights to flow specified volume of electricity, usually from a specified location (node or zone) to an explicitly or implicitly defined destination (e.g. market hub), and for a defined period. For firm access rights, a failure to deliver access due to insufficient network capacity is associated with financial compensation. For non-firm access rights, the flow is terminated without compensation when capacity is unavailable.

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

Baseline

Baselines define the reference levels of capacity that the transmission licensee is to release. Baselines also determine the levels above (or below) which incremental capacity is defined.

Baseline Capital Expenditure

Baseline capital expenditure is the total amount of capex required in association with the baseline. It includes both load related capex and non-related capex.

British Electricity Trading and Transmission Arrangements (BETTA)

The arrangements for the trading and transmission of electricity across Great Britain which are provided for by Chapter 1 of Part 3 of the Energy Act 2004, which have replaced the separate trading and transmission arrangements which existed prior to 1 April 2005 in Scotland and in England and Wales. 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

Capital Expenditure (Capex)

Expenditure on investment in long-lived transmission assets, such as gas pipelines or electricity overhead lines.

Connection Entry Capacity (CEC)

A measure of the maximum capability, expressed in MW, of a connection site and the associated generation units' connection to the transmission system.

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 National Grid in relation to their connection to and use of the transmission system.

Consents

The process of obtaining Consents for the construction of a new overhead line to serve, for example, a wind farm can essentially be broken down into two distinct areas. Consents to be obtained from the Secretary of State/ Planning authorities etc in relation to permission allowing a line to be built and secondly, and more practically, consents from landowners who will be affected by the construction of the new line. For a new line consent under section 37 of the 1989 Act will be required.

In addition to section 37 consent, the DNO/TO must also obtain consent from the landowners over whose land the line will run. If a voluntary agreement cannot be struck, then either the land will have to be compulsorily purchased, under the provisions of section 10 and Schedule 3 (which is usually used for substations), or a Necessary Wayleave obtained over it, under the provisions of section 10 (Schedule 4 paragraphs 6-8).

Constraints

In the event that the pattern of generation may exceed the safe operational limits of a particular line or transmission system equipment, the GBSO will take actions to reduce the output of generators at specific locations on the system. At present these actions are taken in the Balancing Mechanism in the form of bids, and also via ancillary services, such as Pre-Gate Closure Balancing Mechanism Unit Transactions (PGBTs). Where a user's output is constrained down at a point on the system, the overall balance of energy will need to be retained, and costs will be incurred by the GBSO in bringing replacement energy onto the system.

Contracted background

This is the planning background against which National Grid assesses applications for connection and use of system. The contracted background includes all users that have entered into an (ongoing) agreement with National Grid for connection or use of system.

D

Deep reinforcement

Deep reinforcement refers to the works conducted on the wider transmission system in order to accommodate a change in the generation and demand pattern.

G

National Electricity Transmission System Operator (NETSO)

The entity responsible for operating the GB transmission system, onshore and offshore, and for entering into contracts with those who want to connect to and/or use the GB transmission system. National Grid is the NETSO.

GB Transmission System

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

K

Kilowatt (kW)/Megawatt (MW)/Gigawatt (GW)

A kW is the standard unit of electricity, roughly equivalent to the power output of a one-bar electric fire. A MW is a thousand kilowatts. A GW is a thousand megawatts.

Kilowatt hour (kWh)/Megawatt hour (MWh)/Gigawatt hour (GWh)

One kilowatt hour is the amount of electricity expended by a one kilowatt watt load drawing power for one hour. A MWh is a thousand kilowatt hours. A GWh is a thousand megawatt hours.

L

Load Related Capex

The installation of new assets to accommodate changes in the level or pattern of electricity or gas supply and demand.

Long-run marginal costs (LRMC)

In the context of electricity transmission, long-run marginal costs are the marginal costs of establishing and using network capacity. They include, for example, marginal costs for network reinforcement, as well as resulting network losses and residual congestion costs.

Local works

Those works required to provide a generator with a connection to the transmission network that would enable it to export power.

N

National Grid Electricity Transmission (NGET)

The electricity transmission licensee in England & Wales.

