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23 November 2010

Dear Stuart,

### **PROJECT TRANSMIT: A CALL FOR EVIDENCE**

ScottishPower and ScottishPower Renewables welcome Ofgem's independent and open review of transmission charging and associated connection arrangements with the aim of ensuring that arrangements are in place to facilitate the timely move to a low carbon energy sector whilst continuing to provide safe, secure, high quality network services at value for money to existing and future consumers.

In order to assist in this debate, we commissioned Oxera to provide a thorough report entitled *Principles and priorities for transmission charging reform* ("the Oxera Report") which is annexed to our response to the Call for Evidence. In the light of that report and our own analysis we believe that the current system of transmission charging is no longer fit for purpose, for the following principal reasons:

- (a) as a result of energy policy objectives, in particular obligations at UK level on a low carbon economy and at EU level on renewables, there is a strong focus on renewables, nuclear and carbon capture and storage (CCS) for future electricity supplies: none of these types of plant are well adapted to respond to the existing signals. The current system is therefore unlikely to be achieving significant savings in transmission costs;
- (b) the current system is proving a significant obstacle to the full exploitation of the onshore wind resource in Great Britain. The Oxera Report calculates that up to an additional 4 TWh/year of onshore wind could be developed if the existing system were replaced by a postage stamp approach. This is equivalent to the entire output from onshore wind farms in the UK in 2006;
- (c) the current system is applying a substantial additional cost to Longannet Power Station which is signalling that that plant should opt out of the Industrial Emissions Directive rather than invest in life extension. This could be a serious obstacle to the early demonstration of CCS; and
- (d) far from saving consumers money, it is likely to be costing them more. The Oxera Report calculates that once the UK's renewables targets are hit, an additional 4 TWh of onshore wind would save UK consumers £164 million

(2009 money) each year by displacing more expensive renewable options. It also calculates that early closure of Longannet caused by locational charges could lead to an additional consumer cost of around £300 million.

In addition, recent developments are progressively undermining the current system's aim of seeking to apply locational charges which are cost reflective. National Grid has recently recommended that costs associated with the loss of a large generating unit (in practice, a new nuclear power station going offline) should be spread across all users and not targeted back to the large unit. Ofgem has also recently approved a change to the charging methodology removing interconnectors from paying any charges. DECC recently approved the Connect & Manage access regime with any additional constraint costs socialised across all users.

We therefore believe there is an urgent need to reduce or remove the strong locational charging signals for electricity transmission throughout Great Britain. We are open to the possibility of utilising the 'Significant Code Review' (SCR) process to consider transmission charging, but think that further consideration is needed as to whether that particular process would improve the speed of the review and longevity of its conclusions, given that work is already under way using TransmiT's own process. In any event, the process for change should focus on finding a simple but effective solution and will almost certainly require amendment of National Grid's charging licence objectives.

Our detailed response to the Call for Evidence is attached together with the Oxera Report. Our response uses the headings outlined in your consultation and is in two sections:

- Section 1 outlines the case for reform of the existing locational transmission charging arrangements in relation to GB electricity generation;
- Section 2 focuses on the range of potential policy reforms to ensure an enduring transmission charging model, highlighting some of the actions and decisions required to achieve this objective.

I hope you find our input and the Oxera Report useful. I would like to suggest that we meet at a convenient point to discuss this material, but in the meantime if you have any queries on the points raised, please feel free to contact me.

Yours sincerely,



**Rupert Steele**  
Director of Regulation

## Response to Call for Evidence

### SECTION 1 – THE CASE FOR REFORM OF ELECTRICITY TRANSMISSION CHARGING

#### Introduction

##### *Project TransmiT Objectives*

We support the objectives for Project TransmiT to ensure that arrangements are in place to facilitate the timely move to a low carbon energy sector whilst continuing to provide safe, secure, high quality network services at value for money to existing and future consumers.

The existing objectives for transmission charging are strongly focussed on cost reflectivity. While in a free market, not constrained by policy objectives, this may be appropriate, it is not evident that such a narrow focus achieves either the policy objectives or indeed the lowest costs when the market is constrained by Government policy choices. The objectives of the Project TransmiT review seem well framed to focus on examining this issue and proposing appropriate changes.

Changes to generation mix and the electricity transmission network will place further stress on the electricity transmission charging arrangements for generators. In particular the approval of £4.7bn of investment identified as part of the work undertaken by the Electricity Networks Strategy Group (ENSG), including new HVDC sub-sea cables, could dramatically increase the charges faced by generators using these links to transport their power to the GB demand centre. In addition, a desire to increase integration of energy markets and harmonisation of transmission access and charging across Europe could have a direct impact on the arrangements in place in GB.

These changes are likely to have a significant effect on the economics of new generation projects that are at an advanced stage of development, potentially causing investment decisions to be reconsidered and the stability of the UK framework for investment to be called into question. This in turn could impede the development of market leading industries in the development of offshore wind, tidal and marine generation technologies and lead to the UK missing a once in a generation opportunity to develop a world leading capability in CCS.

