

Interconnector developers and
other interested parties

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Date: 12 March 2015

Dear stakeholders,

Decision on the Initial Project Assessment of the NSN interconnector to Norway

Background

In August 2014 we established our cap and floor assessment process for electricity interconnectors. Five projects applied for cap and floor regulation in our first application window.

We prioritised the assessment of the NSN interconnector as the project was closest to taking an investment decision. NSN is a proposed interconnector to Norway being developed jointly by National Grid Interconnector Holdings (NGIH) and Statnett. It is scheduled to start operating in 2020 and would have a capacity of 1.4GW. Project costs and revenues would be split 50:50 between Great Britain (GB) and Norway, so half of these would be covered by the GB cap and floor regime.

Our Initial Project Assessment (IPA) looks at whether the interconnector is needed and in particular whether it is likely to be in the interest of GB consumers. This is the first stage of the cap and floor process. The second stage is the Final Project Assessment (FPA) which assesses detailed costs, finalises the regulatory regime and sets the provisional levels of the cap and floor.

In December 2014 we published a consultation on our minded-to position on our IPA of the NSN interconnector. The consultation closed on 3 February 2015. We received 11 responses (three of which were confidential). We have now carefully considered these responses and this letter sets out our decision on the IPA of the NSN interconnector. This letter also outlines our position on some aspects of the FPA of NSN.

Our decision on the IPA

We have decided to grant NSN a cap and floor regime in principle and subject to no material escalation in the costs as submitted to Ofgem to date by the project developers.

This confirms the minded-to position we outlined in the December 2014 consultation. We still think that the NSN project is in the interests of GB consumers. The benefits of the NSN project are driven by maximising the value of GB and Norwegian renewables, and allowing the flow of generally cheaper electricity into GB. It will bring benefits to GB consumers by reducing the wholesale price of electricity, improving the operation of the GB transmission system, and increasing security of supply. We expect NSN will achieve the latter by increasing generation mix diversity, system flexibility and resilience to extreme events.

In reaching our decision we have taken into account the consultation responses (summarised in Annex 1). We have also addressed comments on the appropriateness of the regime and the modelling of the impact of the NSN interconnector.

We still consider the connection location and cable route to be reasonable based on our high-level assessment. We don't expect to re-examine these items at the FPA stage unless there have been material changes to the information provided at the IPA stage.

With regard to the other regime details that are not discussed in detail in this letter, our policy is as stated in the December 2014 consultation. The cap and floor regime design which the NSN project has been granted is set out in our May 2014 consultation and August 2014 decision. As previously stated, we are willing to consider project-specific variations to the detail of the regime, if a developer demonstrates that a proposed change better protects the interests of GB consumers when compared to our default regime.

Our decision on aspects of the FPA

When we published our decision on the IPA and FPA process in August 2014¹, we encouraged developers to submit complete FPA information together with the IPA where possible.

NGIH did not submit complete FPA information at the time of its IPA submission. However it did submit information on some FPA areas, aspects of which we have made a decision on, as set out below. We will assess the majority of detailed costs in mid-2015 when NSN's procurement process has finished and NGIH has submitted detailed cost information.

Development costs: We consider that NGIH's share of development costs are within a reasonable range for projects of this scale and nature. We have decided to allow these costs in full and do not intend to revisit them in the future.

Technology: In our December 2014 consultation we noted that there were outstanding issues regarding cable technology choice² and that we would be seeking further justification from NGIH. NGIH submitted additional information on cable technology in its consultation response. We are now satisfied with NGIH's justification and we understand their cable technology choice in the context of potentially constrained supply chain capacity and the resulting preferred tendering strategy.

Based on the information provided to us, we do not intend to revisit NGIH's decisions on capacity and technology choice (cable and converters) at the FPA stage. NGIH plans to provide us with its cost submission required for the full FPA in mid-2015, at which point we will assess the efficient costs of delivery. We may revisit these items if issues arise as part of our cost assessment, such as costs increasing materially beyond our expectations.

Tendering strategy and process: As stated in the December 2014 consultation, given the complexity of the tendering process and its commercially sensitive nature we were unable to complete an in-depth review of the tendering strategy and process. We did however provide a high level view on the principles under which the tendering is being carried out. We still believe that the choice of the engineering, procurement and construction (EPC) route appears sensible, but we will assess relevant aspects, such as the risk sharing arrangements and the procurement process, once the tendering process is finalised.