Non-Load Related Capex

The replacement or refurbishment of assets which are either at the end of their useful life due to their age or condition, or need to be replaced on safety or environmental grounds.

O

Operating Expenditure (Opex)

The costs of the day to day operation of the network such as staff costs, repairs and maintenance expenditures, and overhead.

R

Regulatory Asset Value (RAV)

The value ascribed by Ofgem to the capital employed in the licensee's regulated transmission or (as the case may be) distribution business (the 'regulated asset base'). The RAV is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. These vary between classes of licensee. A deduction is also made in certain cases to reflect the value realised from the disposal of assets comprised in the regulatory asset base. The RAV is indexed to RPI in order to allow for the effects of inflation on the licensee's capital stock. The revenues licensees are allowed to earn under their price controls include allowances for the regulatory depreciation and also for the return investors are estimated to require to provide the capital.

RPI-X

The form of price control currently applied to network monopolies. Each company is given a revenue allowance in the first year of each control period. The price control then specifies that in each subsequent year the allowance will move by 'X' per cent in real terms.

Re-openers

A process undertaken by Ofgem to re-set the revenue allowances (or the parameters that give rise to revenue allowances) under a price control before the scheduled next formal review date for the relevant price control.

Revenue Driver

A means of linking revenue allowances under a price control to specific measurable events which are considered to influence costs. An example might be to allow a specified additional revenue allowance for each MW of new generation connecting to the network. Revenue drivers are used by Ofgem to increase the accuracy of the revenue allowances.

S

Safety net

A mechanism that would trigger a review of allowances in the event of a major shortfall of investment relative to allowances.

Security and Quality of Supply Standard (SQSS)

As referred to in the electricity Transmission Licence Standard Conditions C17 and D3, this is the standard in accordance with which the electricity transmission licensees shall plan, develop and operate the transmission system.

Scottish Hydro-Electric Transmission Limited (SHETL)

The electricity transmission licensee in northern Scotland.

Scottish Power Transmission Limited (SPTL)

The electricity transmission licensee in southern Scotland.

Sliding scale

This term is used generically to describe incentive schemes which involve profit (and loss) sharing around a fixed target costs, such as the current form of SO incentives in gas and electricity.

T

Transmission Asset Owner (TO)

There are three separate transmission systems in Great Britain, owned by three Transmission Asset Owners, National Grid Electricity Transmission plc, Scottish Hydro Electric Transmission Ltd and Scottish Power Transmission Ltd. National Grid also has the role of system across the whole of Great Britain.

Transmission Entry Capacity (TEC)

Defines a generator's maximum allowed export capacity onto the GB transmission system. The holder of the TEC has the right to export the specified number of megawatts onto the transmission system at any one time, and is eligible for compensation if NGET cannot accommodate this export on the network.

Transmission Investment for Renewable Generation (TIRG)

In the context of this document, this means the regulatory mechanisms developed before the start of the next main price control in 2007, to fund a number of specific network enhancement projects required to provide transmission capacity for new renewable generation plants.

Transmission Owners (TO)

Companies which hold transmission owner licenses. Currently there are three electricity TOs; NGET, SPTL and SHETL. NGG NTS is the gas TO.

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, SPTL, SHETL and to the licensed gas transporter responsible for the gas transmission system, NGG NTS

Transmission Network Use of System (TNUoS) charges

Charges that allow National Grid to recover the costs of providing and maintaining the assets that constitute the GB transmission system.

U

Unit Cost Allowance (UCA)

A parameter of the revenue drivers for the three TOs. For SHETL and SP Transmission the local works revenue drivers uses a £ per MW funding allowance, and for NGET both the local and deep revenue drivers use a £ per MW funding allowance. Funding allowances that increase or decrease expenditure entitlements by a set amount for each MW above or below baseline assumptions are UCAs.

W

Weighted Average Cost of Capital (WACC)

The weighted average of the expected cost of equity and the expected cost of debt.

Wider Works (WW)

The transmission works identified for a given generator which comprise deep reinforcement works required to provide capacity to support the additional generation coming online.

Appendix 8 - 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