We therefore believe there is now an urgent need to critically assess the robustness of the current electricity transmission charging arrangements and consider whether they will best support achievement of UK energy policy ambitions.

##### *Challenges with the existing generator charging arrangements*

#### **1. The locational charging model is no longer fit for purpose**

Whilst the locational charging principles could be seen to facilitate efficient investment in transmission infrastructure historically, it is clear that these signals will in future be ineffective in influencing the location decisions of most new power generation projects.

Over the next ten to fifteen years the Great Britain energy landscape is expected to change dramatically to deliver the UK's decarbonisation agenda and address concerns over our long-term energy security. In particular, the shape of our power generation mix will fundamentally change, with closure of many coal and oil plants, replacement of nuclear power stations and a significant increase in power generated from renewable energy.

To facilitate the new shape of the UK power sector, the electricity transmission network will also face unprecedented change, requiring a substantial grid investment programme to enhance the onshore grid and to build a new grid offshore, with potentially increased connection to other European electricity networks.

These generation and grid investments are predominately required to facilitate delivery of overarching energy policy objectives, principally in relation to climate change mitigation and legally binding targets for renewable energy. Such targets imply that these investments have broad societal benefits and as such the costs should be shared equitably across all users of the transmission system.

Figure 1 below indicates the extent to which we consider that TNUoS charges can provide a meaningful signal as respects siting decisions. For most low carbon technologies, it concludes that the signal is outweighed by other factors and cannot be acted upon in any meaningful way.

**Figure 1**

Ability to respond to the locational signal

<u>Technology</u>	<u>Ability to respond</u>
Renewables	x
Nuclear	x
Clean Coal / CCS	x
CCGT	✓*
Hydro	x
Pump storage	x
Biomass	✓*

\* CCGT and biomass can take an economic TNUoS signal into account in siting decisions as one of a number of relevant factors

In addition, recent developments are progressively undermining the current system's aim of seeking to apply locational charges which are cost reflective. National Grid has recently recommended that costs associated with the loss of a large generating unit (in practice, a new nuclear power station going offline) should be spread across all users and not targeted back to the large unit. Ofgem has also recently approved a change to the charging methodology removing interconnectors from paying any charges. DECC recently approved the Connect & Manage access regime with any additional constraint costs socialised across all users.

Removal of the strong locational signals for electricity transmission charging would move GB closer towards the rest of Europe and the targeted harmonisation model aimed for the single European electricity market. The major Member States closest to us on continental Europe (France, Germany, Belgium and Netherlands) all have uniform charging and only France requires generators to pay any transmission charges (and these are set at a low level). These Member States also have connection charging methodologies which are at least as shallow as the GB methodology, with the majority shallower. Thus GB generators are currently paying considerably more in transmission network and connection charges than their closest European competitors and are thus being put at a disadvantage.

Charges for generation should be compatible with charges for interconnectors and hence on a level playing field with generators connected to networks in Europe accessing those interconnectors. Charges should be future proof and convergent with a market with increasing European regulation and cross border operation. The European Commission has given regulators a target of 2014 for introducing market coupling and removing any obstacles to cross-border trade.

**Conclusion: The conditions which supported the use of locational pricing as an efficient mechanism to optimise generation and grid investment are no longer present and failure**

**to align charging models in different EU Member States will begin to hamper moves towards increased market integration across Europe. For these reasons we consider fundamental reform of Great Britain's electricity transmission charging arrangements as being inevitable.**

## ***2. National Grid's charging principles are not facilitating energy policy delivery***

We believe it is essential that a review of transmission charging arrangements considers whether it is necessary to change National Grid's licence obligations or give guidance as to how these obligations should be interpreted.

### *Electricity*

National Grid is currently obliged under licence to have in place an electricity transmission charging methodology with the following objectives:

- (a) that compliance with the charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;
- (b) that compliance with the charging methodology results in charges which reflect, as far as reasonably practicable, the costs incurred by transmission licensees in their transmission businesses; and
- (c) that, so far as is consistent with (a) and (b), the charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses.

In practice in setting and reviewing electricity transmission charges National Grid has operated with a number of further or secondary objectives. These are to:

- offer clarity of principles and transparency of the methodology;
- inform existing users and potential new entrants with accurate and stable cost messages; and
- set charges on the basis of services provided and on the basis of incremental rather than average costs, and so promote the optimal use of and investment in the transmission system.

These primary and secondary objectives do not clearly state that the charging methodology should facilitate achievement of broad energy policy. National Grid has recently recognised this limitation publicly, stating<sup>1</sup> that it must ensure that the charging arrangements do not unduly hamper developments that could help to meet European and Government environmental targets through the decarbonisation of the electricity network. We understand that National Grid and Ofgem have tended to use objective (c) to try to incorporate this thinking, but it seems to us that energy policy objectives need greater prominence and should be balanced against, rather than made subsidiary to, cost reflectivity.

Whilst such a consideration does not fit within the narrow economic remit of the charging objectives, National Grid also assists the industry and other stakeholders by highlighting the impact of potential developments in the charging regime on future consumers.

