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Dear Anthony,

**Electricity transmission charging: assessment of options for change**

Thank you for the opportunity to provide views on behalf of ScottishPower and ScottishPower Renewables on Ofgem's assessment of options for change to electricity transmission charging under Project TransmiT.

It is not clear to us that in being minded to reject a Socialised charging model Ofgem has selected the way forward which is most likely to deliver the Government's renewable targets. Some of the analysis supporting the rejection of the socialised model seems to us to be inaccurate.

However, in terms of the specific models that are now under consideration, we accept Ofgem's view that improvements to the ICRP methodology are now required and we are broadly supportive of the Improved ICRP option. We think that the Improved ICRP variant where there is no expansion factor in respect of HVDC converter stations forming part of the main interconnected transmission system (MITS) is most appropriate, by analogy with the treatment of transformers and other apparatus. This variant of Improved ICRP seems likely to provide a better long term geographical dispersal of generation plant in GB and deliver the optimum level of renewables deployment at least cost.

Accordingly our key views are:

The deployment of onshore wind resources should be maximised as this lower cost option could reduce the extent to which more expensive offshore options need to be developed (as outlined in Oxera's report [1]Principles and Priorities for Transmission Charging Reform). This may require further adjustment to island tariffs to ensure that this onshore resource can be fully developed.

We believe that the costs of implementing both a fully socialised and socialised model retaining local charges have been exaggerated by Redpoint's modelling methodology. There are clear advantages identified within the assessment document from a Socialised charging methodology; simplicity, predictability, transparency and less volatility together with a higher certainty of delivering the Government's low carbon objectives.

[1] Principles and Priorities for Transmission Charging Reform, Oxera, November 2010.

The Improved ICRP methodology better reflects the way in which transmission investment is evaluated than the current methodology and is consistent with the GB SQSS which recognises the implicit sharing of transmission capacity between low and higher load factor plant. This, in turn, reflects the lower level of transmission investment required for low load factor plant in the Improved ICRP charging methodology.

This relationship was clearly demonstrated in the Load Factor Analysis presented by National Grid at the 5th meeting of the Project TransmiT Technical Working Group[2] where a clear correlation was evident between plant load factor and its contribution towards constraint costs.

It is important that the costs of the 'bootstrap' HVDC converter stations (i.e. those that form part of the MITS) are socialised as this would make their treatment in the charging methodology consistent with that of quadrature boosters (QBs), static VAR compensators (SVCs) and other transmission apparatus capable of providing similar control and operational functions to the System Operator. The cost of HVDC converter stations should therefore be excluded from the calculation of Expansion Factors for the HVDC bootstraps.

We believe that National Grid should be directed to reduce the generator share of TNUoS charges towards zero within a clearly defined timescale. This would deliver a level playing field and open competition for GB generators with generators in Europe. A clear direction would remove any uncertainty in the timing of future changes in the G/D split required in order to comply with the EU tariffication guidelines and allow the required adjustment of wholesale market contracts in an orderly manner.

Having identified the changes required to the charging methodology, Ofgem should direct implementation of such changes at the earliest date subject to reasonable transitional arrangements to allow generators to make economic decisions on closure without undue penalty under user commitment arrangements.

Our responses to the detailed questions in the consultation are set out below.

I hope you find these comments useful. Should you wish to discuss any of these points further then please do not hesitate to contact me.

Yours sincerely,

**James Anderson**
**Commercial and Trading Arrangements Manager**

[2] Project TransmiT: Load Factor Analysis, http://www.ofgem.gov.uk/Networks/Trans/PT/WF/Documents1/IS%20-%20Updated%20Load%20Factor%20slides.pdf

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**Chapter4**

**Question 1: Do respondents consider that we have appropriately identified and where possible quantified the impacts of the Project TransmiT options?**

The assumptions on transmission investment assume that no further reinforcement options are available to alleviate constraints on north-south power flows once four HVDC bootstraps have been constructed. This results in significantly increasing levels of constraint volume and cost under the Fully Socialised and Socialised sensitivity options ([3]Redpoint report Figure 29). Given the lead time, the modelling should have assumed some generic reinforcement options which would have reduced constraint costs (while also recognising that the total transmission revenue to be recovered and hence TNUoS charges would also increase as a result of the increased investment).

**Question 2: Do respondents consider that there are additional impacts which we should take into account in the decision making process and, if so, what are these?**

The assessment identifies that the Socialised charging and both Improved ICRP charging options have a higher probability of delivering the Government's renewable targets than the other options assessed. However, the assessment does not attempt to assign a cost to the risk of not achieving these targets nor a value to the increased probability of achieving the targets.

