SCOTTISHPOWER

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Dear Stuart,

CAP AND FLOOR REGIME: INITIAL PROJECT ASSESSMENT FOR THE NSN INTERCONNECTOR TO NORWAY

Thank you for the opportunity to comment on this initial project assessment for the NSN interconnector to Norway. We are supportive of cost effective measures to facilitate increased interconnection that do not distort markets. We are also aware that this project has been awarded PCI status and could help the UK contribution to the 10% interconnection target set by the European Council in October 2014 – and that in order for it to do so, tight project timescales would need to be met.

We have provided answers to the consultation questions in Annex 1 attached. Our main comments relate to Ofgem's approach to the 'needs case' assessment and the importance of establishing a level playing field between GB and foreign generators.

Needs case assessment

Economic theory tells us that free trade is beneficial for each of the parties involved, providing that it is not distorted by subsidies or barriers. Such theoretical principles indicate that interventions need to be carefully considered to ensure that they do not lead to distortion. The "Cap and Floor" scheme essentially transfers to consumers the risks about the need for a project in return for a cap on the revenues if it is well used.

In the ideal case, where the predicted returns lie at the midpoint of the cap and floor and where the risk of overshooting equals the risk of undershooting, the cap and floor scheme involves little implicit subsidy and should be less likely to be inefficient or distort competition in generation. However, if there is an asymmetry in the risks, as appears to be the case with NSN (see Figure 13 in the Pöyry report), the implicit subsidy may be substantial and needs to be rigorously and transparently justified by the benefits.

We do not think that the evidence and analysis presented in the initial project assessment is sufficient to conclude that the implied level of subsidy is justified. Ofgem's base case GB welfare benefit (net of subsidy costs) is £493 million NPV. However this includes gains from arbitraging carbon price support, excludes GB welfare loss due to CM payments going to Norway and excludes the effect of recent falls in wholesale gas prices. Our initial estimates suggest that if adjustments are made in respect of these three effects, the overall welfare impact could instead be negative (-£367m NPV). These are complex issues, and it may not be appropriate to adjust for them in full. However, the magnitude of the swing in the welfare impact when they are included suggests that further scrutiny is required for the final project assessment.

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It is also necessary to take care in interpreting the consumer benefits in isolation (as opposed to GB net welfare. It is normal practice in public sector project appraisal to focus on changes to net welfare since this is a good measure of economic efficiency and any distributional impacts can be dealt with separately. A further reason to be cautious of the modelled consumer benefits is that the Pöyry model on which they are based does not appear to include dynamic effects. As market spreads are persistently below new entrant levels, it is likely that Capacity Market payments, together with scarcity premia following market exits, would need to rise to offset wholesale price reductions caused by NSN imports in order to keep supply and demand in balance for the market as a whole.

Level playing field for GB generators

As the UK becomes more interconnected with other markets, it is increasingly important to ensure that GB generators are able to compete with foreign generators on a level playing field basis[1]. Without a level playing field, investment decisions may be distorted and there will be a loss of efficiency and welfare in the UK. Examples of costs borne by GB generators which are not generally borne by foreign generators include:

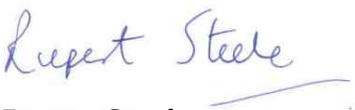
- carbon price floor tax costs
- generators' 50% share of BSUoS charges
- TNUoS charges (including the cost of onshore reinforcements for new interconnectors and costs of cap and floor payments)[2]
- alternatives to imports (such as more storage) do not currently benefit from the cap and floor concept

The Cap and Floor scheme risks exacerbating these distortions if the parameters are set so as to subsidise interconnector construction. We would encourage Ofgem to carry out further analysis of these factors in the context of its Cap and Floor assessments. This should include any security of supply implications. Relying on interconnection requires energy to be available via the interconnector at times of system stress, which may not always be the case. If the Cap and Floor scheme and the distortions above encourage new generation to be built overseas with power transported to the UK via interconnectors, this could raise questions about longer-term security of supply.

In summary, while we agree that increased interconnection will help facilitate the completion of the internal energy market, helping to meet low carbon and security of supply objectives in the process, we do not believe that interconnection projects should be supported at any cost, or on a basis which sees GB generators discriminated against in favour of overseas generators, whose imports are effectively being subsidised. We are concerned that the current NSN proposals risk having this effect.

Please do not hesitate to get in touch should you wish to discuss any aspect of this response.

Yours sincerely,



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[1] See Annex 2 for additional analysis

[2] In Norway, unlike in most other European countries, generators face transmission charges, but at a much lower rate than those faced by some GB generators.