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<sup>1</sup> Open letter of 18 August 2010 from National Grid to Ofgem on GB ECM19: Charging for Large Loss Frequency Response

## Gas

National Grid is obliged under licence to have in place a gas transmission charging methodology with the following objectives:

- (a) to reflect the costs incurred by National Grid, where charges are not determined by auctions;
- (b) to facilitate competition between gas shippers and between gas suppliers;
- (c) to take account of developments in the transportation business; and
- (d) to promote competition between gas suppliers and between gas shippers.

These objectives also do not clearly state that the charging methodology should facilitate achievement of broad energy policy.

### *Future principles*

The principles underlying charging for both the gas and electricity transmission networks do not directly recognise the new and emerging challenges that the energy sector faces. These have been partially considered for electricity through the need to take account of developments in the transmission business and for gas through the need to take account of developments in the transportation business. However we believe it is now necessary to more directly incorporate this requirement into the charging principles as well as aim for more commonality of principles for gas and electricity.

Accordingly, we would propose the following changes for both gas and electricity:

- (a) there should be a new objective added at the same level as cost reflectivity and competition, to facilitate the achievement of a secure, sustainable, affordable and diverse energy system, taking account of Government energy policy;
- (b) the requirement to take account of developments in the transmission or transportation business as appropriate should be at the same level as cost reflectivity and competition;
- (c) there should be a subsidiary objective that charges must be stable and predictable so far as is reasonably practicable, so as to provide a reasonable degree of certainty for investors.

It is necessarily implicit that the charging regime must be consistent with all applicable UK and EU legislation, but this could be stated explicitly if it is thought useful. In general terms these objectives should also facilitate increased integration with other EU energy markets.

**Conclusion: The current charging model does not appear to be efficiently achieving many of these objectives and it will therefore be critical to any system of enduring charging arrangements that National Grid's objectives are revisited to reflect a better alignment with the UK's overarching energy policy goals.**

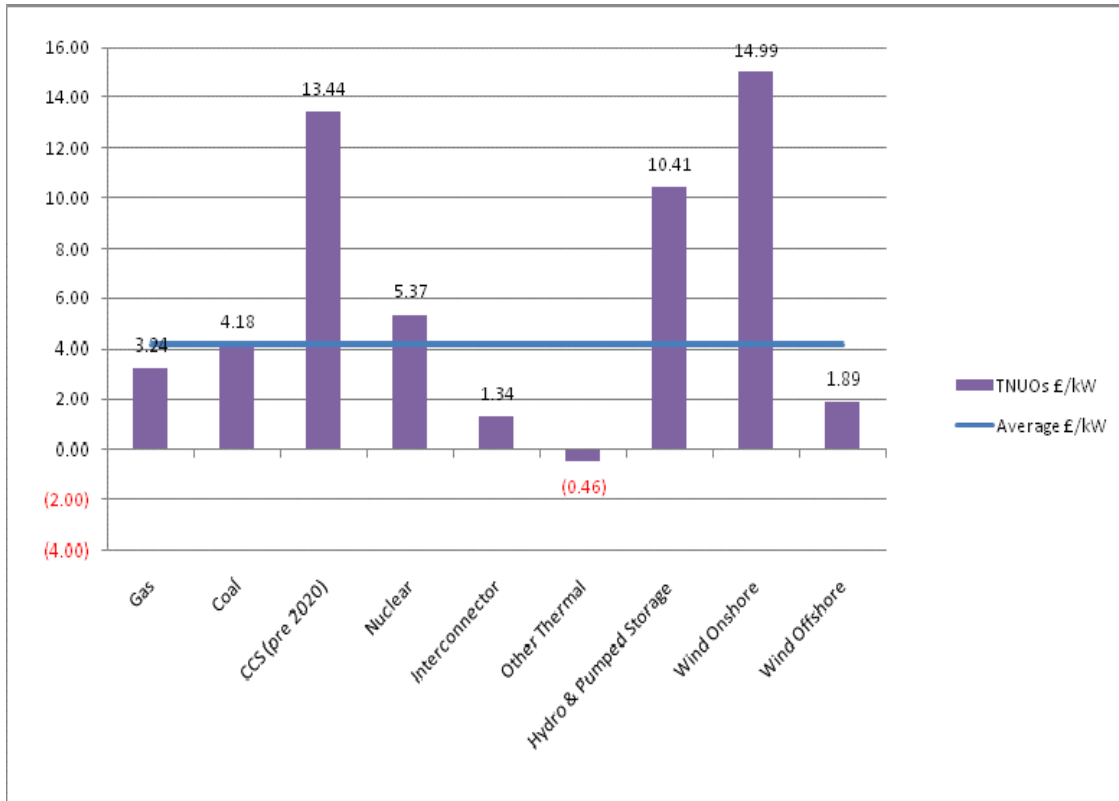
### **3. The charging arrangements are not serving the public interest on environment**

#### *Facilitating Low Carbon Generation*

The current system of charging for electricity transmission throughout GB is designed to be technology neutral with charges varying solely by location irrespective of type of generation plant. However because of the differing site requirements for different types of generation charges do vary significantly by technology.

