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Direct Dial: 020 7901 7046
Email: Thomas.Johns@ofgem.gov.uk
Date: 11 November 2016

Dear Colleague,

Minded-to consultation on SHE Transmission's additional funding request and opening asset value for the Beaully-Denny electricity transmission project

Beaully-Denny is an electricity transmission project to upgrade the capacity of the key strategic line between Beaully in the north of Scotland and Denny in central Scotland. The project was developed jointly by transmission owners (TOs) SHE Transmission and SP Transmission (SPT) to reduce generation constraints and losses on the network, and facilitate the connection of additional renewable generation. The project has been delayed by a public enquiry and subject to additional consenting requirements by both local councils and the Scottish government. In November 2015 the project was energised ahead of final reinstatement works due to be complete in the autumn of 2016.

SHE Transmission expects to overspend by £62.1m¹ on its part of the project. This consultation sets out our proposal that only £26.9m of this additional expenditure meets the criteria to be recovered through revenue allowances during construction and the five-year post-construction period. It also sets out our view that the project's opening asset value following construction should be increased from £450.4m to £453.9m² to reflect the additional £26.9m. This letter also sets out that the construction period should be extended by one year to reflect that project delays now mean that certain reinstatement works had to be completed within 2016/17. This opening asset value determines the project's revenue allowance for the 5 year period following construction. Under the terms of the project's funding mechanism³ (see further below), the remaining £35.3m will only be reflected in revenues from the end of the post-construction period.

The level of overspend identified in this consultation relates to signed contract figures. Final independently audited costs for the project will be reported to us by SHE Transmission later this winter. We will ensure that any final cost reductions identified at that stage will be reflected in our final determination on this funding request by the end of January 2017.

We are seeking your views on our proposal in the following areas:

1. Do you agree that the additional £26.9m should be reflected in revenues during the construction and post-construction periods?

¹ All figures in this letter are represented in £m 09/10 unless otherwise stated

² For the purposes of the TIRG licence condition, in which figures are shown in pounds thousand, this figure is represented as £453,903

³ The project is funded through the TIRG mechanism, which is set out in condition 3J of SHE Transmission's special licence conditions

2. Do you agree that the Opening Asset Value for SHE Transmission's part of the project should be set at £453.9m
3. Is there any other relevant information that we should take into account before finalising our decision?

Please submit your response by 9 December 2016, preferably by email, to Thomas Johns (thomas.johns@ofgem.gov.uk). We will also accept postal submissions. Please send these to:

Thomas Johns
Electricity Transmission RIIIO Team
Ofgem
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Background on the funding mechanism

The Beaully-Denny project is funded under the Transmission Investment for Renewable Generation (TIRG) mechanism⁴. The TIRG licence mechanism allows Transmission Owners, under specific circumstances, to request additional construction funding for efficient overspends outside of their control. The TIRG licence condition refers to this as an Asset Value Adjusting Event (AVAE). An AVAE can only be awarded where the TO is able to demonstrate that additional efficient expenditure has been incurred on the project due to changes in the scope of work required on the project.

The TIRG mechanism also requires us to set the Opening Asset Value for the project. This is the figure that determines project revenues for the five year period following the end of construction. The OAV sets the revenue for the post-construction period, which is designed to start the year after a project is commissioned. During this period, the TOs can retain the value of efficiency savings or losses against the allowed construction expenditure for the project. This gives TOs an incentive to deliver projects efficiently.

SHE Transmission's additional funding request and our findings

In February 2016, SHE Transmission submitted a request for its full £62.1m overspend on the Beaully-Denny project to be considered for an AVAE. Following our review of this submission, we consider that only £26.9m should be considered as eligible for an AVAE. This is because we do not consider that the remaining costs have been incurred as a result of changes in the scope of works required for the project. The scope of the AVAE is limited to changes in scope. This helps ensure that the efficiency incentive remains for elements of the project that were previously identified.

