

Transmission licensees,  
generators, suppliers, consumer  
groups and any other interested  
party

Date: 19 December 2013

Dear colleague,

**Consultation on our Project Assessment of the proposed Beaully Mossford reinforcement under the RIIO-T1 Strategic Wider Works arrangements**

This consultation letter seeks stakeholders' views on our Project Assessment of a proposed reinforcement of the transmission system to the north west of Inverness, which was submitted by Scottish Hydro Electric Transmission plc (SHE Transmission). The proposed reinforcement is designed to facilitate the connection of additional generation, in particular renewables.

On the basis of the information provided by SHE Transmission, and the assessment undertaken by our consultants and ourselves, our initial view on the appropriate Strategic Wider Works<sup>1</sup> (SWW) Output<sup>2</sup> and Allowed Expenditure to be set for the Beaully Mossford reinforcement project are:

1. a SWW Output of an additional 252MW of transmission capacity at sub-boundary 10 to be completed in 2015; and
2. an increase to SHE Transmission's RIIO-T1 Allowed Expenditure of £50.5<sup>3</sup> million for the efficient costs of delivering the project.

The remainder of this letter is structured as follows:

- First, we provide some background on the proposed reinforcement and our previous regulatory decisions.
- Second, we summarise our technical consultants' assessment of the project.
- Next, we outline our views on transferring a small amount of regulatory funding from the Beaully Denny reinforcement project (approved under the Transmission Investment for Renewable Generation mechanism) to the proposed Allowed Expenditure for the Beaully Mossford project (being considered under the SWW arrangements).
- We then set out our initial assessment on the Project Assessment submission to date, including a proposed SWW Output and an adjustment to SHE Transmission's RIIO-T1 Allowed Expenditure for the project.
- Finally, we set out the next steps in the process including how to respond to this consultation.

We are seeking interested parties' views **by 13 February 2014**. Stakeholders' responses will help inform our assessment and decision on the project.

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<sup>1</sup> For more detail on the SWW mechanism please see our website: <https://www.ofgem.gov.uk/publications-and-updates/guidance-strategic-wider-works-arrangements-electricity-transmission-price-control-riio-t1-0>

<sup>2</sup> SWW outputs are defined as increases in boundary transfer capability, or equivalent additional transmission capacity where there is no boundary.

<sup>3</sup> The £50.5 million figure (£50,462,875) is based on our initial assessment of the submission. SHE Transmission requested funding of £54,648,083.

## Background

In January 2010, SHE Transmission submitted a proposal for the Beaully Mossford reinforcement for assessment under the Transmission Investment Incentives (TII) framework.<sup>4</sup> SHE Transmission's proposal set out the need for a two-stage transmission upgrade comprising:

- **Stage 1:** the construction of a 33/132kV substation at Corriemoillie.
- **Stage 2:** the replacement of the existing 132kV overhead lines (OHL) and tower infrastructure with a double circuit 132kV overhead line between Dunmore and the Corriemoillie substation, the construction of a new sealing end compound at Dunmore, and the installation of 3.5km 132kV double circuit underground cable route to Beaully.

As part of its 2010 submission, SHE Transmission requested construction funding for Stage 1 of the project, the construction of the substation at Corriemoillie.

In 2010/11 we assessed and consulted on the need for the overall Beaully Mossford reinforcement, and the specific funding requested by SHE Transmission for the first stage substation component of the project under the TII framework.<sup>5</sup> On the basis of the information provided by SHE Transmission, and the review undertaken by our consultants, KEMA Limited, we were satisfied that the overall project was required, and supported SHE Transmission's proposal to take forward the substation works ahead of the overhead line works. In January 2011 we published our decision ("January 2011 Decision") to provide interim funding for the substation component of the Beaully-Mossford project under the TII framework.<sup>6</sup> At the same time we said that future funding arrangements from 2013/14 onwards for remaining components of the project would be addressed through the SWW mechanism, under the RIIO-T1 price control.<sup>7</sup>

As part of the RIIO-T1 price control, which took effect from 1 April 2013, we put in place arrangements for considering and determining potential adjustments during the price control period to enable the delivery of SWW Outputs that significantly increase transmission capacity.

On 13 May 2013, SHE Transmission submitted a detailed Project Assessment submission on the second and final stage of the Beaully Mossford reinforcement project, the upgrade to the OHL between Beaully and Mossford. The Project Assessment submission details works and project costs to construct 94 new double circuit towers over a length of 26km, the dismantling of 177 existing towers and the installation of 3.5km of underground cable.

This consultation sets out our initial views on the proposed SWW Output and Allowed Expenditure for Stage 2 of the Beaully Mossford project (the replacement of the existing 132kV OHL, which is being considered under the SWW arrangements). Any decision would be subject to a licence modification, which would include a statutory consultation on the proposed licence modification to amend SHE Transmission's electricity transmission licence to reflect a new SWW Output and associated Allowed Expenditure. This licence modification would also require SHE Transmission to deliver the specified increase in transmission capacity.