Figure 2 below shows actual Transmission Network Use of System (TNUoS) charges for 2010/11 by type of generation. The charges shown are the total of the locational element and the residual element but exclude the local generation tariff recovering the costs of the infrastructure assets that are local to the generator.

**Figure 2 Transmission charges by technology 2010/11 (£/kW)**



Source: National Grid TEC Register November 2010

The most economical large scale source of new renewable power, onshore wind, is currently paying an average of £14.99/kW, because of its location away from demand centres, compared to an average for all generation of £4.12/kW. For a typical onshore windfarm in the north of Scotland, transmission charges at their current level would account for around 10% of the total capital, operating and maintenance costs over an assumed 20 year life. For such windfarms a move to average 'postage stamp' charging would make a number of marginal sites, which currently are rendered uneconomic by the level of charges, attractive for investment.

This issue is further analysed in the Oxera Report which accompanies this submission. They calculate that a postage stamp transmission pricing model would boost deployment of onshore wind by around 4-8%, or up to 4 TWh – equivalent to the total UK onshore wind output in 2006.

The current locational charges appear to favour offshore wind with its location predominately off the east coast of England. However a change to 'postage stamp' charging would increase lifetime costs for an offshore windfarm located off the east coast of England by less than 1% and thus would have a minimal adverse impact on offshore investment decisions.

Offshore generation has even less locational flexibility than onshore, as the zones were allocated by the Crown Estate, and thus the effectiveness of locational signals is questionable. In addition, the local asset element of the current charging methodology imposes a significant cost on offshore generation, significantly more in relative terms than for onshore generation. We thus support offshore charging being included as part of the review and support National Grid putting on hold their current charging proposals in this area. The expected significant

growth in offshore generation will have a very significant impact on onshore TNUoS charges further adding to the instability and unpredictability of charges.

#### *Value for Money to Energy Consumers*

The current electricity charging methodology aims to provide value for money to energy consumers by promoting optimal use and investment in the transmission system. This has had some success through encouraging new CCGT plant to locate in areas of the country where transmission costs will be minimised. Since the cost of building CCGT plant is reasonably similar at potential sites across the country, then this approach can result in lower overall costs for generation and transmission associated with power from new CCGTs and these lower costs would be reflected in prices to end consumers. However, it seems unlikely that this would work for other types of generation, especially low carbon generation, whose location is more constrained. This issue is analysed in section 3 of the Oxera Report.

Onshore wind must locate where the wind resource is located and where projects can be developed. In much of the UK this is not generally co-incident with demand centres. The extent of the renewable generation required to come close to the Government's 2020 targets means that the significant majority of this generation will require to be located remote from demand centres. The Oxera Report shows that around two thirds of the GB onshore wind pipeline is located at sites in Scotland, where high locational transmission charges apply.

If some onshore sites in Scotland are not attractive, renewables developers are likely to curtail investment in the UK accordingly. They or other developers may move offshore with the most attractive initial sites being off the English coast as (under the current methodology) they have significantly lower locational transmission charges than Scottish sites. However the capital cost for offshore wind generation is estimated, at around £2,700/kW, to be almost double the capital cost for onshore wind, at around £1,400/kW.

The ENSG report 'Our Electricity Network: A vision for 2020' has estimated that the transmission capital costs, both offshore and onshore, to connect 10GW of offshore wind off the east coast of England would be almost double the capital cost to connect 10GW of onshore wind in Scotland. Thus the current locational transmission charging methodology is seeking to incentivise wind generation to move to sites where the overall generation and transmission costs associated with the power are almost double.

Renewable incentives for offshore wind generation are significantly greater than for onshore wind, currently 2 ROCs rather than 1 ROC, and thus developers are attracted despite the higher costs. However in terms of delivering value for money to final energy consumers, full use must be made of all suitable onshore sites and any methodology which makes potentially economic onshore sites uneconomic is not facilitating the timely move to a low carbon energy sector while achieving value for money for existing and future consumers.

The Oxera Report estimates that the removal of locational charging principles could allow an increase in onshore wind capability of up to 8% (4TWh). This outcome would clearly be positive in a public policy context in two regards. Firstly, the potential increase in onshore wind deployment would allow greater confidence to be placed on achieving the UK's legally binding targets for renewable energy by 2020. Secondly, once the renewables target was met, cost savings for consumers should arise, as a result of differential subsidies applied to onshore and offshore wind. Oxera concludes that for 4TWh of additional onshore wind power, the saving to consumers would be £164 million (2009 prices) in each year after the Government's renewables target has been met.