¹ <https://www.ofgem.gov.uk/ofgem-publications/89209/decisioncapandfloorneartermelectricityinterconnectors.pdf>

² Our consultants noted that the NSN developers could have considered an alternative cable option (the mass-impregnated lapped paper polypropylene laminate technology) which could reduce costs. However, this alternative cable option has higher cable losses, which can be mitigated through careful cable design.

Regime financial parameters: As set out in our May 2014 consultation document the financial parameters³ used to calculate the cap and floor levels at the FPA stage will be set using the relevant indices on the financial close date (ie the date of the final investment decision). This will ensure that the cost of debt and other parameters in the financial model reflect actual market conditions when the investment decision is made.⁴

Next steps

As noted, the NSN interconnector is owned by NGIH on the GB side and Statnett on the Norwegian side. Since there is a different regulatory framework for interconnectors in Norway, the cap and floor regime will apply only to the NGIH share of the NSN interconnector. The Norwegian share of NSN will be regulated by the Norwegian Water Resources and Energy Directorate (NVE). We will conduct the cost assessment process for the GB share of the interconnector and will not be taking a joint decision with NVE, which will conduct its own assessment.⁵

Discussions on the development of the NSN interconnector between Ofgem, NGIH, Statnett and NVE have been constructive. We are committed to continuing this effective engagement during the next phases of the project. We will work with all parties on issues relating to the regulation of NSN during the regime implementation, the construction phase and commissioning at the end of the decade. We will engage with NVE during the FPA and post-construction review (PCR).

We acknowledge that with a new regulatory regime there is uncertainty on some of the detail of the later stages of implementation (ie details of FPA and licence implementation). We are committed to continuing our engagement with NGIH on these matters and to build on the work done on similar projects. The outcomes of the detailed work on the FPA and licence implementation for NSN will help inform the process for future projects.

We expect NSN to make its full FPA cost submission in mid-2015. We will consult on our detailed cost assessment at the FPA stage and our decision will be used to set a provisional cap and floor for NSN. We will conduct our PCR and finalise our cost assessment as construction nears completion around 2019. This will take into account the efficient expenditure needed to address any risks⁶ and to set the opex allowance. At this time we will also set the final cap and floor levels which will remain fixed, subject to the licence conditions, for 25 years.

For further details please contact Evridiki Kaliakatsou (Evridiki.Kaliakatsou@ofgem.gov.uk).

Yours sincerely,



Kersti Berge

Partner, Electricity Transmission

³ In line with our May 2014 consultation, some parameters in the cap and floor model are fixed (eg equity beta is fixed at 1.25). These parameters will not be changed; only those linked to trailing data will be.

⁴ We will set the initial cap and floor levels for NSN at the FPA stage. These will be subject to final adjustments following our PCR. Financial parameters for setting the cap and floor levels will be calculated and set at the time of final investment decision and will not be updated thereafter.

⁵ Ofgem will regulate 50% of the link on the basis of costs and revenues, except where costs are specific to GB or Norway as agreed by developers and regulators.

⁶ The assessment of risks will be informed by whether costs were (i) efficiently incurred, (ii) outside the company's control and (iii) appropriately mitigated.

Annex 1: Summary of consultation responses for the Initial Project Assessment of the NSN interconnector to Norway

Our consultation on our minded-to position on the Initial Project Assessment of the NSN project ran from 17 December 2014 to 3 February 2015. We received 11 responses, three of which are confidential. One respondent provided two versions of its response (one confidential and one not). Respondents included interconnector developers, energy generators, interest groups and transmission system operators (TSOs). There were no responses from consumer groups.

The non-confidential responses have been published on our website and copies are also available from our library. Below we summarise the main points raised in response to each question, and we provide clarifications on the issues identified.

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

Respondents generally supported Pöyry's approach, commenting that it seemed logical and well considered. Some comments were made on the modelling specifics. Two respondents commented that interconnection capacity assumptions behind the "Low" scenario were not appropriate, as it assumes too much interconnection. One generator considered that further sensitivities should be undertaken, eg to take account of the carbon price support (CPS) mechanism. Two respondents commented that the model should consider the impact of other interconnectors to Norway such as Nordlink, if it doesn't already.