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<sup>4</sup> The Transmission Investment Incentives framework was introduced in 2010 as interim arrangements during the previous price control, TPCR4, for setting and monitoring funding arrangements for critical investments in transmission infrastructure to help facilitate the transition to a low carbon economy.

<sup>5</sup> <https://www.ofgem.gov.uk/publications-and-updates/transmission-investment-incentives-funding-requests-and-extension-funding-framework-201213>

<sup>6</sup> <https://www.ofgem.gov.uk/publications-and-updates/transmission-investment-incentives-decision-requests-funding-201112>

<sup>7</sup> For more information on the RIIO price control please see our factsheet on our website: <https://www.ofgem.gov.uk/ofgem-publications/76117/re-wiringbritainfs.pdf>

## **Ofgem's Project Assessment of the Beaulieu Mossford OHL under SWW arrangements**

This consultation on our initial Project Assessment focuses on the forecast construction and ongoing operational costs associated with the proposed SWW Output. We do not consider that the need for the Beaulieu Mossford reinforcement overall has changed materially since our January 2011 Decision taken under the TII framework. Therefore, we are not consulting on the Needs Case for this project as part of this consultation.<sup>8</sup>

### *Outline of our assessment*

We appointed TNEI Services Ltd to assist us with our Project Assessment of Stage 2 of the Beaulieu Mossford reinforcement. TNEI's assessment focused on the more technical aspects of our Project Assessment (equipment unit costs, technical design efficiency, and the readiness of the construction programme) and augmented our wider efficiency assessment of SHE Transmission's proposals, which focused on procurement processes, risk management and overall project costs. TNEI also provided recommendations on the appropriateness of SHE Transmission's cost proposals to inform our overall assessment of the efficient level of Allowed Expenditure for the proposed project. We are publishing TNEI's report alongside this consultation letter as Annex 2 (a summary of the findings from the report is also provided in Table 1).

Specifically, TNEI was asked to consider whether SHE Transmission had developed a sufficiently robust technical design and construction programme to deliver the proposed SWW Output efficiently. To this end the Annex 2 report focuses on the following assessment areas:

- The appropriateness and robustness of the proposed design (for example, in terms of sensitivity to design changes and potential supply chain constraints).
- The appropriateness of SHE Transmission's proposed costs and detailed cost assessment of specific elements such as the overhead line and underground cable. The latter analysis included benchmarking.
- The appropriateness of the construction programme and progress made towards being ready to proceed within the proposed timescales.

Our assessment focused on:










- The robustness of SHE Transmission's procurement process, whether this has been efficiently applied and could be expected to result in an efficient outcome.
- The robustness and appropriateness of SHE Transmission's evaluation of and proposed approach to allocating risk, and the efficient costs of managing those risks.
- The efficiency assessment of project item costs.

Table 1 below summarises the key findings of TNEI and us respectively in each of the areas covered in our Project Assessment.

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<sup>8</sup> For more information on the SWW arrangements, including the Needs Case Assessment and the Project Assessment please see our factsheet on our website: <https://www.ofgem.gov.uk/electricity/transmission-networks/critical-investments/strategic-wider-works>

**Table 1: Summary of TNEI and Ofgem's assessment findings**

TNEI scope of assessment		
Design efficiency	Equipment Cost	Construction Programme
		
<p><b>Design efficiency:</b> TNEI concluded that the proposed solution appears to be a fit for purpose economical solution, with a robust construction programme in order to deliver the capacity increase identified in the Needs Case.</p> <p><b>Equipment costs:</b> TNEI concluded that these costs appear reasonable overall, and are largely determined by two Engineering Procurement and Construction (EPC) contracts to deliver the project.</p> <p><b>Construction programme:</b> TNEI concluded that the construction programme appeared to be well thought out and, with the exception of a number of minor details, has the agreement of the two main contractors.</p>		
Ofgem scope of assessment		
Procurement	Risk	Project Costs
		
<p><b>Procurement</b> – We consider SHE Transmission's procurement strategy has been a robust process. However, we identified a weakness in its procurement process in that it carried out the tendering process before the completion of the site investigation works. This means that suppliers have been asked to tender for the works without complete information on the full scope of the works, and are therefore likely to have included a risk premium in the costs. This has potentially led to an inefficiency in the process if the additional information would have enabled suppliers to price more accurately than has otherwise been the case (hence the green/amber rating above).</p> <p><b>Risk</b> – SHE Transmission is seeking a risk allowance based on P70 (meaning that there is a 70 per cent likelihood of the costs being less than or equal to the level it has included in its submission). We consider this level of protection is too high given the risks of the project. Instead we are proposing a risk allowance based on P50 (which means there is an equal likelihood of actual costs being higher or lower than those provided), and are consulting on an associated reduction for the risks currently covered by the risk pot.</p> <p><b>Project Costs</b> – We consider that the overall project costs seem reasonable with one exception, hence the amber/red rating above. We do not agree, based on our understanding of the evidence SHE Transmission has provided, with the treatment of uncertain costs associated with particular events in the project costs. SHE Transmission's approach (known as Provisional Sums) implicitly assumes that the uncertain costs will arise and does not take account of the possibility that these might be lower than anticipated. We consider it would be more efficient that SHE Transmission share the risks with consumers (see Annex 1 for further discussion). We are consulting on transferring provision for these items into the risk pot at P50 values. We estimate this will result in a £2.9m reduction in the project costs.</p> <p> Indicates an area where a reduction to the requested expenditure is recommended.</p> <p> Indicates an area of concern or where improvements could be made.</p> <p> Indicates a positive assessment.</p>		