**Conclusion: Continuation of the existing charging arrangements is no longer serving the public interest and may result in higher costs for consumers. Oxera calculate that the potential annual cost saving to energy consumers from additional deployment of low cost onshore wind generation could be in the region of £164m per year.**



**4. The charging arrangements are not serving the public interest in relation to existing thermal plants**

*Facilitating Low Carbon Generation*

The locational signals in the current electricity transmission charging methodology are having an adverse effect on the development of clean coal and CCS. Our Longannet station in Fife is now the only practical option for the early fitting of CCS to an existing coal-fired power station in GB. The incremental locational signals appear to be incentivising stations such as Longannet to close.

If Longannet does respond to the signal and close then the only option for CCS would be to fit it to another new or existing new coal station which would be sited in a more favourable transmission zone in the south of England, although the economics of new coal are not favourable at present. This would significantly delay the full demonstration of CCS with knock-on impacts both on the timing of and confidence in the new technology. Accordingly such an outcome would not facilitate the timely move to a low energy carbon energy sector at value for money to existing and future consumers.

**Figure 3**

TNUoS charges for LCPD opt-in plant

<u>Project</u>	<u>Transmission Zone</u>	<u>2010/11 Charge (£/kW)</u>
SP - Longannet	6	£13.44
SSE – Fiddlers Ferry and Ferrybridge	9	£5.42
Drax	9	£5.42
Eggborough	9	£5.42
EDF Energy – Cottam and West Burton	13	£3.59
International Power - Rugeley	14	£1.56
E.On - Ratcliffe on Soar	14	£1.56
SSE - Uskmouth	15	£0.39
RWE - Aberthaw	15	£0.39

From an investment standpoint this is a very important issue, with a £26m annual cost differential between zones 6 and 15 for a 2GW station. The Oxera Report estimates that the impact of moving to a postage stamp methodology would improve the NPV of the Longannet SCR investment by £100 million, or an IRR improvement of 150 basis points. This would move the IRR from a figure below the hurdle range quoted by Redpoint<sup>2</sup> to one within that range.

*Value for Money to Energy Consumers*

These adverse impacts on value for money for existing and new consumers arise largely as a result of disconnects between economic and environmental signals in the electricity transmission charging methodology for generators. No such disconnect is evident in electricity demand charging, nor for the gas charging methodology. It appears to us that these methodologies are broadly successful in delivering value for money to energy consumers.

<sup>2</sup> “Dynamics of GB Electricity Generation Investment, May 18 2007 p. 17

The only coal-fired power station which we judge to be capable of having CCS operational significantly ahead of 2020 is currently paying £13.44/kW because of its location. At this level of charge, we have estimated Longannet will pay an additional £150m-£200m in transmission charges from 2010 to 2020 compared to a 'postage stamp' charge and there is a possibility under the current charging methodology that this excess cost could be significantly greater as a result of future network investments.

The Oxera Report assesses the impact on consumers of removal of the current locational charging signal, if that change acted to bring a life extension investment at Longannet into economic viability. This outcome would clearly be favourable to the public interest as it increases the probability of more low incremental cost investment in the generation sector at a time of unprecedented investment need. This should delay the need for higher capital intensity generation and minimise costs to final energy consumers over the next ten to fifteen years, by increasing capacity margins and reducing the impact of expected increases in wholesale electricity prices. Oxera estimates the accumulated consumer benefit at around £300 million (2009 prices), with a substantially greater benefit if other coal stations in North England invest as a result of the reduced locational TNUoS charge.

In addition, the Government has recently announced that up to £1bn will be invested to create one of the world's first commercial scale CCS demonstration plants and we are working with the Government to deliver a successful procurement based around the Longannet power station. However, as noted by Oxera, the effect of the current transmission charges acts to reduce the IRR of the necessary life extension work below the hurdle rate and this may prevent any CCS demonstration from operating for long enough and at a sufficient load factor to gain the level of economic data and operational experience to comprise a successful demonstration.

**Conclusion: Reform of the locational transmission charging regime would have positive impacts on energy security, by improving the average economics of marginal coal plant life extensions and limiting the impact on future energy prices. Such a move would also facilitate early demonstration of CCS capability which is central to longer term Government energy projections.**

**5. Other relevant considerations**

*Consistency of Charging*

The electricity and gas transmission charging arrangements both have primary objectives to facilitate or promote competition and have set out in different ways to seek to achieve this objective. Electricity has strong locational signals and gas has auctions for entry capacity and administered charges for exit capacity. The electricity locational signals have been successful in encouraging new CCGT plant near to the GB demand centre but are having unintended adverse consequences on plant decisions for new onshore renewable generation and existing coal plant life extension/CCS. The electricity signals do not seem relevant to siting decisions for new nuclear power stations. Despite the uncertainty introduced through auctions, the gas charges have been successful in encouraging the investment to facilitate competition.

In terms of cost reflectivity there are significant differences in the approaches taken in the electricity and gas charging methodologies. The gas regime seeks to reflect the costs incurred by National Grid except where charges are determined by auctions. This is a very significant exception which can result in users paying prices for entry capacity which have no relation to the costs incurred by National Grid in providing that capacity.