SHE Transmission originally requested to submit an AVAE request in 2015. This followed adjustments to SP Transmission's delivery programme to reflect additional mitigation measures it was required to undertake on its part of the project as a result of the public enquiry. SHE Transmission identified knock-on implications for its own work on the project, as well as a number of additional costs that it felt were eligible for an AVAE adjustment. At that time we determined that this request should not be considered until the project had

⁴ "The TIRG mechanism" and "The TIRG licence condition" are both used in this letter to refer to Special Condition 3J of SHE Transmission's electricity transmission licence

been energised⁵. This was because we had already committed to carry out a cost review at the end of construction on specific aspects in our previous funding decision on SHE Transmission's part of the project⁶.

SHE Transmission's final submission was subsequently received in February 2016. Following our assessment we found that there was no evidence to suggest that the additional costs incurred represented inappropriate or inefficient expenditure. However, we challenged SHE Transmission to provide further evidence to indicate the extent to which the drivers of its overspend meets the criteria for additional funding. We specifically focused on whether the cost increases were driven by changes in scope. This resulted in SHE Transmission re-evaluating its request, and agreeing that £20.1m of the project overspend did not meet this criteria.

Across the remaining £41.9m overspend on the project, we have been able to identify specific cost increases that we consider have been driven by changes in scope, and other cost increases that we do not. We have identified £16.9m that we consider relates directly to changes in the scope of work that SHE Transmission needed to deliver, and £1.9m that we consider does not relate to changes in the scope of work required. The remaining £23.1m relates to costs incurred through commercial negotiation and the settlement of compensation claims with SHE Transmission's overhead line contractor. These costs were incurred in order to limit SHE Transmission and its customers' exposure to the cost of ongoing project delays. In our view the renegotiation with its contractor was driven by a range of factors, rather than just those that specifically related to changes in scope. We think that these contractual costs should only be incorporated in the AVAE to the extent that the remaining cost overruns were driven by changes in scope.

We therefore propose that the AVAE should only partially reflect the £23.1m relating to commercial negotiation with SHE Transmission's contractor. Based on the proportion of the other cost overruns that we have found to relate to changes in scope, we consider that £10.0m of the £23.1m should be included in the AVAE. How this value has been calculated is shown in table 2 in Appendix 1. Our detailed assessment of each of the drivers for SHE Transmission's overspend against the AVAE criteria can also be found in Appendix 1.

Application of the AVAE

Our proposal is that the £26.9m adjustment above should be applied in line with SHE Transmission's profile of expenditure on the project. The impact of this on SHE Transmission's allowed revenue is identified in Appendix 2.

Adjustment to the project's OAV and incentive period revenue

The opening asset value sets a TIRG project's revenue allowance for the five years following construction. In order to maintain the efficiency incentive within the TIRG mechanism, revenues in this period are based on allowed construction expenditure rather than actual expenditure. As the AVAE is an adjustment to the project's allowed construction expenditure, we consider it is appropriate, and in keeping with the principles of the TIRG mechanism to adjust the OAV and post-construction revenues for the project to reflect the

⁵ <https://www.ofgem.gov.uk/publications-and-updates/post-construction-review-she-transmission-s-beaully-denny-project-proposed-process-and-timings>

⁶ <https://www.ofgem.gov.uk/sites/default/files/docs/2011/09/beaully-denny-shetl-avae-determination-final.pdf>

AVAE. The tables within Appendix 2 identify the current opening asset value, £450.4m and our proposed updated figure of £453.9m. It also sets out our proposals for the incentive period revenue allowance.

Our proposal is that there should be an extra year of construction to reflect the delay caused by changes in SPT's project programme which has led to SHE Transmission incurring extra costs during the 2016/17 reporting year. These costs have only been incurred as a result of changes to the SP Transmission programme for the project. The result of our proposed additional year of construction is that the post-construction incentive period should start in 2017/18 rather than 2016/17. This aligns the timing of the construction and post-construction periods across both SHE Transmission and SP Transmission elements of the project.

Next Steps

We welcome views from any interested parties regarding the issues raised in this letter. We will use these to inform our final determination of the asset value adjusting event and opening asset value. We anticipate publishing our decision in January 2017. If you have any queries regarding this consultation, please contact Thomas Johns (thomas.johns@ofgem.gov.uk).