### *Proposed Allowed Expenditure*

Based on the areas covered in its assessment, TNEI did not recommend any adjustment to the Allowed Expenditure requested by SHE Transmission. However, in the areas covered by our assessment and highlighted above, we are proposing the following reductions to ensure risk is shared appropriately with consumers, and so that consumers only pay efficient costs:

- £-1.3m for the Risk Budget
- £-2.9m for Provisional Sums

In total we are proposing a £4.2 million reduction in Allowed Expenditure, resulting in a total Allowed Expenditure of £50.5 million for Stage 2 of the Beaulieu Mossford Project. Table 6 in Annex 1 profiles this expenditure over the RIIO-T1 price control period. Further detail of our assessment of these areas, and our reasoning behind the proposed reductions, is included in Annex 1 to this letter.

The table below sets out our initial view of the Allowed Expenditure for the proposed Beaulieu Mossford SWW reinforcement.

**Table 2: Initial view of potential Allowed Expenditure:**

	<b>Total (£, 2013/14 prices)</b>
<b>SHE Transmission submission</b>	54,648,083
<b>Ofgem initial view</b>	50,462,875
<b>Variance</b>	<b>-4,185,208</b> <b>(-7.7%)</b>

### *Proposed SWW Output*

Table 3 below summarises the proposed SWW Output, as an increase in transmission capacity, which is expected to be realised by the Beaulieu Mossford reinforcement.

**Table 3: Beaulieu Mossford SWW Output**

<b>Area</b>	<b>Existing capacity<sup>9</sup> (MW)</b>	<b>SWW Output to be delivered (MW)</b>	<b>Post reinforcement capacity (MW)</b>
<b>OHL between Corriemoille substation and Beaulieu substation (sub-boundary 10)</b>	86	<b>252</b>	338

### **Transfer of funding between the Beaulieu Denny project and Beaulieu Mossford project**

#### *Background*

Although this project mainly involves replacing an existing OHL, the final 3.5km of the OHL is being replaced by underground cable. This section of cable is known as the Beaulieu Dunmore cable. The installation of the Beaulieu Dunmore cable allows for the existing Beaulieu Mossford 132kV OHL to be dismantled in the local area to the north of Beaulieu Substation. This dismantling forms part of a planning condition for a related reinforcement project known as Beaulieu Denny.

<sup>9</sup> Pre-fault summer rating of the overhead line.

Beaully Denny is the upgrade of 132kV transmission line to a 400kV transmission line, running from Beaully to Denny. Funding for the Beaully Denny project was given<sup>10</sup> under the Transmission Investment for Renewable Generation (TIRG) mechanism put in place at the start of TPCR4, the previous price control mechanism, in 2004. Significant planning obligations were made conditions of the planning consent to minimise the visual impact of the transmission line. The planning condition in respect of the undergrounding of the Beaully Dunmore cable has to be discharged before the new Beaully Denny line is commissioned.

#### *Initial views on the transfer of funding*

The installation of the Beaully Dunmore cable was originally planned to be undertaken as part of the Beaully Denny project. However, as the Beaully Mossford project is increasing the capacity of the required cable beyond that required for the Beaully Denny project - SHE Transmission has requested that the work to install the cable and dismantle the associated towers should form part of Stage 2 of the Beaully Mossford project under the SWW mechanism. We agree that the work should now be undertaken under the Beaully Mossford project, as it is increasing the original planned capacity, and the allowance for the cable and associated tower works within the Beaully Denny construction costs should be transferred to this project as a contribution to the increased cost of this element of the works.

Once we have made our decision on the Beaully Mossford project, and the treatment of this transfer of Output between the Beaully Denny and Beaully Mossford projects, we will also publish our statutory consultation on the change in Output associated with the Beaully Denny TIRG project.

#### **Our initial views**

Our final assessment of the project and decision on the proposed SWW Output and Allowed Expenditure for the Beaully Mossford project will be informed by the responses to this consultation, and any additional analysis we may carry out. However, we set out below our initial views of the SHE Transmission proposal, taking into account TNEI's assessment.

A key consideration in our assessment is whether the licensee (in this case SHE Transmission) has developed a sufficiently robust development plan and risk sharing arrangements to deliver the proposed Output efficiently, and whether there is a sufficiently advanced technical solution against which we can assess the efficient costs and Output as required by the licence. Taking into account the original submission made by SHE Transmission, and the various discussions that have taken place between SHE Transmission, Ofgem and our consultants, we have been able to reach an initial view on the proposed SWW Output and Allowed Expenditure for the Beaully Mossford project.