We assessed a range of scenarios and sensitivities which assumed varying levels of interconnection. The scenarios were developed with the assessment of interconnector value in mind, ie the "Low" scenario was designed to result in circumstances that would be unfavourable to the development of interconnectors and the "High" scenario in favourable circumstances. For this reason, we have assumed higher levels of interconnection in the Low scenario than in High. In general the High and Low scenarios present relatively extreme, but still plausible, views to test the upside and downside for interconnector value. We consider the High and Low scenarios to be relatively extreme because the possibility of all the assumptions in these scenarios materialising at the same time appears to be low.

As part of Pöyry's modelling a number of sensitivities were tested, including the removal of carbon price support in GB. This showed that NSN would still result in positive GB consumer (and overall GB) benefits without the CPS mechanism. As for assumptions on additional interconnection between Norway and other countries, Pöyry assumed new interconnection capacity being built.

All of the results of these sensitivities can be found in the Pöyry report.⁷

One respondent noted that total GB welfare is a better measure of economic efficiency than GB consumer welfare and Ofgem should be careful not to interpret GB consumer benefits in isolation. Another respondent commented that Ofgem should focus more on impacts on GB generation. Whilst our primary duties are to GB consumers, when assessing the impacts of the interconnector we not only took into account the modelled impacts on GB consumer welfare but also the total GB welfare impact. This considered the impacts on producers and interconnectors. In the majority of situations considered, the total GB welfare remains positive. When reaching our decision, we have also considered distributional impacts and wider dynamic and efficiency effects, such as investment driven by longer-term impacts of changes to generator profit levels which are not fully taken account of elsewhere in our analysis.

⁷ Read the Pöyry report at:

<https://www.ofgem.gov.uk/ofgem-publications/92097/791iccbaindependentreportfinal.pdf>

One respondent also commented that Pöyry's model was only comparing NSN to the other four interconnectors currently at the IPA stage, whereas other interconnector designs could be more economic, providing the same benefits at lower cost or risk. We have assessed the interaction between interconnector projects submitted to us as well as their routes and connection points. The future interconnection capacities we assumed are in line with National Grid's Future Energy Scenarios. Whilst it is true that there may be additional interconnection in the future, cap and floor is a developer-led regime and developers can bring forward their projects for our assessment when they are sufficiently mature. We chose the application window approach as it allows us to compare future projects that come forward at about the same time, rather than less mature (and therefore less certain) potential future projects.

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

The respondents who answered this question had mixed views. Four agreed that NSN is likely to provide benefits to GB consumers, though two of these respondents had some issues with the results. One noted that the analysis does not fully align with modelling by ENTSO-E. The other challenged some of the conclusions drawn for NSN, highlighting that the operational risks associated with long-distance interconnectors shouldn't be underestimated and that the impact of NSN on GB generators should be considered more. This respondent also noted a number of wider issues which it believes should be considered, such as impacts of interconnectors participating in the capacity market (CM) on generators, and the impact of suppressed GB wholesale prices on decarbonisation targets.

Two respondents did not agree with our conclusions from the modelling. One commented that most of the benefits accruing are due to the CPS mechanism, and thought that we should test whether NSN would still deliver benefits without this. The other felt that we have attached too much weight to GB consumer benefits and not considered GB welfare as a whole sufficiently. This respondent also stated that when total GB welfare has been adjusted to account for CPS, CM payments and the current gas price, the overall welfare impact is negative.

While the market modelling approaches taken by Pöyry and ENTSO-E are similar, the two studies try to assess projects for slightly different purposes and so the outputs of the two studies are not directly comparable. This is because the Pöyry model presents results in net present value (NPV) for the duration of the cap and floor regime, whereas the ENTSO-E modelling shows results for one spot year (2030) and also does not account for project costs in the welfare modelling.

As mentioned in response to question 1, and in our December 2014 consultation, we have considered both GB consumer welfare and total GB welfare when reaching our conclusion. A sensitivity was run to test the effects of removing the CPS, and it showed NSN would still result in positive GB consumer and overall GB benefits, which suggests that NSN's economic needs case is not reliant on CPS.

