Decision

Decision on National Grid Electricity Transmission's Enhancing Pre-existing Infrastructure project in Snowdonia National Park

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This document sets out our decision to fund and set a new Enhancing Pre-existing Infrastructure (EPI) output for National Grid Electricity Transmission (NGET) to reduce visual amenity impacts on the western edge of the Snowdonia National Park.

National Grid Electricity Transmission (NGET) submitted a funding request for this project through its RIIO-1 licence. We published a consultation on our assessment of the funding request on 26 May 2022, which closed on 24 June 2022. This document also summarises the responses received to the consultation. We have published the non-confidential consultation responses alongside this document.

The draft direction notice published alongside our decision sets out the proposed licence modification to be incorporated in NGET's RIIO-2 licence for the new EPI project.

Any enquiries related to the text of this publication should be sent to Ofgem at:

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Contents

Executive Summary

This document sets out our decision on a new Enhancing Pre-existing Infrastructure (EPI) project for National Grid Electricity Transmission (NGET).

The EPI project will replace a 3.3km section of 400kV/132kV double overhead lines (OHL) and pylons with an underground cable tunnel and associated infrastructure, on the western edge of the Snowdonia National Park near Porthmadog, Wales. NGET will deliver the Snowdonia EPI project by 2030.

In May 2022, we consulted on our view of NGET's proposed EPI project as follows:

1. The proposed Snowdonia EPI project is a valid outcome of NGET's implementation of its Visual Impact Provision (VIP) policy.
2. The proposed technical scope of the Snowdonia project is justified.
3. The economical and efficient cost of the EPI output is £287.5m (2019/20 prices), approximately 4.1% less than NGET's funding request of £299.6m.[1]

This document summarises the issues raised in consultation responses received from stakeholders, and an explanation of the changes made to our minded-to position since the consultation.

We have decided to approve the new EPI project, and after considering consultation responses, to fund the efficient costs of £286.6m.

Alongside this decision, we are publishing a draft direction to amend NGET's RIIO-2 licence for this decision.

[1] All costs in this document are in 2019/20 prices unless specified otherwise.

1. Introduction

Context

1.1 In the RIIO-1 price control, we introduced a policy for electricity transmission licensees to reduce the visual impact of pre-existing infrastructure within nationally designated areas and their settings. The policy applies to the following designated areas: National Parks, Areas of Outstanding Natural Beauty (AONB), and National Scenic Areas. The mitigation projects proposed by the electricity transmission licensees are known as Enhancing Pre-existing Infrastructure projects (EPI projects).

1.2 This document presents our decision a new EPI project in Snowdonia National Park proposed by National Grid Electricity Transmission (NGET).

1.3 NGET initially submitted the EPI project proposal and funding request in March 2021 under its RIIO-1 price control. However, NGET re-tendered the main tunnel works in 2021 because the project scope changed following a significant increase in generation connection requests in north Wales. Consequently, NGET submitted an updated funding request in November 2021 for £299.6 million to deliver the Snowdonia EPI project.

1.4 New EPI projects submitted prior to April 2021 for which no allowance has been provided can be added to NGET's RIIO-2 licence under Special Licence Condition (SpC) 3.10.15 of the Visual Impact Mitigation Re-opener and Price Control Deliverable and Enhancing Pre-existing Infrastructure Projects allowance licence condition.

Our decision-making process

1.5 On 26 May 2022, we published a consultation (the consultation) on our assessment of the proposed EPI project. The consultation closed on 24 June 2022 and we received three responses, which we have summarised and responded to in this document.

Purpose of this document

1.6 This document sets out our final decision to approve a new EPI project Snowdonia EPI project and an efficient funding allowance of £286.6m.

Related documents

Consultation on National Grid Electricity Transmission's Enhancing Pre-existing Infrastructure project in the Snowdonia National Park (22 May 2022) Consultation on National Grid Electricity Transmission's Enhancing Pre-existing Infrastructure project in the Snowdonia National Park | Ofgem

General feedback

We believe that consultation is at the heart of good policy development. We are keen to receive your comments about this report. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall quality of this document?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Are its conclusions balanced?
5. Did it make reasoned recommendations?
6. Any further comments

Please send any general feedback comments to stakeholders@ofgem.gov.uk

2. Consultation responses and Ofgem's decision

Recap of our consultation

2.1 NGET proposed to deliver a new EPI project on the western edge of the Snowdonia National Park near Porthmadog, Wales by 2030. The proposed EPI project will replace a 3.3km section of 400kV/132kV double overhead lines and pylons with an underground cable tunnel and associated infrastructure.