#### *Initial views on the proposed SWW Output*

Our initial view is that it would be appropriate to set an SWW Output relating to the transfer capability at sub boundary 10 of SHE Transmission's transmission area to the north west of Inverness. Given that SHE Transmission's projected spend profile is intended to deliver the additional capacity by 31 October 2015 (with dismantling of the existing line continuing until mid-2016), our initial view is that it is appropriate that this output be scheduled for delivery in Quarter 4 of 2015.

In light of this, our initial view is that SHE Transmission's SWW Outputs in Table 2 of Special Condition 6I of its electricity transmission licence should be amended such that the

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<sup>10</sup> <https://www.ofgem.gov.uk/publications-and-updates/determination-and-notice-scottish-hydro-electric-limited%E2%80%99s-transmission-investment-renewable-generation-asset-value-adjusting-event-%E2%80%9Cbeaully-denny%E2%80%9D>

transfer capability at sub boundary 10 increases in accordance with the additional capacity to be delivered by the Beaulieu Mossford project.

### *Initial views on the Allowed Expenditure*

Having considered the submission made by SHE Transmission, and the review carried out by our consultants, our initial view is that:

- The overall construction costs proposed by SHE Transmission appear to be appropriate, with the exception of its proposal for Provisional Sums for the uncertain costs associated with events that could lead to additional scope in the works which is discussed below (and in more detail in Annex 1).
- We do not agree with SHE Transmission's proposal to treat the uncertain costs of construction activities it believed would be required but where the precise costs were still uncertain as Provisional Sums (such as slope stability works and environmental mitigation). We understand that SHE Transmission's approach implicitly assumes that the uncertain costs will arise and does not take account of the possibility that they might be lower than anticipated. We consider it would be more appropriate that SHE Transmission share the risks with consumers. Therefore, we are proposing that a provision for the uncertain impacts of such events are treated the same as other project risks, and included in the risk pot for the project at P50 values. We note that strictly under the terms of the NEC3 Contract<sup>11</sup>, SHE Transmission's preferred contracting strategy, including these items in the contract with its suppliers goes against the NEC3 principles. In addition, we consider that including these items in the risk pot is more appropriate given the other risk sharing mechanisms (the sharing factor<sup>12</sup> and the relevant reopener provisions in the RIIO-T1 price control) will provide additional protection for SHE Transmission against risks that have a significant impact on project costs. This ensures a reasonable balance of risk between consumer and Transmission Owner (TO). Therefore, we propose moving the cost provision for the events SHE Transmission has identified into the risk pot at P50 values. For the purpose of this consultation, we estimate this will reduce the total project costs by approximately £2.9m. We will continue to work with SHE Transmission to update the final cost provision for these events once SHE Transmission has evaluated these within its Monte Carlo risk analysis at P50 values.
- We also consider that it would be appropriate to adopt the P50 value for the other risks identified by SHE Transmission rather than a P70 value. We consider the P70 value of risks provides SHE Transmission too much protection given the risks of the project and does not strike an appropriate balance between TO and consumer risk allocation. Adopting the P50 value of risks would generate a reduction of £1.3m from the proposed risk pot.
- We consider that the adjustments we have proposed are appropriate as it would give SHE Transmission sufficient allowance for the risks identified whilst protecting consumers from paying for risks that may not materialise.

We plan to make a decision early next year on the Allowed Expenditure and associated SWW Output after considering responses to this consultation, and any further information available regarding costs at that time.

### **Views invited**

We are seeking the views of stakeholders and interested parties on the proposed project, the TNEI report, and our initial views set out in this letter. In particular, we would welcome feedback on the following areas:

- Do respondents consider that the anticipated increase in transfer capability at sub boundary 10 is the appropriate SWW Output to be specified?

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<sup>11</sup> NEC3 is a standard form of construction contract.

<sup>12</sup> The RIIO arrangements include a sharing factor which essentially splits any overspend or underspend between the TO and consumers.

- Do respondents consider that Quarter 4 of 2015 is an appropriate delivery date for this SWW Output?
- Do respondents agree with our initial views on the proposed adjustment to SHE Transmission's RIIO-T1 Allowed Expenditure?
- Do respondents have any other comments or information that they consider to be relevant for us in our continued assessment regarding these costs and outputs?
- Do respondents have any other comments on our proposed approach and timetable?

## Next steps

Once we have considered the responses to this consultation we anticipate making a decision on the proposed SWW Output and Allowed Expenditure early next year. Any decision would be subject to a licence modification. This will include a statutory consultation on the proposed licence modifications to SHE Transmission's electricity transmission licence. The modification would be intended to amend the licence to reflect any new SWW output, and an associated Allowed Expenditure. This licence obligation would require SHE Transmission to deliver the specified increase in transmission capacity.

Responses to this consultation should be sent **by 13 February 2014**, preferably by e-mail, to Peter Russell, Senior Analyst, Electricity Transmission (**SWW@ofgem.gov.uk**; telephone 0141 341 3953; Ofgem, 3rd Floor, Cornerstone, 107 West Regent Street, Glasgow, G2 2BA).

