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Date: 8 August 2018

Colleague,

Consultation on our assessment of National Grid's proposal for reducing visual amenity impacts in the Dorset Area of Outstanding Natural Beauty

1.0. We are consulting on our assessment of a funding request by National Grid Electricity Transmission (National Grid) to deliver a new Enhancing Pre-existing Infrastructure (EPI) output under the RIIO1 price control.

1.1. National Grid has requested £118m[1] in total to replace a section of 8.25km of 400kV overhead line with 8.8 km of underground cable in the Dorset Area of Outstanding Natural Beauty (AONB) and deliver other associated works by 2022.

1.2. Having reviewed National Grid's submission we've assessed:

- National Grid's fulfilment of the key commitments of its Visual Impact Provision (VIP) policy. This includes working with stakeholders to identify and prioritise the Dorset AONB mitigation project to deliver an EPI output.
- National Grid's proposed project costs of £118m[2].

1.3. We think that the majority of the project costs are efficient. However, we consider that there are a few areas where costs are not justified by the evidence National Grid has provided. Therefore we are proposing a reduction of approximately £2.2m in the project costs.

[1] Unless otherwise stated, all values are in 2017/18 prices
[2] Please note, in 2009/2010 prices, the total project cost requested is £92.6m and our proposed reduction is £1.7.

Consultation questions

2.0. We are seeking your views on our assessment and our proposed efficient cost for National Grid to deliver the Dorset AONB mitigation project. Please email your response to the following questions to Cissie.Liu@ofgem.gov.uk by 7 September 2018.

2.1. Based on the information in this consultation, do you agree with our assessment of National Grid's approach in undertaking the Dorset AONB mitigation project? In particular, we are looking for feedback regarding our approach on assessing the following elements:

- implementation of the VIP policy,
- project benefits,
- technical scope,
- procurement process and delivery strategy; and,
- risk management.

2.2. Based on the information in this consultation do you agree with our assessment of proposed efficient costs for the Dorset AONB mitigation project?

2.3. Do you have any other comments or information relevant to our assessment?

Background on RIIO1 Enhancing Pre-existing Infrastructure (EPI) outputs

3.0. As part of the RIIO1 price control, we introduced a new policy for electricity transmission owners to reduce the visual impact of pre-existing infrastructure in nationally designated areas[3]. The policy applies to infrastructure in the following designated areas: National Parks, Areas of Outstanding Natural Beauty and National Scenic Areas. The expenditure cap for all mitigation projects that come forward under the scheme during the RIIO-T1 price control is £500m in total.[4] The deliverables from these mitigation projects are known as EPI outputs.

3.1. An electricity transmission owner (TO) can propose new EPI projects and request funding for these under its price control. However, before a TO can request funding for new EPI projects, it must have in place a policy in relation to methods of working with stakeholders to select projects in its respective transmission areas.[5]

3.2. When we receive a funding request for a specific mitigation project we assess:

- whether in proposing a project, the TO can demonstrate that it has complied with its policy, in particular in how it has engaged with stakeholders to identify, prioritise, and select projects; and,
- whether the proposed costs for delivering the project are economical and efficient.

3.3. If applicable, modification will be made to the transmission's owner's licence for the EPI output, including the amount of allowed expenditure.

[3] Pre-existing transmission infrastructure is defined as network equipment such as lines and towers that are part of the licensee's transmission network as at April 2013.
[4] The level of the expenditure cap was informed by a survey of households on the amount they would be willing to pay to reduce the effects of pre-existing transmission infrastructure on the visual amenity of designated areas.
[5] We approved National Grid's Visual Impact Provision policy in 2013. A copy of our decision letter is available on our website: https://www.ofgem.gov.uk/publications-and-updates/response-our-consultation-national-grid-electricity-transmission%E2%80%99s-proposed-visual-impact-provision-policy

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Overview of the Dorset AONB mitigation project

4.0. The scope of the mitigation project submitted encompasses the following within the Dorset AONB boundary:

- replacing a section of 8.25km of a 400kV double circuit overhead line (OHL), known as the 4YA, (and 22 pylons) with 8.8 km underground cable in the Dorset AONB area. The OHL runs from northwest of Winterborne Abbas to south of Friar Waddon Hill inside the boundary of the Dorset AONB[6];
- installing two new sealing end compounds (SEC) to connect the new section of underground cable to the existing overhead line;
- installing reactive compensation equipment to address the potential system voltage problems caused by increased capacitance due to the underground cables; and,
- two underground diversions of a 33kV distribution network overhead line and associated fibre optics cable near the southern SEC for safety reasons. These are undertaken by Scottish and Southern Energy Networks (SSEN).