Pöyry also ran a sensitivity analysis for low gas prices and another which estimated the impact of the CM on interconnector welfare. These did not demonstrate that NSN's economic needs case would fall away. Accounting for the current gas price, no CPS and CM impacts at the same time, as suggested by one of the respondents, would effectively result in similar outcomes to our Low scenario which has no CPS and assumes a gas price even lower than it is now⁸. The Low scenario is a relatively extreme scenario with negative interconnector value and underlying market assumptions, and we don't think this carries

⁸ Pöyry has assumed a gas price of around 40p/therm whereas the current NBP gas price is around 50p/therm.

enough weight to counter the positive impact suggested by the Base case. We have already considered this scenario when reaching our conclusions for NSN.

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

Two respondents supported NGET's analysis of the system operation impacts of NSN, while a third commented that it would need further information to assess if the outcomes presented were efficient. NGET clarified its analysis on constraint management costs; it demonstrates that these costs will increase if the current arrangement for constraining interconnectors continues, but that the implementation of European Codes may change these arrangements which could reduce constraint management costs.

Two respondents considered that the analysis should take into account the impact on GB Transmission Owners (TO), particularly how the Scottish transmission network will be affected and whether any associated works would be required to accommodate NSN. Similarly, a third respondent noted it was unclear whether NGET's analysis had considered Scottish impacts, eg whether NSN will exacerbate Scottish export constraints when it is importing. One respondent noted that the potential for NSN to enhance boundary B6 capability by 350MW was higher than it would expect. It also highlighted that it would expect NSN to have a material positive impact on Scottish import capability. Another respondent commented that the impacts on the Norwegian transmission system should be considered.

In our May 2014 consultation we committed to assessing the value of interconnector projects for system operation. To inform that assessment we asked NGET to study the impact NSN would have on system operation.

NGET has aligned its assumptions on network capability with the year 7 ETYS 2014 boundary capabilities. These boundary capabilities are informed by each of the TOs. We therefore consider that NGET's analysis should sufficiently address boundary capability impacts for all TOs.

We have also carefully considered the efficiency of connection at Blyth and what wider reinforcement works and associated costs would be required. The wider reinforcement requirements have been based on ETYS boundary capabilities.

One respondent, who considered that fast frequency response is the most valuable service that can be provided by interconnectors, commented that NSN will have limited capability for this as it would be mostly importing at full capacity.

Whilst we agree that there may be limited capability if NSN was importing on full capacity, NGET's analysis assumes that between 5% and 10% of the capacity of the link is made available to provide fast response. We view this as a reasonable assumption for the purposes of this indicative modelling but recognise that the decision on capacity use sits with the developers.

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

Most respondents either supported or did not have any particular views on this information. One respondent stated that it didn't have sufficient information to comment, and said that further work would be required to assess whether alternative connections would result in more efficient investment. Another said it was unable to comment on whether the landing point provided the best trade-off between onshore reinforcement costs and NSN project costs.

Our assessment of NSN's connection location in Chapter 7 of the December 2014 consultation was informed by analysis from NGET. This provided detail of the alternative connection locations considered. We used this analysis to verify the justification provided

for the connection location at Blyth. We consider that other connection locations would not result in more efficient investment. We were unable to publish the detail of this analysis as it contained confidential information.

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

Of the respondents who answered this question, four generally agreed with our assessment of the qualitative impacts of NSN. Two respondents raised concerns about the weighting of qualitative assessment in our decision and a couple more respondents had more detailed comments. We set out these respondents' views and our answers to these below.

On the point about the weighting of the qualitative impacts in our decision, one respondent commented that it was unclear how much weight qualitative impacts will carry in making the decision, relative to the quantitative impacts. Another respondent did not believe that the qualitative assessment should be relied on to justify awarding NSN a cap and floor. We have taken our decision based on a range of evidence, including both our qualitative and quantitative assessments. We looked at the underlying rationale for the project. We combined a number of factors to give a quantified estimation of GB consumer welfare and GB total welfare. We have then adjusted these to account for potential impacts of the GB capacity market. Our qualitative assessment has considered information received from the developers as well as our own analysis. As part of the qualitative assessment, we have also considered hard-to-monetise impacts of interconnectors, in line with our Impact Assessment guidance.

On the more detailed comments, one respondent was concerned that the monetised value of carbon savings could be double counted easily. We note that this was included purely on an indicative basis and was not added to other benefits.