Unless marked confidential, we will publish all responses by placing them in Ofgem's library and on our website ([www.ofgem.gov.uk](http://www.ofgem.gov.uk)). Any respondents who wish their response to remain confidential should clearly mark the response to that effect and give their reasons for confidentiality.<sup>13</sup>

Any questions about the content of this letter should also be addressed to Peter Russell in the first instance (contact details above).

Yours sincerely

Kersti Berge

**Partner – Electricity Transmission**

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<sup>13</sup> Ofgem shall respect such requests subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

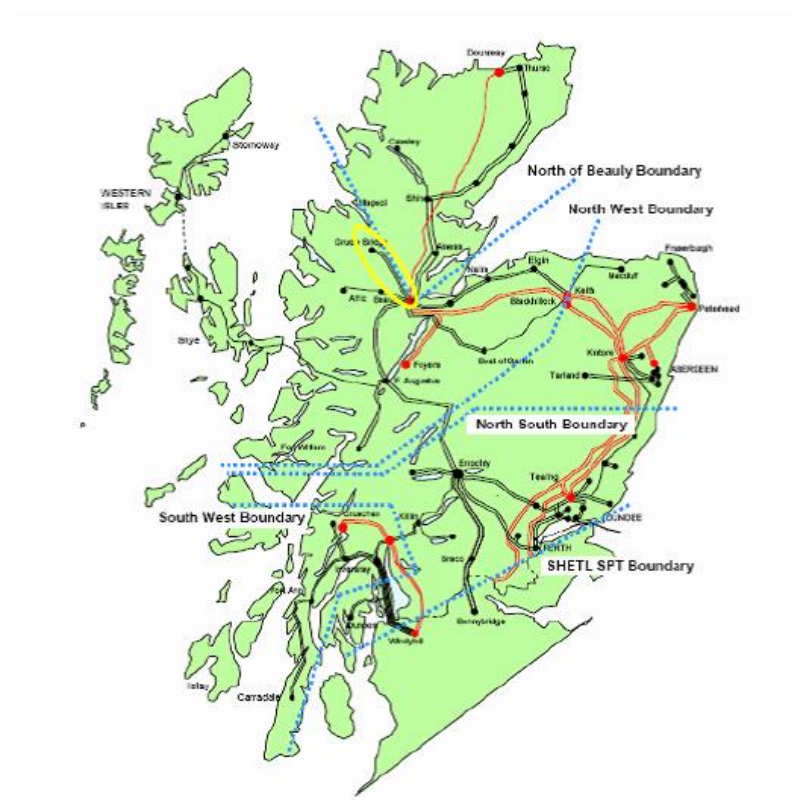


## Annex 1 – Review of the Beaully Mossford Project Assessment

### Summary

This Annex reviews the Project Assessment submission by Scottish Hydro Electric Transmission (SHE Transmission) for reinforcement work under the Strategic Wider Works (SWW) process, implemented under the RIIO-T1 price control. Our assessment has been supplemented by an independent consultancy report by TNEI Services Ltd, published alongside this letter as Annex 2. TNEI's report covered a limited scope, and its conclusions have fed into our analysis of the project to date.

### Background



**Figure 1 - Beaully Mossford Project (highlighted in yellow)**

SHE Transmission is forecasting additional renewable generation across this area, driving the need for reinforcement. SHE Transmission state that additional reinforcement is required for the north west area of Scotland to provide additional grid capacity in accordance with the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) – giving rise to the Beaully Mossford Project. The Gas and Electricity Markets Authority (the Authority) has previously determined on the need for this reinforcement under the Transmission Investment Incentives (TII) arrangements.<sup>14 15</sup>

The Beaully Mossford project has been split into two stages. Stage 1 comprised of the construction of a new 33/132kV substation at Corriemoillie. The construction of the substation allows for the connection of the consented Lochluichart windfarm. Further windfarms are expected to connect later in the current price control period. In 2011 the

<sup>14</sup> Ofgem Decision Letter of 21 January 2011 on requests for funding from 2011/12, including the Beaully Mossford project <https://www.ofgem.gov.uk/ofgem-publications/52723/jan11tiopenletterfinal-2.pdf>

<sup>15</sup> Ofgem's Supplementary Document (1 March 2011) to the Decision Letter of 21 January <https://www.ofgem.gov.uk/ofgem-publications/52719/mar11tisupplementarydocumentfinal.pdf>

Authority approved funding of £13.058m (09/10 prices) for Stage 1 under the TII regulatory arrangements.

Stage 2 of the project is to dismantle the existing 132kV overhead lines (OHL) and tower infrastructure and replace with a double circuit 132kV OHL. The project aims to construct 94 new overhead line double circuit towers over a length of 26km, dismantle 177 existing towers and install 3.5km of underground cable. Under the RIIIO-T1 price control it was agreed that Stage 2 of this project would be assessed under the SWW arrangements.

This Annex sets out our assessment of the efficiency of the Stage 2 project costs, the approach to risk, and procurement process.