4.1. National Grid plans to complete the project by 2022.

Our assessment of the Dorset AONB mitigation project

Our Approach

5.0. In our assessment we have reviewed National Grid's submission, as well as supplementary responses provided by NGET to our follow up queries. We've examined National Grid's submission to verify the project meets the criteria set out in Special Condition 6G.13[7] and NGET's VIP policy document. As part of this, we have looked at the following aspects of the Dorset AONB mitigation project:

- the VIP policy project selection process;
- project benefits;
- technical scope;
- National Grid's procurement process for tendered elements of project and delivery programme;
- National Grid's approach to risk and project management; and,
- the efficiency of costs (development, tendered, non-tendered).

5.1. We reviewed the scope of works proposed to ensure it is appropriate for the outputs the project intends to deliver.

Summary of our findings

5.2. Table 1 below summarises the key initial findings from our project assessment. It includes the assessment category, our rating (Red, Amber Green – RAG), and a short summary of the underlying reasons for the rating.

5.3. Further details can be found in the Appendix.

[6]For more information on the undergrounded route, you can visit National Grid's website: http://dorset.nationalgrid.co.uk/project-updates/route-options-aug-2017/

[7] https://epr.ofgem.gov.uk/Content/Documents/National%20Grid%20Electricity%20Transmission%20Plc%20-%20Special%20Conditions%20-%20Current%20Version.pdf

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Table 1

Assessment category	RAG rating	Overview of findings
Implementation of VIP policy		Good documentary evidence of steps National Grid has taken to implement commitments in its VIP policy.
Benefits of project		Independent verification that the long-term landscape and visual enhancement benefits from mitigation project are expected to be significant.
Technical scope		For the most part, the technical scope is in line with the outputs the project intends to deliver. However, based on the evidence provided, it is our initial view that the requirement for the undergrounding of the eastern circuit of the two SSEN owned 33kV overhead lines has not been justified. There are several lower cost mitigation actions that should be considered to manage these risks. National Grid hasn't yet justified why other low cost alternatives are not suitable.
Procurement process and delivery strategy		We consider National Grid's procurement process to be robust and that it allowed for a competitive outcome. Delivery strategy is well considered and managed and would enable the project to be delivered on time in 2022, depending on system availability of various areas of works.
Approach to risk management		Overall, we consider that National Grid are applying appropriate risk management and mitigation strategies. For the most part, these activities in National Grid's risk register and risk allowance are in line with our expectations. However, we are proposing a reduction in risk allowance in the following areas – • Reactive compensation • Project management • Landscaping • Project scope • SSE eastern circuit diversion
Costs		<u>Project development costs</u> Preliminary project development costs are in line with what we would expect.
		<u>Tendered costs</u> Overall, tendered costs have been justified. Tenderers were invited to submit two pricing options. National Grid demonstrated consideration of costs and performance of contracts using historical comparisons of similar pricing contracts.
		<u>Non-tendered costs</u> For the most part, non-tendered costs are justified. However, we are proposing a reduction in some non-tendered project costs. Based on the evidence submitted, we have not received enough detail to justify the need for the SSEN eastern circuit diversion, the costs of installation of reactive

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		compensation equipment, and some of the associated risk allowance.

Proposed cost reductions

6.0. Subject to consultation responses, our initial proposed reductions to National Grid's Dorset AONB mitigation project costs are summarised below in Table 2.