Yours faithfully,

Kersti Berge
Partner, RIIO Networks

Appendix 1 – SHE Transmission’s funding request and our findings

In February 2016 SHE Transmission submitted its AVAE request for an additional £62.1m in construction funding. The drivers for this increase were identified by SHE Transmission as:

- Additional cost of tower foundation and slope stability works - £13.6m
- Impact of Scottish Power Transmission reprogramming its works - £5.2m
- Additional cost of securing land access - £8.8m
- Other cost increases - £1.6m
- Costs of renegotiating contract with principle contractor - £32.9m

For us to determine that an AVAE has occurred, we must be satisfied that:

1. The works result from a relevant amendment to the scope of construction works;
2. The costs in the licensee’s notice are expected to materially increase or decrease the average asset value for the relevant construction years compared to the existing allowance;
3. The costs are expected to be incurred or saved efficiently; and
4. The costs cannot otherwise be recovered under the TIRG revenue allowance

The table below identifies the costs originally asked for, those that SHE Transmission subsequently accepted should not be considered, and our findings on the remaining costs:

Table 1 – Breakdown of SHE Transmission funding request and our proposed revenue adjustment (£m 09/10 prices)

Area of overspend	Original request	SHE Transmission adjustment to request	Total after SHE Transmission adjustment	Ofgem adjustment	Proposed Adjustment
Tower Foundation/ Slope stability	13.6	0.0	13.6	-1.9	11.7
SPT re-programming	5.2	0.0	5.2	0.0	5.2
Land Access	8.8	-8.8	0.0	0.0	0.0
Other Costs	1.6	-1.6	0.0	0.0	0.0
Contractual negotiation costs	32.9	-9.8	23.1	-13.1	10.0
Total	62.1	-20.1	41.9	-15.0	26.9

Reasons for our findings:

Below we provide an overview of each of these areas of cost alongside our findings.

Additional cost of tower foundation and slope stability works - £13.6m

Once access had been gained for tower sites and other locations along the route, detailed survey data and site investigations identified that additional cost and work was required to stabilise the new towers and maintain slope stability.

In the case of tower foundations, the type of terrain along a route will have a significant bearing on the type and subsequent cost of its foundations. SHE Transmission found that

ground conditions, including the level of rock along the route, were worse than expected. This meant that it had to install significantly more mini-pile and steel-driven tube foundations than it had anticipated. These are more robust foundation designs that are more expensive than the conventional foundation design usually employed. SHE Transmission's original estimate, based on a small sample of sites indicated that 67 mini-pile foundations, and zero steel-driven tube foundations would be required across the 539 foundations that were actually delivered. This sample was based on conventional design assumptions for foundation design, British Geological Survey records, site visits and peat probing, but not the more detailed site investigation that became available only once full access to the tower sites was secured. In practice, 221 had to be mini-pile and nine steel-driven tube.

We have reviewed the cost increase relating to the change in foundation design, and the supporting justification from SHE Transmission's consultants, and find that the additional costs incurred on foundation work relate to a change in the scope of work required, above and beyond the level previously funded in SHE Transmission's construction allowance. We therefore consider that the associated additional costs due to foundation design changes are efficient and should be considered a change of scope that is eligible for additional funding through an AVAE.

In the case of slope stability, additional works were required that had not been expected. At 55 sites, owing to the difficulty of the terrain in which the project was situated, additional work was required to protect construction workers or public roads from materials dislodged during construction above them.

We consider that this qualifies as additional work above and beyond the scope anticipated and funded at the start of the project. We also consider that there is no evidence that the associated cost incurred are inefficient, and therefore propose that this should be funded through an AVAE.

Our analysis found that £1.9m of the £13.6m related to interface and land access delays. We do not consider that this is related to an additional scope of work and so therefore should not be incorporated within the AVAE.