Annex 1

CAP AND FLOOR REGIME: INITIAL PROJECT ASSESSMENT FOR THE NSN INTERCONNECTOR TO NORWAY – SCOTTISHPOWER RESPONSE

Question 1: What are your views on the approach Pöyry has taken to modelling the impact of cross-border interconnector flows?

We think that the approach Pöyry has taken to modelling the impact of cross-border interconnector flows is generally sensible, given the time available. However, as explained below, we think a major limitation of the model is that it does not include dynamic effects and for this reason, we consider that the modelling of distributional impacts is likely to be much less reliable than the modelling of overall welfare benefits.

Our detailed comments on the model are as follows:

- We believe that the large transfer from producer surplus to consumer surplus predicted by Pöyry's model is highly questionable as the model does not appear to include dynamic effects. In particular, given current low levels of generator profitability, we consider it unlikely that generation revenues could be reduced by £3bn (NPV) without some compensatory effect. The concept of missing money in the generation sector is widely accepted, and indeed the capacity mechanism has been introduced to ensure there are adequate stable revenues to ensure security of supply is delivered. Pöyry's analysis appears to ignore this concept and assume there is no correction in the capacity market for the lost revenues and/or market exit as a result of lower wholesale prices and associated infra-marginal rents. In practice we think:

    - It is likely that generators would receive higher payments from the capacity mechanism to make up for the fall in wholesale prices. Such payments would represent a transfer from consumer to producer, potentially offsetting much of the consumer benefit predicted by the model.

    - To the extent that the additional capacity payments do not restore equilibrium, market exit is likely to cause the necessary scarcity to achieve this.

    - To the extent that the new equilibrium involves a lower wholesale price offset by more capacity payments, the growing proportion of generation that is supported by the CfD mechanism would receive larger difference payments that would further offset the producer to consumer transfer modelled by Pöyry.

- Pöyry's report (page 70) says that their pan-European BID3 model 'also has the advantage of accounting for the impact of decisions and developments of large but not directly connected countries (such as Germany) on smaller surrounding markets'. This suggests that the model may not have considered the impact of the Norway-Germany interconnector (NordLink), which is due to be operational in 2018. The presence of this interconnector could increase wholesale prices in Norway relative to the modelling assumption and reduce the amount of arbitrage revenue available to NSN. If so, this would potentially increase the need for cap and floor subsidy and reduce the overall GB welfare.[3] If Nordlink has not been included in the model, we would suggest that the model is re-run prior to the final project assessment to check whether Nordlink makes a difference.

[3] The Pöyry report makes a similar point on page 72, first complete bullet.

- We would also be interested to understand whether modelling information from ENTSO-E, in the context of the preparation of the European Ten Year Network Development Plan (TYNDP) has been considered, and if so, whether it has been taken into account in Ofgem's initial project assessment. Given that NSN is in the TYNDP and moreover, has been awarded the status of project of common European interest (PCI), detailed modelling information must already be available. Has this been considered?

Finally, we would request that in the final project assessment, the financial impacts (consumer, producer, interconnector and overall welfare impacts) are shown disaggregated between 'GB as importer' and 'GB as exporter'. This will give the reader a clearer understanding of the relative financial importance of arbitrage and efficiency savings associated with flows in each direction (which may be very different from the relative magnitudes of the flows) and will improve the transparency of the process.

Question 2: Do you agree with the modelling results for NSN and our conclusion that NSN is likely to provide benefits to GB consumers?

No, we think it is premature for Ofgem to conclude that the project is likely to deliver significant benefits to GB consumers. We think that in reaching its minded to position Ofgem has:

a) attached too much weight to 'GB consumer benefits' as opposed to 'total GB welfare impact;

b) not taken appropriate account of adjustments which may need to be made to the GB welfare impact calculations.

<u>GB consumer benefit versus GB welfare impact</u>

Ofgem's May 2014 proposal for rolling out the cap and floor regime suggests that the needs case assessment will be based on the "overall likely social welfare benefit and disaggregated consumer, interconnector developer and generator impacts for GB and other relevant countries (with particular explanation of impacts on GB consumers' interests)". In other words, there are two considerations: the overall social welfare benefit and the narrower consumer benefit.

Net social welfare is a measure of economic efficiency and is the metric most commonly used in public sector policy appraisal. We believe this should be the primary consideration for Ofgem in determining whether to provide cap and floor support to an interconnector project, particularly when provision of such support may well involve a degree of subsidy payment. Unless the welfare benefits materially exceed the expected level of subsidy payment, it is likely to be economically inefficient to provide such subsidy.