Table 2

Cost Category	Cost reduction (m£)
Needs case for SSEN 33kV eastern circuit diversion	£0.9m
Reactive compensation cost	TBD
Risk allowance	£1.3m
Total	£2.2m

6.1. It should be noted that:

(i) we will further review and update the costs and impacts of changes in the initial indices for metal rates and currency exchange when we make our final decision on the Dorset AONB mitigation project;

(ii) with regards to reactive compensation costs, we propose to determine an economic and efficient allowance for reactive compensation equipment once the works have been tendered; and,

(iii) we acknowledge some information (such as risks) may be outdated since National Grid's initial submission and will take new information into account in our final decision.

Next steps:

7.0. We intend to make a final decision on the Dorset AONB mitigation project and allowed expenditure later in the year, after considering responses to this consultation. We listed our main consultation questions at the start of this letter. Please send your responses to Cissie.Liu@ofgem.gov.uk by 7 September 2018. Unless marked confidential, we will publish all responses on our website (www.ofgem.gov.uk). If you wish your response to remain confidential please clearly mark your response to that effect and give your reasons for seeking confidentiality.

Yours Sincerely,

Min Zhu

Deputy Director

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Appendix

The Appendix provides further details on the project and our assessment.

2. Assessment of National Grid's approach

Implementation of VIP Policy

8.1. In 2013, we assessed and approved National Grid's VIP policy. Our assessment found that the VIP policy met the requirements set out in Part A of Special Licence Condition 6G, specifically, paragraph 6G.6, and that its implementation will help ensure transparency about how National Grid and its stakeholders select and prioritise mitigation projects during the price control.

8.2. Accordingly, a key aspect of assessing funding requests is ensuring that the proposed mitigation project is an appropriate application of the VIP policy.

8.3. In its submission, National Grid outlined the steps it has taken to implement the key commitments of its VIP policy and how this has resulted in the proposed Dorset AONB mitigation project. As part of this, National Grid summarises how its Stakeholder Advisory Group (SAG) selected the project after evaluating twelve shortlisted projects against project prioritisation criteria[8]. National Grid also explains how it engaged with local stakeholders to reflect their views on the project. Lastly, National Grid has gone above and beyond its VIP policy and comissioned independent acceptability testing with a sample of consumers. When presented with the details of the project, 66% of the sample found it acceptable; 15% found it unacceptable; and 19% did not provide a view either way.

8.4. Overall we are satisfied that in proposing the Dorset AONB mitigation project, National Grid has complied with the processes set out in it's VIP policy..

Benefits of project

8.5. A dominant landscape characteristic of part of the Dorset AONB comprising the OHL section is broad rolling chalk upland landscape. As a result, the area is very susceptible to landscape and visual impacts, which extends across a large geographic area.

8.6. National Grid has completed an independent assessment of the landscape and visual impacts, before and after the Dorset AONB mitigation project is completed. The removal of the large-scale towers is expected to enhance the sense of large open skies, and long views of distant horizons. It will also enhance the character of the small-scale valleys that are a part of this landscape.

8.7. In the long-term, the original landscape and visual impact score of 27 (denoting impacts of high significance) is expected to reduce to 3[9], after reinstatement of the underground cable corridor and screen planting around the cable sealing end compounds has had time to mature.

8.8. Accordingly, our initial view is that the project will benefit consumers by mitigating a significantly adverse impact of the existing transmission infrastructure on the highly valued landscape and visual amenities in the designated area.

[8] National Grid's prioritisation guiding principles set out in their VIP Policy Document include: landscape enhancement benefit; technical feasibility; and economic efficiency.
[9] National Grid commissioned an independent expert in the field of landscape assessment to score the project.

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Procurement process and delivery strategy

8.9. The main output of the project consists of undergrounding the 400kV double circuit overhead line. This activity was tendered to ensure a competitive price for consumers. Ultimately, Morgan Sindall was selected as the preferred bidder, which is subject to contract.

8.10. National Grid tendered under the Engineering Procurement Construction (EPC) onshore cables framework. Under this framework, National Grid allowed tenderers to submit two pricing options, a fixed price and a target price. This approach helped reveal different pricing/risk combinations.

8.11. National Grid considered a variety of pricing and risk combinations, to decide which party was best placed to manage different project risks. It reviewed contract options based on historical performance of similarly priced contracts. Ultimately, National Grid chose the fixed price option which transferred most project delivery risks to the contractor, as they are better placed to manage them.