2.2 In the consultation, we set out our assessment of the proposed EPI project as follows.

Visual Impact Policy commitments and project selection

2.3 In our view, NGET has taken satisfactory steps to implement the commitments set out in its 2014 Visual Impact Provision (VIP) policy.[2] We also considered that the proposed EPI project in the Snowdonia National Park was a valid outcome from the VIP process that NGET put in place to work with stakeholders to evaluate mitigation opportunities and select EPI projects. See section 3 of the consultation for further details.

Project optioneering

2.4 From our assessment of the Options Appraisal Study, we were satisfied that NGET and the Stakeholder Advisory Group considered an appropriate range of options to potentially address the visual impacts of the 4ZC.1 section of overhead line. We also considered that the technical scope of NGET's proposed EPI project is appropriate given the sensitivity of the setting and the complexity involved in a tunnelling project. See section 4 of the consultation for further details.

Efficient project costs

2.5 In terms of NGET's proposed costs for the Snowdonia EPI project, we considered that NGET's proposed contractors' costs for the project are efficient and are minded-to allow for these.

2.6 For risks held by NGET on the cable and tunnel work package, we proposed to include a P50 allowance for ground related risks, to remove six high-value low

[2] A copy of NGET's VIP policy can be found here: https://www.nationalgrid.com/electricity-transmission/document/120581/download

likelihood risks from NGET's risk contingency and include a specific Cost and Output Adjusting Event (COAE) re-opener for these instead (these are set out in appendix 1 of this document). We considered that this approach is a more efficient way to fund NGET the efficient material costs of managing the impacts in the unlikely event that any such risks occur. For risk held by NGET on the OHL and the shunt reactor work packages, we proposed to cap the contingency for each at 7.5% of the delivery costs. In total, our assessment on NGET's risk costs summed to a reduction of £0.4m in the consultation.

2.7 We proposed to include £0.9m as a contingency for real price effects, i.e. the difference between changes in input prices and general inflation over RIIO-2 for the Snowdonia EPI project, in line with NGET funding request.

2.8 We considered that NGET's other direct activity costs are efficient and proposed to allow these in full.

2.9 We proposed to remove from the funding assessment £12.6m for indirect activities by NGET and its contractors on the Snowdonia EPI project that are programmed to be incurred after the RIIO-2 control period ie after 31 March 2026. This is because NGET will receive an allowance in the next price control period for indirect activities associated with the portfolio of baseline capital expenditure in its business plan. Work to complete the Snowdonia EPI project after 31 March 2026 will also be included in NGET's baseline business plan for the next price control period. There is a risk that NGET will be inefficiently funded in the next price control unless indirect activity costs expected to be incurred after 31 March 2026 are removed from the EPI project funding allowance.

2.10 Overall, our assessed efficient costs in the consultation for the EPI project was £12.1m less (or 4.1%) than the funding NGET requested.

Issues raised in consultation responses

2.11 We received three non-confidential responses to the consultation, which can be viewed on our website.[3]

2.12 All three responses supported our minded-to position to approve the Snowdonia EPI project and our assessment of the EPI project optioneering. Two responses also agreed with our assessment of the efficient funding allowance for the

[3] Consultation on National Grid Electricity Transmission's Enhancing Pre-existing Infrastructure project in the Snowdonia National Park | Ofgem

Snowdonia EPI project. One response (from NGET) did not agree with our proposed efficient funding of the EPI project and provided views on the following issues.

Closely Associated Indirect Costs after 31 March 2026

2.13 NGET agree that the categories of spend are Closely Associated Indirect costs (CAI costs) and will cross over into the next price control period. However, they are concerned that Ofgem's calculation for deriving a funding allowance for indirect activity in the next price control period may not sufficiently cover the allowance that we have proposed to remove from the EPI funding submission. NGET suggest that these costs should be included directly in the capital plan in the process of setting allowances for the next price control period.

Risk and contingency costs

2.14 NGET agree with the Cost and Output Adjusting Event mechanism we proposed in the consultation for two ground risks and four other risks in the tunnelling work package that are high value, low probability risks (see appendix 1).