For the electricity charging regime the principal objective on cost reflectivity is to set charges which reflect the costs incurred by transmission licensees. A uniform charging methodology would still meet this objective and indeed around 85% of the current costs incurred are spread across all generators on a uniform basis. However National Grid has adopted a secondary objective of charging on the basis of incremental rather than average costs with the aim of promoting optimal use and investment in the transmission system. This does not recognise that the majority of current and proposed investment in the electricity transmission network is aimed

at providing access for the generation required to meet the Government's environmental objectives for 2020 and beyond, which does not have the ability to respond to incremental pricing signals.

The existing methodology does not take account of the fact that certain classes of generators (mainly renewable, nuclear and pre-existing conventional generation) are unable to respond to these incremental signals. This could be argued to be discriminatory as it fails to take account of material differences between these classes of generators and other classes (such as CCGTs) which are capable of responding to the signal. Further, to the extent that locational charges may be considered beneficial in seeking to minimise the size of the transmission network it may be arguable that the system is disproportionate when we consider the significant adverse effects (in terms of higher TNUoS charges) suffered by generators unable to respond as compared with the limited beneficial impact achieved as a result of those (relatively few) generators that are able to respond to the signals.

National Grid has also adopted a secondary objective for electricity to provide accurate and stable cost messages. The locational charges for generators from the electricity transmission charging methodology are however not stable in investment timescales. The 2010/11 zonal charges vary from £23/kW to -£6/kW and charges in future years for each zone will be dependent on the extent to which potential investors respond to these signals and the way the model incorporates new grid and interconnector developments.

The fact that the level of future charges to be faced by generators will predominately vary as a result of third party actions (and as such is outwith generators' individual control) means that it is extremely difficult for users to make sufficiently informed economic investment decisions around plant viability and profitability. If generators do respond to these strong locational signals then the signals themselves will change significantly. If no changes are made to the current model, then an increase in volatility is expected which could be a major barrier to investment.

The electricity and gas transmission charging arrangements both have objectives to take account of developments in the network businesses. The electricity methodology has become deficient in this regard as it has failed to recognise the increased environmental driver for transmission investment and now has signals discouraging the use of transmission assets which have been approved to meet Government targets. This conflict has not arisen with the gas methodology where economic and environmental signals are more closely aligned.

### ***Connection Arrangements - Project TransmiT Objectives***

We support the objectives for Project TransmiT to ensure that arrangements are in place to facilitate the timely move to a low carbon energy sector whilst continuing to provide safe, secure, high quality network services at value for money to existing and future consumers.

The Secretary of State commenced his statutory powers granted under the Energy Act 2008 on 11 August 2010 and implemented Connect and Manage with socialised costs, under which all new generation is able to apply for an accelerated connection based on the time taken to complete the relevant enabling works, with wider reinforcement carried out after the generator has been connected. The amount of user commitment each generator must give to remain on the network was at the same time increased to a minimum of 1 year and 5 working days. The Government stated that this option was chosen as it was the most likely to deliver its renewable energy and other climate change and security of supply objectives.

Ofgem has recognised that the scope of Project TransmiT should be limited to aspects of the current arrangements not considered by the Government when coming to its decision on the enduring arrangements for electricity transmission grid access. It is however important to ensure a common direction of travel on all of the inter-related aspects of transmission charging, access and losses to avoid sending confused messages to investors.

### ***Connection Arrangements - Problems Hampering Connection***

In order to avoid potential problems hampering connection it is essential that Transmission Owners are incentivised through the RIIO price control mechanism to deliver both the enabling works to allow generators to connect and the wider system reinforcement to ensure that system constraints are minimised. Anticipatory investment in wider reinforcement should be encouraged as the risk of under-utilisation of these assets is remote and would probably deliver additional capacity to support future generation growth and additional flexibility to enable the System Operator to manage transmission flows.

With the removal of the queue for wider reinforcement works under Connect and Manage, it is essential that there is not a resultant queue for enabling works. Enabling works should be progressed on the basis of application date and the ease of completion of the works. National Grid should not use delivery of enabling works as a means of restricting access to the transmission system.

### ***Connection Arrangements - Fair Treatment of System Users***

ScottishPower welcomes National Grid's decision on 2 July 2010<sup>3</sup> that Users are not required to secure wider works in the period 1 October 2010 to 31 March 2011. This approach is pragmatic as it recognises the difficulty in allocating responsibility for securing wider reinforcement works to the Main Interconnected Transmission System (MITS). It also recognises the reality that any transmission capacity released on the MITS by the withdrawal of one developer will be utilised by a subsequent developer. The probability of any transmission capacity becoming stranded due to the withdrawal of a single developer is very low while there are still so many developers seeking access.

However, as indicated above, National Grid's decision is only for a single security period. ScottishPower would welcome the adoption of this approach as part of the enduring security methodology, for the onshore works required for all projects.

Currently only the Final Sums Liability (FSL) security approach is applicable to the costs for transmission infrastructure required for offshore wind and marine renewable. This is a very significant risk for these generators to bear and thus presents a considerable threat to realising the maximum potential – as early as possible – of these technologies. ScottishPower would welcome an early review of security arrangements and their application to offshore and marine generators.