8.12. National Grid demonstrated that it provided multiple opportunities throughout the procurement process for clarification, including site visits, negotiations, and resubmission opportunity for short-listed candidates in an attempt to assist tenderers submit a thorough application.

8.13. We examined whether the procurement process and scope of the Project was tendered in an open manner to attract a competitive number of competent bidders. We analysed National Grid's evaluation process and how it came to its decision on the successful tenderer, Morgan Sindall, as well as the timeliness of process.

8.14. We considered that NGET took a reasonable and balanced approach to assessing tender submissions and contract options, and that the procurement strategy involved a robust process leading to a competitive outcome.

8.15. We would generally have preferred to see a greater number of tenderers for the works. However, given the specialist scope of the work and time constraints for project submission, we recognise that in this case, National Grid was limited in the number tenderers capable of providing services for the specifications of the project. Our view is that in these circumstances, there were sufficient competent suppliers who submitted various pricing and risk combination options to ensure bids were competitive.

8.16. The delivery strategy has been well thought out, highlighting key milestones. National Grid demonstrated considerations of delivery capacity of various third parties.

Risks

8.17. We reviewed all risks in National Grid's risk register and considered which party is best positioned to manage risks. We also reviewed mitigation actions and strategies associated with all risk items, in particular the residual (non-tendered) risks that remain with National Grid. We ensured there were no double counted items in the risk register in other project risks.

8.18. The main contractor, Morgan Sindall, is bearing the majority of project risks. However some residual (non-tendered) risks remain with National Grid.

8.19. National Grid has identified the following top five areas where they retain responsibility over risks. These risks are non-tendered:

- Third party works (SSEN) - cost uncertainty of diverting ED lines;
- Archaeological discoveries in the ground;

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- Unforeseen ground conditions;
- Landscaping costs for sealing end compounds; and
- Additional drainage works.

8.20. Our initial view is that National Grid provided an appropriate approach to identify and assess risks, as well as mitigation activities for risks associated with the Project.

8.21. However, there are five areas of risk where we think that National Grid have not provided sufficient evidence. These include areas beyond the top five risks identified by National Grid. These are covered in the Cost section below, specifically, paragraphs 9.8 to 9.12.

9. Assessment of National Grid's proposed Costs

Costs

9.1. We reviewed Project costs in three general categories; preliminary project development costs, tendered costs, and non-tendered costs. We analysed costs for each project activity and cross-checked similar items from these three areas. Areas that were unclear were clarified with National Grid so we could understand differences between similar activity items to ensure there were no costs that were duplicated. For the most part, costs are within our expectations.

Preliminary Project development costs

9.2. We assessed the Project's preliminary project development costs in two sections - VIP policy development and implementation costs and Dorset AONB project development costs.

9.3. National Grid is seeking to recover the costs (£1.6m) it has incurred to date on the development and implementation of its VIP programme[10]. This cost is included in their total requested project cost. Based on the supporting evidence provided, we consider that the requested costs for the policy development and implementation of the VIP programme to date (from 2013 to 2016) are efficient.

9.4. Dorset AONB project development costs include pre-constructions works, such as preliminary works for developing a design option to allow for tendering, environmental works, and associated costs for land acquisition and consents. It's our view that these costs are comparable to other similar projects.

Tendered Costs

9.5. The majority of project costs are for the overhead line removal, and main construction and electrical installation of undergrounding cables. These items were tendered by National Grid to ensure competitiveness and value for consumers. The tendered works will be supplied by the winning bidder of the contracts, Morgan Sindall.

9.6. We assessed Morgan Sindall's contract costs using our internal benchmarking model, and sense checked costs with projects with similar scope.

9.7. As stated in the Procurement Process and Delivery Strategy section, paragraphs 8.9 to 8.16, it is our initial view that the tendering process undertaken by National Grid was appropriate and efficient.

[10] According to Special Condition paragraph 6G.12, the licensee may request the Authority to approve Allowed Expenditure for an EPI Output. The Authority will determine the total allowed efficient expenditure, including the development costs as stated in paragraph 6G.13(c), following an assessment of the TO's proposed delivery costs.