2.15 However, NGET did not agree with our proposal to cap the risk and contingency costs for the overhead line and shunt reactor work packages at 7.5% of each work package cost, which equates to an overall reduction of £444k. NGET consider that the appropriate approach to setting an efficient level of asset related risk and contingency is on the basis of specific project evidence. NGET note that they provided a specific risk register for each work package, which was developed with input from specialists.

2.16 In the case of the OHL risk register, NGET highlight this was informed by experts involved in the construction of the existing tower in the estuary and in the development of the methodology for the tower removal. As such, NGET say the contingency value for the OHL works is robust, and reflects the complex nature of the project, which a 7.5% capped average would not.

2.17 Similarly, NGET submitted a risk register for the shunt reactor work package that was developed by experienced construction engineers involved on previous installations. Therefore, they consider the contingency value in that risk register is robust and more appropriate than a 7.5% capped average.

Treatment of real price effects[4]

2.18 NGET have requested that Ofgem consider an indexation approach[5] to cover the difference between construction price increases and inflation. NGET consider that applying such a mechanism, whether annually or at project closure, would protect both NGET and consumers, from windfall gains and losses.

Ofgem's view on issues

2.19 As all three responses supported our assessment of the Snowdonia EIP project and the scope of the proposed EPI project, this section focuses on the three issues raised by NGET in relation the efficient funding allowance for the Snowdonia EPI project.

Closely Associated Indirect costs

2.20 The disaggregation of direct and indirect costs is essential in Ofgem's approach to assessing and setting efficient funding of indirect costs across a licensee's portfolio of work and activities within a price control period. We consider that NGET's suggestion of including the CAI costs in the next price control's capital plan is contrary to our approach for activity cost delineation and that it could lead to inefficient funding in the next price control. Therefore, we remain of the view that it is more appropriate to remove NGET's and contractors' CAI costs that will be incurred on the EPI project after 31 March 2026 from the funding assessment.

Risk and contingency costs

2.21 We recognise that NGET submitted specific risk registers for each of the OHL and shunt reactor work packages and that these were informed and developed by experienced personnel. However, as highlighted in the consultation, as neither work package has been tendered yet, it is still uncertain what risks will sit with contractors and which will sit with NGET. Therefore, we believe that both risk registers represent the upper bound of risks for each work package.

2.22 We expect that NGET will, as part of its procurement process, negotiate with shortlisted contractors on managing several of the project specific risks.

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[4] Real price effects occur when network operators incur changes in costs which are not in line with changes in the inflation metric set for the price control period. Examples of such costs are labour, plant, material and construction costs.
[5] An indexation approach for RPE adjust the funding allowance for the project based on the changes in another price or composite indicator of prices.

Therefore, we have not changed our position to cap the risk value for the OHL and shunt reactor work packages at 7.5% of the delivery costs. This is in line with our RIIO-ET2 determinations to cap average risk across projects at this level.[6] It will also ensure NGET negotiate efficient contracts for the delivery of these work packages.

Treatment of real price effects

2.23 We acknowledge the risk of real price effects (RPE) on the EPI project, given its high value, long delivery programme spanning all five years of RIIO-2 (and beyond), the persistent pressures we are seeing on the construction supply chain, and labour shortages.[7]

2.24 We agree with NGET that forecasting and including a specific amount in the funding request to cover any difference between construction price increases and inflation, as per our proposal in the consultation to include a contingency fund of £0.9m for RPE, could lead to either a windfall gain or loss for NGET and consumers. Therefore, we have reconsidered this approach.

2.25 We consider that using an indexation approach is more appropriate than setting an RPE allowance/contingency up front in the cost assessment to account for the uncertain nature of RPE and the potential materiality, given the scale and long delivery period of the project. The most practical way to do this is to adjust the relevant EPI project allowances NGET incurs during RIIO-2 for RPE at the close out of the current price control using an indexation approach. The indexation approach at closeout will be based on the annual RPE methodology used for baseline expenditure in RIIO-2, adjusted as needed for the end of period adjustment. As a result of adopting the indexation approach to manage RPE on the project, we have removed £0.9m contingency from the cost assessment.

2.26 The treatment of expenditure on the EPI project in the next price control period starting on 1 April 2026 will be covered by the approach adopted in the future price control framework for RPE.