## **SHE Transmission's Project Assessment submission**

### ***Overview of SHE Transmission's Costs***

SHE Transmission has put forward the following costs (13/14 prices):

**Table 1 – Summary of SHE Transmission's proposed costs**

<b>Item</b>	<b>£m<sup>16</sup></b>
Project Management	
Regulatory and Consent	
Engineering	
Construction	
Commissioning	
Operations	
Risk	
<b>Total</b>	<b>54.6</b>

In the Project Assessment submission the scope of the works for Stage 2 of the project is described as follows:

- Replacement of existing 132kV OHL from Dunmore to Corriemoillie Substation (where Stage 1 included the construction of the Corriemoillie Substation). This includes:
  - Dismantling of 177 existing 132kV OHL towers and conductors
  - Construction of 94 new 132kV OHL (double circuit rated 338MW summer pre-fault rating) towers and conductors
  - Enabling works to accommodate the new line, including forestry clearance and Network Rail crossings
  - Public road improvements to accommodate the dismantling of the existing OHL and construction of the new OHL
  - Alteration works on existing distribution network to accommodate the new OHL
- Construction of a new sealing end compound at Dunmore and installation of a new 132kV double circuit cable route to the Beaulieu substation
  - Underground cable circuit (2 circuits rated at 391MW continuous summer rating) from Dunmore to the Beaulieu substation
  - Construction of a new sealing end compound at Dunmore
  - Electrical installation at the new sealing end, and circuit modifications at Beaulieu substation, including required control and protection provisions.

<sup>16</sup> Certain commercially sensitive information has been redacted from this Annex.

### Summary of Construction Costs

From Table 1 we can see that the construction costs are the single biggest item at £39.1 million – accounting for around 72% of the total project cost. This can be broken down as follows:

**Table 2 – Breakdown of Construction Costs**

Work Package	£m
Enabling Works / Forestry Clearance / Site Prep	
Public Road Improvements	
Alteration Works	
O/H Lines	
Underground Cables	
Substations	
<b>Total</b>	<b>39.1</b>

Within the construction costs, SHE Transmission has included additional costs for events that have a high likelihood of occurring but for which the associated costs of managing these events are uncertain. These are known as “Provisional Sums”. These include £■■■■m for the OHL works (which includes provisions for slope stability works, tower foundations and delays) and £■■■■m for the underground cable works (including provisions for delays).

OHL and underground cable costs account for over ■■■ per cent of the total construction cost. We have commissioned TNEI to review the unit cost of overhead line and underground cables, and to assess the reasonableness of the proposal put forward in the Beaulieu Mossford plan. Its report is published alongside this letter as Annex 2.

TNEI concluded that both OHL costs and underground cable costs are within its data benchmark range and are therefore deemed to be acceptable. The unit costs assessed by TNEI include Provisional Sums for additional risk.

### Ofgem’s Initial View on Costs

Although the costs fall within TNEI’s benchmark data range, we are not convinced that it is appropriate to include Provisional Sums for some of the uncertain costs that SHE Transmission has identified within the cost base. We consider that this approach implicitly assumes that the uncertain costs will arise and does not take account of the possibility that they might be lower than anticipated. We consider that it is more efficient and better value for consumers to include these in the risk pot for the project at a P50 value. We estimate that this proposed change will reduce the project costs by around £2.9m. Please see below for further detail on our views about SHE Transmission’s risk analysis and the appropriate value at which the cost provision should be evaluated for the risk pot.

### **Risk and Provisional Sums**

SHE Transmission has explained that there are numerous risks within the project. These are outlined below:

- Ground Conditions

SHE Transmission has stated that it had not completed the site investigations prior to the commencement of the procurement process. Recognising this SHE Transmission plans:

- Further ground investigations for 38 new OHL towers
- Slope stability works for new OHL towers and related access tracks
- Ground investigation in relation to cable installation works.

- Landowners

Following SHE Transmission's experience of other projects, it argued that issues have been identified with landowners which increase cost and duration of delivery. This includes refusing entry to land to seek compensation and, amongst others, injurious affection payments<sup>17</sup> in relation to the works. SHE Transmission proposes to mitigate these risks by:

- Securing all wayleaves, deeds of servitude and lease agreements
- Assessment of compensation payments using experience gained from previous projects
- A dedicated Wayleaves Officer as part of the project team.

- Environmental receptors

SHE Transmission argues that environmental receptors will also impact on the cost and delivery of the project. We understand environmental receptors are areas or species that are affected, and potentially harmed, by an activity. SHE Transmission state that although extensive environmental surveys have already been undertaken, these surveys are only accurate at the date at which they are completed. SHE Transmission also state that the changing nature of the environment means new receptors are likely to be identified. To mitigate against this, SHE Transmission's proposals include:

- Provisional Sums for unexpected, or new, environmental receptors - including environmental consultant costs
- Implementation of a Route Access Request process for managing amendments to access tracks, bell mouth locations and tower locations

- Outages

SHE Transmission has stated that the new OHL largely follows the existing one. It states further, that this means the majority of tower erection and stringing works are to take place in the outage seasons, and therefore any issue which affects the outage programme may risk delaying the construction works.

- Cable design and procurement lead

SHE Transmission states that a critical element of the project is the cable delivery. If this is delayed for any reason, including design completion or manufacturer issues, it will affect the rest of the project. This includes the OHL works given the interactions between the areas.