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Non-Tendered Costs

9.8. Non-tendered costs of the project are incurred through areas of work which don't form the main scope of the contracted works. These include:

- project management and overhead costs;
- elements of scope that will be completed by third parties

9.9. For the most part, we think that non-tendered costs are within reasonable range. We sense checked efficiency of costs using historical data, and these are comparable to previous projects. However, it is our view that National Grid have not provided sufficient evidence on three areas of non-tendered activity to justify their costs:

- the necessity of the SSEN 33kV eastern circuit diversion;
- reactive compensation costs; and,
- risk allowance costs.

9.10. *SSEN 33kV eastern circuit diversion necessity:*

9.10.1. For the Dorset Project, a tower must be erected in proximity to two 33kV overhead lines owned by SSEN. National Grid submitted evidence in support of two diversions, one for the circuit to the west of the 400kV line, and the other to the east. In relation to the eastern circuit diversion, National Grid stated that the diversion is required to ensure a safe distance from the live circuits during crane operations.

9.10.2. According to the maps and other evidence provided, it is our initial view that there are several alternative mitigation actions that could be considered to manage these risks. National Grid has not provided sufficient evidence as to why alternative mitigation actions are unsuitable for this scope of works. Therefore, we are proposing to remove these costs.

9.11. *Reactive Compensation Cost*

9.11.1. Reactive compensation equipment is needed to address the potential system voltage problems caused by increased capacitance due to the underground cables.

9.11.2. It is our initial view that National Grid has not sufficiently justified costs associated with the installation of reactive compensation equipment.

9.11.3. We note that these costs are based on estimates only at this stage. We have therefore not proposed a cost reduction at this stage. We will revisit our position once National Grid has tendered out the project.

9.12. *Risk Allowance Costs*

9.12.1. We are proposing a reduction of £1.3m in risk allowance, as follows in Table 3 (further details are set out below):

Table 3

Risk category	**Proposed cost reduction (m£)**	**Original allowance (m£)**
Reactive compensation	£0.4m	£1.0m
Project management and duplicated cost	£0.2m	£0.2m

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Landscaping	£0.08m	£0.2m
Project scope	£0.3m	£0.3m
SSEN eastern diversion[11]	£0.3m	£0.7m
Total	£1.3m	£2.4m

9.12.2. *Reactive compensation:* The risk for installing two reactors sought a risk allowance based on P80[12]. Our understanding is that, at the time of submission, National Grid has not yet tendered this activity, which has resulted in additional uncertainty. Our initial view is that consumers should bear no more than an equal share (P50) of risk with National Grid. We are proposing to remove any allowance above the P50 level.

9.12.3. *Project management and duplicated costs*: National Grid allocated risk allowance associated with changes to their project team. Our initial view is that National Grid have requested sufficient resources within project costs to plan and reduce the impact of project management team changes (i.e. turnover, etc.). We propose to remove the full allowance located to this activity. As well, National Grid included allowances for two of the same risk activities. It is our view that these have been double counted and we are proposing to remove duplicated allowance for this risk.

9.12.4. *Landscaping:* National Grid allocated risk allowance associated with landscaping to account for changes it may be required to undertake in connection with its planning permission submission by landowners and/or planning authority. National Grid have since received planning permission. As such, our initial view is that the value of these risks has been reduced, along with the risk of a changes in the planned scope.

9.12.5. *Scope:* National Grid allocated risk allowance in the event of changes in the scope of the project which would involve additional activities. National Grid have confirmed that no events have materialised yet to trigger any risk allowance spend.We propose to remove allowance for this risk activity in its entirety.

9.12.6. *Third party works (SSEN) - estimating cost uncertainty of diverting ED lines:* We will remove the associated risk allowance for SSEN diversion works if the eastern circuit diversion is removed from project scope, pro rata.

[11] As explained in the paragraph 3.10, we are querying the need for the SSEN 33kV eastern diversion. The proposed removal of the risk allowance here is on the assumption that SSEN 33kV eastern diversion does not go ahead. .
[12] There is an 80 per cent likelihood of the costs being less than or equal to the level it has included in its submission

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