The consumer benefit may differ substantially from net welfare where there is a large transfer of surplus between producers and consumers, as appears to be the case with NSN. Given Ofgem's statutory duty to protect the interests of consumers, it is clearly important to consider these distributional impacts as well. We would also note that the Pöyry model largely ignores a number of *dynamic* effects which would tend to restore the balance of benefits between consumers and producers towards the previous competitive equilibrium. So for example:

- if producer surplus is reduced by £3bn (NPV) as modelled, it is likely that, other things being equal, generators will need to receive higher support from future capacity mechanism auctions (see our response to Question 1) or else close, so restoring equilibrium through scarcity rents;

- a proportion of future GB generation (notably new nuclear and wind) will be supported through the CfD mechanism; if wholesale prices were to fall as modelled, this will be offset by higher CfD payments.

For all these reasons we think it would be inappropriate to place too much weight on narrow measures of consumer benefit (ie transfers from producers to consumers) as opposed to net social welfare. While any distributional impacts (once the dynamic effects are addressed) should be considered, consumers will generally benefit indirectly from producer surplus, especially if the price is set at an efficient level.

Adjustments to the net social welfare calculation

Although Ofgem's headline figure for base case social welfare benefit is £493m (Table 8.2), this figure includes welfare gains which are a result of arbitraging carbon price support, excludes GB welfare loss due to CM payments going to Norway and excludes the effect of recent falls in wholesale gas prices. If adjustments are made for these effects, our initial estimates suggest the overall welfare impact becomes substantially negative at -£367m.

	£m NPV
Total GB welfare gain base case	493
Less welfare gain due to arbitrage of CPS	-218[4]
Less welfare loss due to CM payments	-312[5]
Less adjustment to reflect current gas price	-330[6]
After adjustments	**-367**

As Ofgem notes, these adjustments raise a number of complex issues. It is not clear cut whether it is appropriate to include the benefits of arbitraging CPS regimes, whether there may be countervailing benefits from CM payments to NSN, or how long the recent fall in gas prices will persist. However, given the risk that the welfare benefit could be negative or close to zero, and given the importance of the NSN project as a precedent for future decisions, we think that these issues should be given thorough examination at the final project assessment stage.

Question 3: Do you have any comments on the system operation impacts of NSN?

It would have been useful if the analysis had demonstrated the impact of the NSN interconnector on GB TOs, and the likelihood of additional works being required in order to accommodate it. This would seem to be relevant in the context of the overall needs case assessment.

SP Energy Networks will submit a response addressing some of these concerns in more detail.

[4] Difference between Base case and No CPS case is £309m-£91m=£218m (Ofgem table 3.3).
[5] Calculated as £18.5m per annum (Ofgem condoc para 3.35) for 25 years discounted at 3.5%. NB Our analysis in Annex 2 takes a different approach.
[6] Difference between Base case and Low gas price case is £309m+£131m=£440m (Ofgem table 3.3). Base case gas price is circa 74p/therm and Low scenario gas price is circa 42p/therm (Poyry figure 56). Current gas price (Winter 16/17) is circa 50p/therm, which is 75% towards Low scenario. 75%*£440m=£330m

Question 4: Do you have any views on the onshore connection information?

No Comment.

Question 5: Have we appropriately assessed the qualitative impacts of NSN link?

We consider that the qualitative impact of the proposed NSN interconnector on security of supply is not material. This is partly because the capacity mechanism is designed to ensure that an appropriate quantity of capacity is contracted including DECC's assessment of the impact of interconnectors. So in the absence of the NSN interconnector, more GB capacity would be contracted. Secondly, we note that DECC at present gives limited weight to the security of supply gains from interconnectors, with significant de-rating factors.

Question 6: Are there any additional impacts of NSN link that we should consider qualitatively?

We would note the "Natural asset impacts" in Table 5.1 on page 28 where it states that development of NSN might be less disruptive than alternative options for electricity supply (such as additional power stations). Given additional power stations are often built on existing sites, this argument should be qualified.

Question 7: Do you have any comments on our assessment of NSN's chosen connection locations or cable routes?

NGET system studies for 2011 were used to determine the optimum connection point. We would therefore welcome further evidence and transparency on the overall economic benefit of connecting to Blyth, given that the NGET assessment is at least 3 years out of date.

Also, actual constraint costs today are far lower than were predicted in 2010. The likelihood that constraints may not be as significant in 2020 as predicted in 2011 should therefore be taken into account, along with any possible new outlooks for the future of thermal plant in Scotland.

Question 8: Do you have any comments on our assessment of NSN's project plan?

It is unclear to us whether the final investment decision can be taken in early 2015 given our understanding of the timetable for assessing detailed costs.

Question 9: Do you agree with our conclusions on the IPA for NSN?

For the reasons given in response to Question 2, we think it is premature for Ofgem to conclude that the project is likely to deliver significant benefits to GB consumers.