### Risk Allowance

SHE Transmission has added risk events that have a probability equal to or less than a 70 per cent likelihood of occurring to the project risk register. SHE Transmission then undertake a Quantitative Cost Risk Analysis (QCRA), which uses Monte Carlo simulations to determine the project's expected total risk exposure and percentile breakdown. SHE Transmission has requested a risk provision based on the 70<sup>th</sup> percentile (P70) of the QCRA, which equates to a 70 per cent confidence level that the risk provision will not be exceeded.

### Provisional Sums

SHE Transmission argues that some risk events have a probability greater than a 70 per cent likelihood of occurring. It considers that while it is known that these events are highly likely to occur, the frequency and impact are unknown. For these events SHE Transmission has included amounts it terms "Provisional Sums" or, "Additional Scope Items", within the construction works. Examples of items that fall under the Provisional Sums category are slope stability works, tower foundations, tower types, access tracks, excavations, and delay and/or disruption events.

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<sup>17</sup> Compensation for the properties they own being "injured" by the installation of transmission assets.

These have been priced using estimates on a “most likely” basis, supported by “low” and “high” analysis. It accepts that in using “most likely” there is a risk that estimates may be over or under against out-turned costs. Subsequently, for each Provisional Sum an adjusting provision has been made. Adjusting provisions can either increase or decrease the Provisional Sum. Furthermore, adjusting provisions are then analysed using Monte Carlo simulations and incorporated within the overall risk analysis mentioned above.

### *Ofgem’s Initial View on Risk and Provisional Sums*

In terms of the risk provision we consider it to be more appropriate that this should follow the principles outlined in the assessment of the Kintyre Hunterston project (the first project to pass through the SWW process, also submitted by SHE Transmission) and that the risk provision is based on the median percentile (P50) of the Quantitative Cost Risk Analysis. As was stated in our decision on the Allowed Expenditure for the Kintyre Hunterston project<sup>18</sup>, we consider that a P70 provision would provide SHE Transmission with a level of protection that is too high at the expense of consumers. We consider that the risk provision should also take into account the other mechanisms in place, such as the Cost and Outputs Adjusting Event which allows for additional funding in the event that a specific event has a material impact on the scope of the project, and the sharing factor SHE Transmission has within the current price control. These mechanisms mean that SHE Transmission is not fully exposed to the downside of the risks it has identified. Based on these principles, using a P50 value of the project risks rather than a P70 value results in a £1.3m reduction in the proposed risk pot for the project.

In terms of the Provisional Sums that SHE Transmission has proposed, we understand that this approach implicitly assumes that the uncertain costs would arise and does not take account of the possibility that they might be lower than anticipated. We consider it would be more efficient that SHE Transmission share the potential impact of these risks with consumers. It is our view that SHE Transmission should be incentivised to manage the impact of these events if they occur, and that consumers should be protected from paying for risks that do not materialise. Therefore, we are proposing that the provision for the uncertain impacts of such events are treated the same as other project risks, and included in the risk analysis for the project at P50 values rather than Provisional Sums. In our view, this will help to ensure an appropriate balance of risk between the TO and the consumer. We estimate that this change would reduce the project costs by £2.9m. We will continue to work with SHE Transmission to update the final risk pot for the project once SHE Transmission has evaluated these events within its Monte Carlo risk analysis at P50 values.

### ***Procurement***

For this project, SHE Transmission selected a multi-contract strategy, as it considered this would offer the most cost effective solution, given the complexity and risks involved in the proposed works. The table below outlines the form of the contract for each principal activity.

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<sup>18</sup> Decision on the proposed Kintyre-Hunterston reinforcement under the SWW arrangements:  
<https://www.ofgem.gov.uk/publications-and-updates/decision-proposed-kintyre-hunterston-reinforcement-under-electricity-transmission-price-control-riio-t1-strategic-wider-works-sww-arrangements>

**Table 3 – Form of contract:**

Contract	Type	Contract Conditions	Option
Overhead Line Main Works	Design and Build	NEC3	B (Re-Measure)
Cable Line Main Works	Design and Build	NEC3	B (Re-measure)
Public Road Works	Client Design / Contractor Construct	NEC3	A (Lump Sum)
Forestry Works	Construction	NEC3	A (Lump Sum)
Sealing end Works	Design and Build	BEAMA	Lump Sum

As well as the five main contracts SHE Transmission procured services of various consultants through a Framework Agreement, using a NEC3 Professional Services Contract.

Due to the experience gained on the Beaulieu Denny Project, where objections were raised and a public enquiry resulted, SHE Transmission initially made the decision not to undertake site and ground investigation work, so as not to incur abortive costs should consent not be granted. This resulted in the OHL and underground cable contract scopes for the Stage 2 works being developed alongside the site and ground investigations. Consequently, SHE Transmission has proposed an NEC option B contract, with SHE Transmission taking on the risk of any deviations which will arise from the re-measurement, which will be covered by the Provisional Sums. This is a similar issue to that raised in the Kintyre Hunterston project, which highlighted the fact that it would have been more efficient to complete the ground investigation works prior to tendering, as this would allow suppliers to price more accurately when tendering. This would have reduced the uncertainty of the Provisional Sums required to cover such deviations.