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[6] See Para. 3.20 to 3.28 of RIIO-2 Final Determinations - NGET Annex REVISED https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determination_nget_annex_revised.pdf

[7] We also note that NGET's contracting strategy for the tunnel/cable work package was to use a NEC4 Option C type contract to ensure there would be sufficient participation in the tender event to lead to a competitive outcome. The NEC4 Engineering and Construction Contract Option C is a target cost contract with an activity schedule where the out-turn financial risks are shared between the client and the contractor.

Our decision

2.27 In line with the views of respondents to the consultation, we have decided that:

- the Snowdonia EPI project is a valid outcome of NGET's implementation of its Visual Impact Policy (VIP), and
- the proposed technical scope of the Snowdonia project is justified.

2.28 After considering NGET's points on the proposed cost allowance of £287.5m (in 2019/20 prices) in the consultation, we have decided that the efficient costs of the Snowdonia EPI project are £286.6m.

2.29 The table below summarises NGET's funding request, our adjustments, minded-to position and our allowances for each of the components for the Snowdonia EPI project.

Table 2: Proposed adjustments and allowances

Cost category 2019/20 prices, £m	NGET request	Ofgem adjustment	Final view of efficient costs
Preliminary costs	20.090		20.090
Contractor costs	208.035	-1.947*	206.088
Risk contingency	23.016	-0.332	22.684
NGET other direct and indirect costs	48.466	-10.697*	37.769
Total	**299.607**	**-12.975**	**286.632**

* These costs have been removed from the funding assessment because they are indirect costs that will be incurred after 31 March 2026. Ofgem will set the efficient funding of indirect activity in the next price control for the portfolio of direct activity included in NGET's baseline business plan for the next price control period.

2.30 We note that the relevant costs incurred during the RIIO-2 price control period on the Snowdonia EPI project will be subject to an indexation adjustment for RPE at the close out of RIIO-2. In addition, we will specify COAE criteria for six high value low impact risks, which are set out in appendix 1.

Next steps

2.31 To give effect to our decision to approve the new EPI project and the efficient costs we are now consulting on the proposed direction. The text for the proposed direction is set out in appendix 2.

2.32 In accordance with SpC 3.10.23, the proposed direction sets out a new EPI output, an adjustment to NGET's RIIO-2 price control allowances by £216.276m (2018/19 prices) in appendix 3 of the SpC 3.10 and includes the criteria for the COAE.[8] The approved expenditure of £64.757m (2019/20 prices) that NGET will incur after 1 April 2026 to complete the project will go into the financial model for the next price control period, as part of NGET's baseline business plan.

2.33 Please note that, in our consultation, we proposed a further adjustment of the main contract price for changes in the metal price and exchange rate indices[9] that have occurred in the period between the contractors submitting their final price and NGET awarding the contract.[10] We will make this adjustment to the allowed expenditure that is directed following the consultation on the proposed direction.

2.34 Do you agree with the proposed form of the direction we plan to issue to give effect to our decision on the Snowdonia EPI project?

2.35 Representations may be made on the proposed direction to Anna Kulhavy at Anna.Kulhavy@ofgem.gov.uk by **14 June 2023**. We will consider all representations before making a final decision on EPI project direction.

2.36 We will publish the non-confidential responses we receive on our website at Ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

[8] This value is equivalent to £221.874m in 2019/20 prices. We convert project costs into the price base that is used in the financial model for the price control period in which project costs have been or will be incurred. The price base of the RIIO-2 financial model is 2018/19 prices.
[9] The indices to be used to adjust the contract price are:
Metals: London Metal Exchange https://www.lme.com
Forex: Bank of England https://www.bankofengland.co.uk/statistics/exchange-rates
[10] We expect NGET to report any material changes in metal prices and the currency rate indices and the impact of these changes on the final contract price.

Appendices

Index

Appendix 1 – High value low likelihood risks

A1.1 The table below lists the high value low likelihood risks for the Snowdonia EPI project that we propose are covered by a targeted COAE re-opener in NGET's licence. The table also sets out our proposed materiality threshold to trigger the COAE re-opener.