Developers of generation projects require certainty over the level of security they will be required to provide pre-commissioning. At present we have both an Interim Generic User Commitment methodology and a Final Sums Methodology both outside the code governance regime. Whilst we accept that there would need to be safeguards to ensure that National Grid received appropriate security for the stranding risk of transmission reinforcement works, we would support pre-commissioning security being brought under Connection and Use of System (CUSC) governance. This would also ensure consistency with notice and security for post-commissioning generators which is contained within the CUSC.

The enduring arrangements should also ensure consistency of security provision in the case where generators are embedded, i.e. connected to a distribution network. We think that since the same transmission capacity is ultimately being secured, the same methodology should be applied to projects, whether they are distribution or transmission connected. Otherwise, there could be discrimination between the treatment of generators connecting to the transmission and distribution networks. As it will be necessary to make significant progress on both transmission and distribution connected wind farms in order to reach the Government's target, any difference in approach risks presenting a barrier to deployment of renewable generation.

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<sup>3</sup> Re: Review of sharing arrangements for Final Sums Liabilities; 2<sup>nd</sup> July 2010

## **SECTION 2 – ACTIONS AND DECISIONS TO SECURE AN ENDURING CHARGING REGIME**

### ***Prioritised Issues***

We welcome the focus of Project TransmiT in reviewing the existing charging arrangements generally to ensure that they are fit for purpose in supporting and facilitating achievement of the Government's wider energy policy objectives. In particular, this review should substantially reduce or remove the strong locational charging signals for electricity transmission throughout GB because of the adverse impact they are having on investment decisions for the generation required to meet the Government's environmental objectives for 2020 and beyond. While this could be done by Ofgem giving National Grid guidance on the interpretation of its licence obligations on charging it would be clearer for these obligations to be amended to emphasise the importance of facilitating the timely and economic move to a low carbon energy sector.

As a result of the higher charges for generation in areas of the network with more wind generation connecting, there is currently an incentive to close conventional plant in these areas. Premature closure of thermal plant could ultimately leave the GB system short of generation at certain times, or else bring forward additional investment costs for replacement units. The arrangements could leave Scotland short of conventional plant and needing transmission reinforcements to provide import capacity to meet peak demands during low wind periods.

### ***Options for reform of locational transmission charges***

Whilst it is relatively easy to highlight the deficiencies and unintended consequences resulting from the current system of locational transmission charging, identifying enduring solutions for reform of the methodology is somewhat less straightforward.

One of the major challenges in delivering an equitable and economically robust charging framework arises from the difficulty in aligning the UK's overarching energy policy objectives with the principles of facilitating effective competition and cost reflectivity within National Grid's objectives. It is clear that a principles based approach to designing a new charging methodology, coupled with targeted enhancements to National Grid's objectives will best facilitate a workable charging regime for the long term.

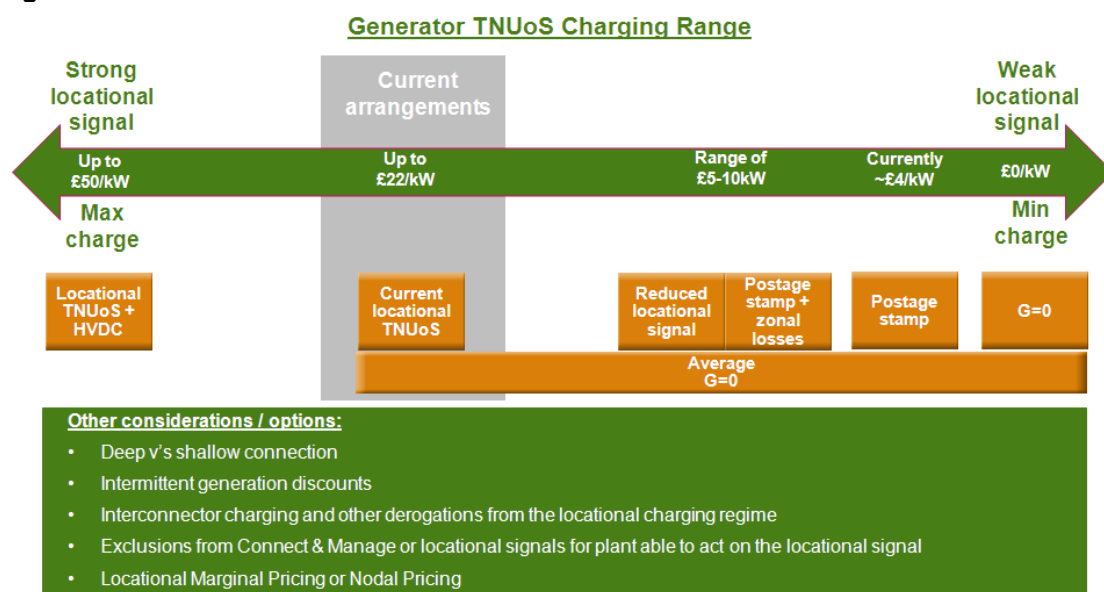
In advance of these developments, it is therefore slightly premature to advocate a particular charging model for the GB transmission charging arrangements. ScottishPower would strongly support actions to remove the very strong locational signals currently applied to both existing and new power generation projects, as the current arrangements are directly working against attempts to maximise low carbon and secure sources of energy in Northern UK. We can also see the clear benefits of a more easily understood, stable and transparent set of charging arrangements which the postage stamp charging model would deliver. It is our strong belief that a continuation of the current charging arrangements is untenable.