Another respondent noted that although theoretically NSN could allow for efficient sharing of renewables by allowing GB to export to Norway when wind output is high and demand low, Pöyry's model shows low levels of exports to Norway. We acknowledge that theoretically NSN could open up a new export route for GB wind. In part, Pöyry's model shows relatively low exports to Norway because of the moderate assumption on GB wind development over the next 25 years. Another reason is that import and export figures are annual figures, while wind export tends to be a more variable figure on shorter timeframes. The same respondent also argued that the hard-to-monetise benefits apply to other interconnectors and are not unique to NSN.

Finally another respondent did not consider that the qualitative impact of NSN on security of supply was material because the CM will ensure sufficient capacity is contracted, and DECC gives limited weight to security of supply gains from interconnectors. DECC has included interconnectors in the CM so their contribution to security of supply will be accounted for. Interconnection with Norway is likely to be of greater value than other interconnectors primarily due to the surplus in the Norwegian market and the hydro based energy mix in Norway. DECC's historical analysis⁹ used to estimate the potential contribution of interconnectors to the CM suggests that an interconnector to Norway will be likely to contribute to GB security of supply at times of system stress.

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

Three respondents suggested additional qualitative impacts that we should consider:

⁹ DECC de-rating methodology for interconnectors: <https://www.gov.uk/government/publications/capacity-market-update-de-rating-interconnector-cmus>

- NSN's capacity would provide a hedging benefit to GB security of supply if the significant new generation capacity forecast to be needed is delayed or not forthcoming.
- NSN will enhance the level of interconnection with the European market. Participation in the single energy market will protect GB consumers from price volatility.
- One respondent noted the 'natural asset impacts' and commented that the argument that the development of NSN may be less disruptive than additional power stations should be qualified, as additional power stations are often built on existing sites.

We have already considered the first two points in our qualitative analysis. On the third point, our example was used for comparison purposes; the space needed for building new power stations is larger than the space needed for the onshore site of an interconnector.

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

Most respondents agreed with our assessment or had no comments. One respondent stated that it didn't have sufficient information to comment, and said that further work would be required to assess whether alternative connection locations or cable routes would result in more efficient investment.

One respondent noted that it is interesting that the proposed NorthConnect project is expecting to link from Norway to Scotland, not England. Another respondent commented that NGET's system studies are from 2011 and further evidence should be provided on the overall economic benefit of connecting to Blyth. It also noted that constraint costs may not be as significant in 2020 as predicted in 2011.

We appreciate that assumptions used to identify NSN's connection location may change, however our assessment is based on NGET's assessment of the most suitable connection location for NSN at the time. As mentioned above, our assessment of connection location was informed by NGET's analysis of viable connection locations. This included commentary on why other options were discounted. From the information available to us, we consider that Blyth represents a reasonable solution for capacity, distance and limited need for additional reinforcement.

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

Most respondents did not have any comments. One noted that there is insufficient information for them to assess whether the plan presented results in efficient investment. Another commented that it is unclear if the Final Investment Decision (FID) can be taken in early 2015 given their understanding of the timetable for assessing detailed costs.

The FPA submission includes a final technical specification and costs (a completed version of the detailed cost template) and any updates to the needs case. The objective of the FPA is to assess the efficiency of detailed project costs to set the cap and floor levels and to finalise the regime design for an interconnector. We encouraged developers to submit complete FPA information together with the IPA where possible. For NSN, the majority of detailed costs will be assessed in mid-2015 when NSN's procurement process has concluded and NGIH has submitted detailed cost information. There are some aspects of the FPA on which we have made a decision; these are detailed in the main body of this decision letter.

As stated in our August 2014 decision, we will start the 25-year cap and floor period from the earlier of the actual connection date or 1 January 2021. This means that if delays push the operational date beyond the end of 2020, the length of the regime would be reduced by the length of the delay.

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

Of the eight respondents who answered this question, five generally agreed with our conclusions, including both the project developers. NGIH agreed with most of our conclusions apart from two specific sections, which it did not think took account of the cost estimates it provided. Statnett commented that a high degree of regulatory certainty would be needed for NGIH to make FID.

We have clarified our position on the costs submitted to us by NGIH in the main body of this letter.