Impact of Scottish Power Transmission reprogramming its works - £5.2m

In December 2014, we approved an AVAE for SP Transmission's work on the project. This included an extension of the construction period to reflect a need to re-programme the project due to additional mitigation works and delays that had occurred through the public enquiry process. This had a knock-on impact on SHE Transmission's project work.

The interface with SP Transmission's network occurs at the very south of SHE Transmission's work on the project. Therefore, when the re-programming was identified, SHE Transmission adjusted the order in which it completed its work to minimise the impact of SP Transmission's changes on to its work by re-deploying staff from its overhead line contractor, to the central section of the new line. However, due to the extent of the impact, SHE Transmission was unable to avoid some delay costs being passed on by its contractor. SHE Transmission also carried out additional works in the central section to ensure that security of supply was maintained on SP Transmission's networks during the re-phasing of the works.

SHE Transmission was able to clearly identify the associated costs incurred as a result of the change to SP Transmission's programme and demonstrated that it had negotiated to reduce its exposure to the cost of delays incurred as a result of the SP Transmission reprogramming. Our findings are that the additional costs relating to the SP Transmission reprogramming should be considered as a change in the scope of the work that it needed to deliver as part of the project. We therefore find that the associated costs should be adjusted through an AVAE.

Additional cost of securing land access - £8.8m

Negotiating access to privately-owned land affected by the project was a difficulty that SHE Transmission faced, particularly in the early stages of its project work. Ongoing negotiations meant that SHE Transmission had to start its construction work at various points along the new line, rather than sequentially working down from Beaulieu towards Denny as it had planned. This, along with the lengthening of negotiation periods, due to the increased use of land agents by land owners and other programme delays, meant that access was required to certain areas of land at times that are usually avoided, such as shooting season. The overall impact of this was to increase the cost of gaining land access.

In addition, a number of landowners sought to pursue claims relating to the long-term impact of the new line on the value of their property once completed. These claims are often referred to as "Injurious Affection" claims. SHE Transmission's original strategy was to secure land access through compensation for construction disturbance before settling the injurious affection claims once the project became operational. In practice, certain landowners withheld access to their land until their injurious affection claims had been dealt with. This meant that SHE Transmission was sometimes faced with a decision on whether to pay compensation upfront to land owners, or incur additional contract costs from its overhead line contractor due to its inability to access sites.

Following our initial review of these additional costs, we challenged SHE Transmission to justify why it felt that these costs reflected a change in the scope of the work that needed to be delivered, rather than what appeared to be additional costs for achieving the expected access to land. Following further consideration, SHE Transmission now accepts that these costs do not meet the criteria for funding through an AVAE. We therefore propose that these costs are not reflected in revenue allowances during construction and the post-construction period.

Other cost increases - £1.6m

This cost category covers a range of small cost areas of which the scope was not clearly defined in SHE Transmission's submission. SHE Transmission subsequently concluded that these costs do not meet the criteria for inclusion within an AVAE and therefore withdrew them from consideration.

We agree that these costs should not be reflected in an AVAE as there is no evidence to suggest that they relate to a change in scope.

Costs of renegotiating contract with principle contractor - £32.9m

In January 2011 SHE transmission awarded the contract for the design and construction of the Beaulieu Denny overhead line to a contractor⁷. In order to secure a reasonable price for the contract, SHE Transmission decided to retain a number of key risks, including the risk of unforeseen ground conditions and land access restrictions. The initial contractual arrangement was established as a NEC Option C Target Price Agreement and envisaged a mechanism for sharing the responsibility for cost overruns with the principal contractor (the "pain-gain mechanism").

During the first years of construction the Contractor raised a number of claims for delays and changes to the scope of works which exposed SHE Transmission and consumers to significant cost increases. In particular, the costs associated with these claims were forecast to increase the overall cost of the overhead line contract beyond the level that would trigger SHE Transmission liability under the pain-gain mechanism. During the same period, it was also concluded that the original NEC Option C Target Price Agreement, under which the majority of risks were assigned to SHE Transmission, was no longer an effective approach for the project.