#### Ofgem's initial view on procurement









Our review of the information provided by SHE Transmission for the Beaulieu Mossford project to date suggests it adopted a similar process to that used in the Kintyre Hunterston project. We consider this to be a relatively robust process on the whole based on SHE Transmission's competitive tender processes. However, one potential weakness in its procurement process is that the Site Investigation (SI) works were not completed until after the tendering round was complete. This has potentially led to an inefficiency in the process as suppliers have had to tender without complete information on the full scope of the works, which otherwise might have enabled them to price more accurately. This is a similar issue to that highlighted in our assessment of the Kintyre Hunterston project.

Ahead of reaching our decision on the Allowed Expenditure in early 2014 we will review all of the EPC contracts that SHE Transmission has let. We do not expect these to be materially different to the tender costs considered in our Project Assessment for Stage 2.




#### **Summary of Ofgem's Initial Views**

Our assessment of the three main areas considered in this Annex is summarised in the following RAG (Red/Amber/Green) table. It shows our position on the initial review of the Project Assessment submission, which enabled us to focus our approach in line with the RIIO principle of assessing submissions in a proportionate manner. This initial review was followed by a series of questions and responses, and meetings with the TO, to enable us to come to an initial view for the purposes of this consultation on the Project Assessment for Stage 2 of the Beaulieu Mossford reinforcement project.

**Table 4: Summary of Ofgem's assessment:**

	Procurement	Risk	Project Costs
<b>Initial review of the submission</b>			
<b>Initial views</b>	 		 

**RAG table key**

-  Indicates an area where a reduction to the requested expenditure is recommended.
-  Indicates an area of concern or where improvements could be made.
-  Indicates a positive assessment.





**Procurement:** It is our initial view that SHE Transmission's procurement strategy is a robust process. However, a weakness in its procurement process is the carrying out of the tendering process before the completion of the investigation works, which has led to an inefficiency in the process (hence the green/amber rating above).

**Risk:** SHE Transmission are seeking a risk allowance based on P70 (meaning that there is a 70 per cent probability that the TO will spend less on these risks than it has requested). Ofgem's initial consideration is that this is inappropriate given the risks of the project, and recommend a risk allowance based on P50, for which we have estimated an associated reduction for the purpose of this consultation.

**Project Costs:** Ofgem's initial view is that the overall project costs seem reasonable with the exception of the amount SHE Transmission has requested for uncertain costs associated with particular events that it considers have a relatively high likelihood of occurring (Provisional Sums), hence the amber/red rating above.

A summary of TNEI's findings, and the scope of the assessment it has undertaken, is shown in the following RAG table (the full report is published alongside this letter as Annex 2). Again, this table shows TNEI's initial review of the Project Assessment submission, followed by its conclusions on each area after a series of questions and responses, and meetings with the TO, to help inform its assessment.

**Table 5: Summary of TNEI's assessment:**

	Design efficiency	Equipment cost	Construction programme
<b>Initial review of the submission</b>			
<b>Initial views</b>			

**Design efficiency:** TNEI concluded that the proposed solution appears to be a fit for purpose economical solution, with a robust construction solution in order to deliver the capacity increase identified as required in the Needs Case.

**Equipment costs:** TNEI concluded that these costs appear reasonable overall, and are largely determined by the construction costs which are themselves largely contained within two Engineering Procurement and Construction (EPC) contracts.

**Programme:** TNEI concluded that the construction programme appeared to be well thought out and has, with the exception of a number of minor details, the agreement of the two main contractors.

Based on the scope of assessment carried out by TNEI, no adjustment to the annual ex-ante funding allowance was recommended. Based on Ofgem's assessment of the project, our initial view that we are consulting on is to make the following reductions to better reflect value for money for the consumer:

- £-1.3m for the Risk Budget
- £-2.9m for Provisional Sums

This would result in a total allowance of £50.5m for the Beaulieu Mossford Stage 2 Project. Table 6 on the next page profiles these allowances over the RIIO price control period.



**Table 6 – Proposed Revised Allowances for the Beaulieu Mossford project**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Total
	£m	£m	£m	£m	£m	£m	£m	£m	£m
<b>SHE Transmission totex</b>	689,113	15,393,407	25,698,060	12,127,104	626,399	38,000	38,000	38,000	54,648,083
<b>Reduction for P50 Risk Budget</b>	(385,701)	(563,637)	(316,090)	-	-	-	-	-	(1,265,429)
<b>Reduction for Provisional Sums</b>	-	(967,429)	(1,660,967)	(291,384)	-	-	-	-	(2,919,780)
<b>Total reductions</b>	(385,701)	(1,531,066)	(1,977,057)	(291,384)	-	-	-	-	(4,185,208)
<b>Revised totex as per Ofgem</b>	303,412	13,862,341	23,721,003	11,835,720	626,399	38,000	38,000	38,000	50,462,875