The three generators disagreed with our conclusions and proposal to award NSN a cap and floor. One stated that we had made a strong case for merchant interconnection, as CPS and CM revenues were sufficient to incentivise investment without the need for a cap and floor. Another thought it is premature to conclude that NSN will deliver significant benefits to GB consumers, as we have placed too much weight on GB welfare impacts and not adjusted total welfare to account for CPS, CM revenues and the current gas price. The third generator, while agreeing that there could be significant benefits from NSN, commented that the risks are significant and GB consumers may well end up subsidising the project in the longer term.

The cap and floor regime retains incentives for developers to bring forward projects that are likely to deliver benefits to consumers. We do not consider that the CPS and the participation of interconnectors in the CM remove the rationale behind our cap and floor regime as set out in our May 2014 consultation. Even though our primary objective is to protect GB consumers, we also assessed the impact on overall GB welfare from the NSN interconnector. We tested the scenario without CPS which still resulted in positive GB consumer and GB welfare benefits from NSN. Our conclusions were informed by our assessment of the costs, risks and potential benefits of the project.

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

Two of the respondents reiterated their views that we haven't made a sufficiently robust case for awarding NSN a cap and floor. We have addressed these concerns under question 2 and question 5.

One respondent commented that it wanted to ensure there was appropriate notice and visibility of changes to transmission charges due to cap and floor payments. This issue was also raised in our May 2014 consultation¹⁰ on proposals to extend our cap and floor regime to new near-term electricity interconnectors. We explained in our August 2014¹¹ decision that the interaction with transmission charges is something we are still considering. We are still planning to address this issue in the detailed implementation of the projects and will engage with interested parties as needed.

One other respondent commented that it doesn't think the current cap and floor levels are sufficient to incentivise equity investors to enter the market. In our May 2014 consultation we explained that our reference benchmarks for setting the cap and floor levels were selected to allow for various financing structures and thus increase the range of potential developers that could bring forward projects and thus support competitive pressure and benchmarking. In our August 2014 decision we explained that in order to increase the range of potential developers, we are willing to consider project-specific proposals for variations to the detail of the regime if a developer, as part of its submission, clearly

¹⁰ Read our May 2014 consultation on our proposals for our cap and floor regime at: <https://www.ofgem.gov.uk/publications-and-updates/regulation-future-electricity-interconnection-proposal-roll-out-cap-and-floor-regime-near-term-projects>

¹¹ Read our August 2014 decision letter at: <https://www.ofgem.gov.uk/publications-and-updates/decision-roll-out-cap-and-floor-regime-near-term-electricity-interconnectors>

demonstrates that a proposed change better protects the interests of GB consumers when compared to our default regime.

Both project developers asked for more clarity around the cost assessment process and PCR, including how Ofgem will assess the efficiency of risk sharing arrangements.

At this stage we have assessed and have decided to allow development costs for NSN. We do not intend to revisit these costs in the future as part of the FPA or the PCR. We will continue our cost assessment process as part of the FPA later this year. We will assess NSN's detailed costs and provide allowances to feed in the cap and floor levels. Ahead of operation, we will conduct our PCR. We stated in our December 2014 consultation that we would conduct a PCR of costs before the interconnector would start operating. As per our consultation, we expect this to occur at 95% completion but will consider being flexible on the timing of this as part of the FPA.

As part of the PCR we will only assess:

- allowances for risk: this will include re-measurable items and variations to the EPC and non EPC contracts (ie changes to the scope of the project because of uncertain and unforeseen events);
- insurance; and
- operational expenditure.

If risks materialise then the developer will need to demonstrate that they were efficiently managed, outside the company's control and appropriately mitigated. This will allow Ofgem to assess them and determine efficiently incurred costs. We will not reopen aspects of the cost assessment that we have set now (ie development costs) or will have set as part of the FPA.

We will engage with NSN to produce data reporting templates. It is also the developer's responsibility to provide a sufficient level of quality and detail in its submission for the PCR.

Ofgem's principal objective is to protect the interests of GB consumers, so we will review the risk sharing arrangements between NSN and its contractors to ensure that the interests of GB consumers are protected. We expect risk sharing to be proportionate and reasonable. We need to understand NSN's risk strategy and which risks NSN is better placed to take. Again it is the developer's responsibility to provide a sufficient level of quality and detail for Ofgem's review and assessment. As part of the FPA we will develop a baseline understanding of the risk position of the project to include:

- an understanding of the risks facing the project (to be recorded in the risk register)
- how the risks are proposed to be managed by NSN and by its contractors as well as the contractual terms around this.