In 2013 SHE Transmission began a period of negotiation with the Contractor. Options for changing the contract from NEC Option C Target Price to NEC Option A Fixed Price were identified and discussed between the parties. As a result, new contractual arrangements (the "supplemental agreement") were put in place. The supplemental agreement capped SHE Transmission and consumer liability under the pain-gain mechanism. It also transferred residual risks to the Contractor and introduced a further incentive mechanism to help get the project back on schedule. SHE Transmission originally sought £32.9m of additional funding for the costs associated with negotiating the supplemental agreement. A breakdown of this £32.9m across the specific aspects of the supplemental agreement is presented below with our findings.

Pain-gain mechanism – £15.8m

Under the original contractual arrangement, SHE Transmission retained a share of liability for cost overruns between 100% and 110% of the value of the overhead line contract. Whilst the supplemental agreement was being negotiated, it became apparent the cost of the overhead line contract was forecast to exceed this threshold, triggering SHE Transmission's share of liability. In order to contain the exposure to further overrun, SHE Transmission decided to cap their liability under the Option C Target Price Agreement by removing the pain-gain mechanism. The cost of the cap was discussed with the Contractor and agreed at £15.8m.

We have reviewed these costs along with the supporting justification from SHE Transmission's consultants. Whilst we are satisfied that these costs are appropriate - SHE Transmission was largely successful in containing further pain-gain liability for the SP Transmission reprogramming overrun - we believe the costs are only partially driven by additional construction works. In our view the drivers for SHE Transmission's liability under the pain-gain mechanism were changes to the work programme as well as the various delays experienced by the project, rather than just changes in the scope of works. We therefore propose that these contractual costs should only be incorporated in the AVAE to

⁷ Referred to as "the Contractor" for the rest of this letter

the extent that the remaining cost overruns were driven by changes in scope. We therefore propose that £6.8m of the £15.8m relating to the removal of the pain-gain mechanism should be included in the AVAE. This reflects the proportion of the remaining costs which don't relate to the contract negotiations that we consider were driven by changes in scope (43.3%). Table 2 below sets out how this figure was calculated.

Transfer of residual risks to the Contractor – £9.8m

Under the NEC Option C Target Price Agreement the majority of project risks were sitting with SHE Transmission. In order to achieve a more suitable risk allocation, SHE Transmission and the Contractor undertook a detailed assessment of project risks which resulted in a number of risks being included into the supplemental agreement, with the intention they would be transferred to the principal contractor. Contract risks, 1 month access delay risks and residual landowner and outage delay risks were amongst the risks transferred to the Contractor. SHE Transmission incurred in £9.8m of additional costs associated with de-risking their contractual position.

Following our initial review of these additional costs, we challenged SHE Transmission to justify why it felt that these costs reflected a change in the scope of the work that needed to be delivered, rather than what appeared to be additional costs for achieving a more favourable risk position. Following further consideration, SHE Transmission now accepts that these costs do not meet the criteria for funding through an AVAE. We therefore propose that these costs are not reflected in revenue allowances during construction and the post-construction period.

Incentive mechanism – £7.3m

In its initial AVAE submission, SHE Transmission sought funding for a number of costs incurred in relation to additional foundation works which were required after detailed investigations were carried out and ground condition became known. Amongst these costs, £7.3m were identified as costs associated with "Programme changes".

After discussing these additional costs with SHE Transmission, we found they were not directly related to foundation work. SHE Transmission has explained the additional costs are associated with an incentive mechanism which was agreed as part of the negotiation of the supplemental agreement and that was required in order to reach a settlement value with the Contractor. SHE Transmission has explained the costs have only been allocated to foundations as they reflect the commercial issues that arose from the change in scope of construction works and programme delay events which arose during the initial stage of the project, when foundation work was the main construction activity.

In our view these additional costs have been incurred in order to settle the value of the new agreement with the Contractor, which means they are predominantly driven by historical disputes over delays and changes to the work programme, rather than just changes to the scope of works. We therefore propose that these contractual costs should only be incorporated in the AVAE to the extent that they are driven by changes in scope. We therefore propose that £3.2m of the £7.3m relating to "Programme changes" should be included in the AVAE. This reflects the proportion of the remaining costs which don't relate to the contract negotiations that we consider were driven by changes in scope (43.3%). Table 2 below sets out how this figure was calculated.