Question 10: Do you have any comments on our application of the regime to NSN?

We are supportive of measures to facilitate increased interconnection where this helps to deliver improved economic welfare and security of supply cost effectively. However as

explained in our response to Question 9, we do not consider that a robust case has yet been made that this is the case.

Question 11: Do you have any comments on our assessment of the development costs?

We understand the challenges of completing a thorough assessment of development costs ahead of the NSN procurement process. We note in paragraph 9.2 the proposal to assess detailed costs in mid-2015 when NSN's procurement process has concluded and NGIH has submitted detailed cost information, and welcome the further consultation referred to ahead of the setting of provisional cap and floor levels. We also welcome the commitment to revisit the assessment of NSN's technology design if issues are raised through consultation or if the final cost submission contains costs materially above expectations.

Question 12: Do you have any comments on our initial assessment of technology choice or tendering strategy for the NSN interconnector?

We would only wish to observe that both the costs and the benefits of the proposed interconnector need to be assessed rigorously to ensure value for money for consumers within the cap and floor process.

ScottishPower
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Annex 2

Effect of competitive distortions between interconnector imports and GB generation

The two charts below show adjustments to the NSN interconnector's arbitrage revenue to correct for competitive distortions between interconnector imports and GB production.

The charts are based on the results from Figure 13 (page 41) of the Poyry report, using the 'first additional' (FA) approach and for the Base case and Low scenario. The adjustments are approximate and illustrate the competitive distortions resulting from:

- **Transmission Network Use of System Charges (TNUoS)**: Unlike GB generators, interconnectors do not pay transmission connection charges. The amount of arbitrage revenue attributable to this distortion has been estimated by reference to the cost that would currently be incurred by a GB generator connecting to the transmission network at Blyth. The adjustment is circa €15 million per annum for both Base case and Low scenario.

- **Balancing Services Use of System charges (BSUoS):** Unlike GB generators, interconnectors do not pay BSUoS charges. The amount of arbitrage revenue attributable to this distortion has been estimated by reference to the modelled volume of imports each year multiplied by the £/MWh BSUoS charges faced by a GB generator. (Although not included in this analysis, variable cost BSUoS would affect the decision to import on a short run basis, as it would narrow the arbitrage value on a per unit basis.) The adjustment is in the range €12-21 million per annum for the Base case depending on the year, and in the range €9-18 million per annum for the Low scenario.[7]

- **Carbon Price Floor (CPF):** Unlike GB generators, interconnectors do not pay the CPF tax. The amount of arbitrage revenue attributable to this distortion has been estimated on the basis that the price difference captured by the interconnector during imports will on average include the additional variable cost (tax) faced by a CCGT and that the distortion applies only between 2020 and 2025. (Beyond 2028 we follow Poyry's central view that the cap on the CPF may no longer be binding). The adjustment is in the range €77-84 million per annum for the Base case depending on the year, and in the range €49-70 million per annum for the Low scenario.[8]

In the charts below the top of the green bar represents the total arbitrage revenue modelled by Poyry. The top of the orange bar shows the arbitrage revenue after adjustment for the three distortions outlined above, ie in the case where the interconnector pays the same BSUos and TNUoS charges as a GB generator, and where there is no CPF policy.

Where the arbitrage revenue falls below the level of the Floor, this implies that a subsidy will be required under the cap and floor scheme. It may be seen that even in the Base case the adjusted revenues fall well below the floor, implying that in the absence of these distortions,

[7] Total BSUoS charges are currently £1 billion pa (http://www.nao.org.uk/wp-content/uploads/2014/05/Electricity-Balancing-Services.pdf). Based on annual GB demand of 330 TWh and a 50% share for generators, this implies a generator BSUoS charge of £1.50/MWh. The Base case import flow varies between 7TWh and 12TWh over the period 2020-2045 (Poyry Figure 12), implying an avoided BSUoS charge of £11-18m pa (€12-21m pa at £1=€1.18, the exchange rate assumed by Poyry), and in the Low scenario flows vary between 5TWh and 10TWh, implying £8-15m pa (€9-18m pa).

[8] When CCGTs are the price setting plant in GB a proportion of the CPF is passed through to wholesale electricity price. For a CPF of £18/tCO_2 and a CCGT producing 0.33 tCO_2/MWh, the additional uplift in the wholesale price is 0.33*£18 = £5.94/MWh. The Base case import flow in the period 2020-25 varies between 11TWh and 12TWh implying an avoided CPF charge of £65-71m pa (€77-84m pa at £1=€1.18), and in the Low scenario flows vary between 7TWh and 10TWh, implying £42-59m pa (€49-70m pa).

a significant level of subsidy would be required. We consider this represents a fairer view of the true level of subsidy.