It is however recognised that Ofgem's review will need to consider and evaluate a wide spectrum of options for reform of the transmission charging arrangements, including evaluation of how generator charging will fit with demand charging and indeed arrangements in the gas market.

At one extreme, there is the potential that National Grid's current ICRP model, if applied to the proposed HVDC sub-sea transmission cables, could lead to a significant strengthening of the locational signal to new and existing generation (although National Grid have subsequently highlighted that any extension to the current methodology for the HVDC connections would be subject to further consultation). At the other end of the spectrum, the option exists to mirror several other Member States in allocating all TNUoS charges to demand, either with or without a move to a deeper connection regime.

Figure 4 attempts to illustrate the wide range of options for reform:

Figure 4



In considering these alternatives, close attention will need to be paid to policy formation and broader market developments at two distinct levels:

- The need to align charging principles with energy policy aspirations at a UK level to maximise deployment of low carbon generation sources such as renewables, nuclear and CCS;
- The need to facilitate increased integration and market coupling at a European level, to ensure the UK does not take actions which inhibit the harmonisation of EU energy markets in line with the Third Package.

Under these circumstances, it is likely that a move in GB generator charging arrangements towards a model where locational charging signals are less pronounced, and limited to those plants that can usefully respond to them, is likely to be the optimal solution from a policy perspective.

In addition, the Oxera Report highlights that a removal of the current locational signals (for example via a move to a postage stamp charging model) could also deliver lower energy costs for consumers in two ways:

1. By maximising the potential for onshore wind development in Scotland and Northern England, it could allow the legally binding 2020 renewable energy targets to be met using a higher proportion of onshore wind and less of the more expensive renewable technologies. This could lead to an efficiency saving for consumers of up to £164m per annum once the Government's renewables targets are met.
2. By facilitating an increased investment in thermal plant life extensions in high TNUoS zones, the resulting improvement in capacity margin could deliver reductions in wholesale energy prices and/or investment costs with an NPV of around £300m.

It is recognised that there is potentially a need for some form of locational signal to ensure generators do not impose excessive costs on other users by siting new generation plant in constrained transmission zones. The current charging methodology was however recently changed to charge generators for transmission infrastructure assets local to their connection ensuring that generators now pay for the local cost they impose on the system. We support retention of this local circuit tariff but accept there may also be a need for some form of appropriately structured locational signal to take into account the material differences between

certain classes of generators, in particular those that are able to respond to the signals and those that are not.

### ***Timing***

It will be imperative that decisions are reached in a timely manner to allow investment decisions to be taken over the next 12 to 18 months, as any delay will directly impact decisions on thermal plant life extension and commitment on Round 3 offshore wind developments.

### ***Grid Access Reform***

In terms of ensuring that connection arrangements are in place to facilitate the timely move to a low carbon energy sector the main priority issue has already been dealt with by the Government in implementing Connect and Manage with socialised costs as the enduring arrangements for electricity transmission grid access. This will encourage the generation required to meet the Government's environmental targets to connect as soon as feasible. It is essential that any further changes made to the connection and access arrangements complement these new arrangements and do not dilute their beneficial impact.

### ***Conclusions: Actions and Decisions Required***

To address the issues identified above we believe there are a number of key actions and decisions which will be required to deliver an enduring transmission charging regime:

- removal of the strong locational signals, so as to incentivise the investment required to achieve the Government's objectives;
- ensuring National Grid's objectives are aligned with Government policy;
- moving arrangements closer to our major European neighbours; and
- providing stable long term investment signals

### ***Conclusions: Process for Change***

We are open to the possibility of utilising the 'Significant Code Review' (SCR) process to consider transmission charging, but think that further consideration is needed as to whether that particular process would improve the speed of the review and longevity of the conclusions, given that work is already under way using TransmiT's own process. In any event, the process for change should focus on finding a simple but effective solution.

The Government's recent review of electricity transmission access arrangements is a good example of where a simple approach can provide the regulatory framework required to incentivise the investment required to meet Government targets. The Government chose the option of fully socialising the additional costs of providing early access to the grid as the one most likely to attract the greatest beneficial investment and rejected other more complex options on the basis that they would be less likely to meet the Government's objectives.

The strong locational signals in the electricity transmission charging methodology are out of step with the recently implemented Connect and Manage regime. Increasing the socialised element of transmission use of system charges will complement the new enduring arrangements for electricity grid access, save customers money and increase the likelihood of meeting the Government's environmental objectives.