Table 2 – Calculation of percentage of contract renegotiation costs that we consider driven by changes in scope

	Total overspend (£m)	Total cost to be included in AVAE (£m)	Percentage of total cost to be included in AVAE (%)
Additional cost not driven by changes in scope	22.1 ⁸	0	0%
Additional cost driven by changes in scope	16.9	16.9	100%
Subtotal	38.9	16.9	43.3%
Remaining contractual costs:	23.1	=43.3% × 23.1 = 10.0	
FINAL TOTAL	62.1	26.9	43.3%

⁸ This figure is made up of the £20.1 identified by SHE Transmission, plus the £1.9m we identified within the additional cost of tower foundation and slope stability works

Appendix 2 – Proposed Adjustments⁹

The table below shows how our proposed expenditure allowance compares to the previous funding decision on the project and the total expenditure that SHE Transmission has actually incurred on the project.

Table 1 – Previous expenditure allowance, actual expenditure and our proposed adjusted expenditure allowance (£k)

Year:	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	TOTAL
2011 Funding decision (04/05 prices)	49,610	97,902	122,262	95,194	67,860	23,172		456,000
2011 Funding decision (09/10 prices)	56,892	112,272	140,208	109,167	77,821	26,573		522,933
Actual expenditure (09/10 prices)	28,123	111,031	170,693	140,340	90,604	32,410	11,873	585,074
Proposed adjusted allowance (09/10 prices)	26,428	104,340	160,407	131,883	85,144	30,457	11,158	549,817

The calculation of revenue during the construction period is derived from the average value of the assets in place each year after depreciation. The tables below demonstrate the calculation of the average asset value based on the previous funding decision in 2011 and our proposal, in order to demonstrate the adjustment to the input that adjusts revenue within the calculation of SHE Transmission's allowed revenue.

Table 2 – Average asset value derived from previous 2011 funding decision (£k 2009/10 prices)

Year:	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	
Opening	-	56,892	166,319	298,069	391,768	448,662	
Additions	56,892	112,272	140,208	109,167	77,821	26,573	
Depreciation	-	2,845	8,458	15,469	20,927	24,818	
Closing	56,892	166,319	298,069	391,768	448,662	450,417	
Average asset value	28,446	111,606	232,194	344,918	420,215	449,539	

Table 3 – Average asset value derived from proposed adjustment to construction funding (£k 2009/10 prices)

Year:	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Opening	-	26,428	129,447	283,316	400,640	464,631	469,678
Additions	26,428	104,340	160,407	131,883	85,144	30,457	11,158
Depreciation	-	1,321	6,538	14,559	21,153	25,410	26,933
Closing	26,428	129,447	283,316	400,640	464,631	469,678	453,903
Average asset value	13,214	77,938	206,381	341,978	432,636	467,154	461,790

AVAE	-15,232	-33,668	-25,813	-2,940	12,421	17,615	24,447
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⁹ All figures in Annex 2 are presented in £ thousands in 2009/10 price basis

Table 4 – Average asset value during efficiency period derived from previous 2011 funding decision (£k 2009/10 prices)

Year:		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Opening Asset value	450,417						
Opening		450,417	424,270	398,123	371,977	345,830	
Additions							
Depreciation		26,147	26,147	26,147	26,147	26,147	
Closing		424,270	398,123	371,977	345,830	319,683	
Average asset value during efficiency period (ETIRGC_t)		437,343	411,197	385,050	358,903	332,757	

Table 5 – Average asset value during efficiency period derived from proposed adjustment to construction funding

Year:		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Opening Asset value	453,903						
Opening			453,903	426,412	398,921	371,430	343,939
Additions							
Depreciation			27,491	27,491	27,491	27,491	27,491
Closing			426,412	398,921	371,430	343,939	316,448
Average asset value during efficiency period (ETIRGC_t)			440,157	412,666	385,175	357,685	330,194