This baseline position accompanied by annual reporting of risks as they arise during the project will help us to understand risk expenditure as the project evolves so that we are well placed to carry out the PCR.

Both developers also commented on benchmarking, with Statnett noting the limitations of using benchmarking for interconnector projects which can vary considerably, and NGIH seeking further information on how Ofgem intends to use them. We will compare similar projects where possible, but given the scale and nature of these projects, we recognise that perfectly comparable benchmarks will not be available. As such we will aim to use a wide range of sources of information on comparable costs, for example from our experience with the offshore regime, but we will also consider the nature of individual projects. Benchmarking is one of the sources of evidence for assessing cost efficiency. We will also assess the procurement process and justifications provided by the developers to inform our

assessment. To inform our cost assessment we will require a well justified submission from NGIH.

NGIH also commented on implementation of the regime and the need to overcome challenges around split regulation. As set out in the main body of this letter, Ofgem regulates half of the link and the cost assessment for the GB share will be conducted by Ofgem only. However we are committed to engaging with NVE and both developers on issues relating to the regulation of NSN Link during the regime implementation, construction and operation phases.

NGIH also commented on the setting of the availability target and the application of the availability incentive. NGIH's view is that the availability incentive reintroduces a perverse incentive it is designed to mitigate. Some of the other respondents also commented on the availability target and incentive. Statnett mentioned its intentions to undertake planned reinforcements of its grid in the first few years of NSN being operational, and commented that it did not expect NGIH to be penalised for these outages. Another respondent disagreed, saying it did not think that GB consumers should be penalised (by floor payments being made) if there are known constraints that will affect the flow of power into GB.

We will set the availability target during the FPA. We are willing to consider project-specific variations to the detail of the regime (eg changes to the availability incentive) during the FPA. If the developers want us to do so then they need to clearly demonstrate that a proposed change better protects the interests of GB consumers when compared to our default regime.

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

Respondents generally had no comments on our assessment, thought it seemed reasonable or said they would need further information in order to comment.

One respondent said it expected Ofgem to allow all reasonably incurred costs and to allow a return on this, given the risk that some costs may have to be written off if the project proves undeliverable. The cap and floor regime takes into account the timing of expenditure.

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

Most respondents had no comments on these areas. Two said that they didn't have sufficient information to assess whether the technology choice and tendering strategy will result in efficient investment.

The project developers did comment on this question. Statnett noted that the technology was already chosen long ago based on best-informed assumptions at the time, and that negotiated prices will be dependent on the current market situation so it couldn't be fully anticipated at the time the technology was chosen. NGIH asked for clarifications on what Ofgem's position on technology choice is.

We have provided clarifications on our position on technology choice in the main body of this decision letter.

Additional comments

There were a number of comments on the consultation received in addition to the questions set out above.

One respondent was concerned that we have not placed enough weight on developers' own modelling relative to the results of Pöyry's modelling. We have taken developers' own modelling into account as well as Pöyry's. Generally the results generated by the developers' models have been similar to the ones from Pöyry's modelling. Where there have been differences we have worked with developers where necessary to understand the reasons for these.

One respondent raised a concern that "the role of National Grid is compromised as it is providing advice on SO impacts whilst also being an interconnector owner/operator". NGIH has provided information to us as one of the developers behind NSN. NGET has also provided information to aid our assessment in its capacity as system operator. However we believe that NGET, as SO, is best placed for assessing impacts of interconnectors on system operation. We also consider that their analysis of system operation impacts was a transparent assessment of all five projects. We note that NGIH and NGET are legally separate businesses and NGET's Electricity Transmission Licence contains obligations which prevent NGET from providing preferential or discriminatory treatment to any of its affiliated businesses.¹²

¹² See Special Condition 2C Prohibited Activities and Conduct of the Transmission Business:
<https://epr.ofgem.gov.uk/Content/Documents/National%20Grid%20Electricity%20Transmission%20Plc%20-%20Special%20Conditions%20-%20Current%20Version.pdf>