The increased stability and predictability of socialised tariffs would result in a lower risk to developers and enable finance to be secured for investment at a lower cost which would ultimately be passed on to consumers. In addition, earlier development of the renewable generation supply chain should provide further cost savings. It is not clear that these benefits have been evaluated and modelled by Redpoint.

The DECC Offshore Wind Cost Reduction task force has been tasked with reducing the levelised cost of offshore wind to[4] £100/MWh by 2020. It would have been helpful if Redpoint could have used this cost in a further sensitivity of the modelling.

**Question 3: Do respondents consider that we have appropriately identified the potential interactions of the Project TransmiT options?**

The key interaction of the Project TransmiT charging option is with the Government's Electricity Market Reform proposals which are not yet finalised. The Redpoint modelling attempts to handle this uncertainty by assuming in the Stage 1 modelling that support will be set at a level sufficient to deliver the Government's renewable targets. It is essential that once FiT CfD levels are known, the Redpoint analysis is re-run to ensure that the targets will still be achieved.

The interaction between generation investment, the resulting need for transmission investment and the constraint costs arising if transmission investment is delivered too late has been properly identified within Redpoint's modelling. However, it is not clear that the beneficial impact of RIIO-T1 incentives on Transmission Owners to invest in transmission reinforcement in anticipation of generators' requirements has been fully recognised. Such an incentive could result in delivery of transmission investment in timescales which mitigate the potential for increased constraint costs.

**Question 4: Do respondents consider that we have appropriately identified the likely impacts or consequences of these interactions?**

The likely impacts of the interactions with the Government's EMR proposals have not been appropriately identified nor have the likely impacts of the interactions with RIIO-T1 incentives on Transmission Owners.

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[3] Modelling the Impact of Transmission Charging Options, Redpoint Energy, December 2011
[4] DECC: Offshore Wind Cost Reduction Task Force;
http://www.decc.gov.uk/en/content/cms/meeting_energy/wind/offshore/owcrtf/owcrtf.aspx

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**Chapter 5**

**Question 1: Do respondents consider that we have appropriately identified and taken account of the key sustainability issues?**

The key sustainability issue is achievement of the Government's renewable targets and it is not clear that, in being minded to reject a Socialised charging model, Ofgem has selected the option most likely to deliver the Government's targets. In addition, we believe that the level of 'contingency' in achieving the Government's renewables target under the Socialised charging approach has not been valued and properly considered in the analysis.

However, Redpoint's analysis shows that an Improved ICRP methodology with socialisation of the 'bootstrap' HVDC converter costs is more likely to achieve the Government's renewable targets than the current charging model.

**Question 2**: **Do you think there may be long term and strategic benefits associated with the development of HVDC technology, in particular the treatment of converter station costs for links that parallel the AC network, which Project TransmiT modelling has not fully considered because of the timeframe of the modelling (i.e. 2030) and the limited nature of the bootstrap options?**

Due to the impact on visual amenity of overhead transmission lines, an increasing proportion of the required transmission investment may require to be undergrounded or to be routed offshore using HVDC technology. HVDC will also play an important role in the deployment and connection of offshore renewables and is therefore a key technology in achieving renewable objectives.

An approach which encourages the early deployment of HVDC technology with the associated learning opportunities and cost reductions is likely to have a beneficial impact on the overall cost of delivering the investment required in the electricity sector. In addition to the proposed bootstraps, this technology will be utilised in interconnectors, offshore generator connections and island connections. Socialised charging and both Improved ICRP charging options all result in earlier deployment of the HVDC bootstraps than the current charging methodology.

We would therefore agree that there may be long term and strategic benefits for the development of HVDC technology and believe that the chosen methodology should encourage it where feasible.

**Question 3: Do you have any supporting evidence for a different treatment of the converter station costs for the planned bootstrap HVDC options?**

Although an HVDC transmission line will not work without the HVDC converter stations at either end, the HVDC converter stations serve to transfer power from one transmission circuit to another in the most efficient manner. Hence they perform the same function as any other transformer on the transmission system.

Similarly the HVDC converter stations allow control of power flow in transmission circuits performing the same function as a quadrature booster (QB). In essence the key similarity in a HVDC converter station, QB or simple transmission system transformer is that they are all transformers with different control and operational facilities and on this basis they should be treated on a consistent basis.

Transmission substation, QB and also static VAR compensator (SVC) costs are recovered through the residual element of the TNUoS tariff. Including the 'bootstrap' HVDC converter station costs in the expansion factor of HVDC assets would be inconsistent with this approach and thus we consider that the Improved ICRP variant option warrants further development.