Risk	Details	COAE trigger
Tunnel boring machine failure (TBM) with total loss of tunnel	Loose ground conditions, incorrect operation or buried obstructions result in TBM breaking down and unable to either move backwards or forwards.	Risk event occurs and requires additional expenditure of at least 10% of the total ground related risk contingency for the cable tunnel work package
TBM failure i.e. main bearing failure	Catastrophic main bearing failure during tunnel drive i.e. due to more adverse ground conditions.	As above
Change in Law (including impacts of Brexit but excluding Covid19)	Change in law could include change to CDM regulations and devolved changes to laws, changes in localised taxation (excluding Landfill tax - separate risk) by Welsh Assembly. This risk excludes Coronavirus but includes Brexit (examples of Brexit impact may include specific import regulations, limits/conditions on port of entry over and above what is currently in place)	Risk event occurs and requires additional expenditure of at least 10% of the total non-ground related risk contingency for the cable tunnel work package
Coronavirus - Impact on NG and non-Contractor personnel	Control measures locally, nationally and internationally may restrict activities of National Grid or non-Contractor personnel	As above
Extreme weather & flooding (worse than 1 in 10)	Construction works are vulnerable to extreme weather which exceeds the 1-in-10 year value of the specified weather data. On site activities are programmed for 5 years so there is a significant probability of multiple occurrences of this risk	As above
(Construction - Site setup) Archaeological Discovery	Important unknown archaeological finds are discovered on site - Note: Potential for Roman Road on West site	As above

Appendix 2 – Proposed text for EPI project direction

A2.1 To give effect to our decision to approve the new EPI project and efficient cost we are now consulting on the proposed direction. The text for the proposed direction is set out below.

To: National Grid Electricity Transmission plc (company number 2366977)

Draft direction under Part D of Special Condition 3.10 (Visual Impact Mitigation Re-opener and Price Control Deliverable and Enhancing Pre-existing Infrastructure Projects allowance (VIMREt and EPIt)

1. The company to whom this direction is addressed is the holder of a licence granted or treated as granted under section 6(1)(b) of the Electricity Act 1989.

2. In accordance with paragraph 3.10.21 of Special Condition 3.10 (Visual Impact Mitigation Re-opener and Price Control Deliverable and Enhancing Pre-existing Infrastructure Projects allowance), on 16 May 2023 the Gas and Electricity Markets Authority (the "Authority") published on its website the text of the proposed direction to issue and stated that representations must be made on or before 14 June 2023.

3. We received XX non-confidential representation(s) and have placed these on our website. Having considered the representations we have decided to proceed with making this direction.

4. The reason for this direction is to specify an EPI project and the associated funding adjustment as further set out in our decision document published on 16 May 2023[11].

5. This direction is our notice of reasons for the purposes of section 49A of the Electricity Act 1989.

[11] [weblink to decision document in this footnote]

6. Now the Authority pursuant to the provisions of Special Condition 3.10 hereby directs that:

    a. Appendix 3 to Special Condition 3.10 is amended as set out in Annex 1 to this direction. Amendments are shown in strikethrough or underline, with changes since the proposed direction also shown in highlight; and

    b. the individual criteria for Cost and Output Adjusting Events specific to the Visual Impact Mitigation Price Control Deliverable set out in Annex 2 to this direction apply.

7. This direction will take effect on and from XX 2023.

Jourdan Edwards

Interim Deputy Director, Price Control Operations

Duly authorised on behalf of the Authority

XX XXXX 2023

Annex 1 of proposed direction

Please note that the values below are in 2018/19 prices.

Appendix 3 (to Special Condition 3.10)

Enhancing Pre-existing Infrastructure Project allowance

Project name and Designated Area	Allowance (£m)					All years
	21/22	22/23	23/24	24/25	25/26	
Snowdonia National Park EPI project	13.850	36.170	44.649	60.324	61.283	216.276

Project name	Description of project	Delivery date
Snowdonia National Park EPI project	Remove a 3.3 km section of a 400kV/132kV overhead line, known as the 4ZC.1, and 10 pylons that run between existing Garth sealing end compound near Minfford and pylon 4ZC 028, east of the Dwyryd Estuary. Replace pylon 4ZC 027 with a new terminal pylon. Construction of: - 4.2 km cable replacement 2 X 2500mm^2 (2 circuits per phase) - Tunnel with an internal diameter of 3.5 metres and segment thickness of 250mm. - 2 vertical shaft and head houses at Garth and Cilfor - 1 sealing end compound at Cilfor Install 200 MVAR shunt reactive equipment at the existing Trawsfynydd substation.	2030

Annex 2 to proposed direction

1. The table below lists the high value low likelihood risks for the Snowdonia EPI project that we propose are covered by a targeted COAE re-opener in NGET's licence. The table also sets out our proposed materiality threshold to trigger the COAE re-opener.

Risk	Details	COAE trigger
Tunnel boring machine failure (TBM) with total loss of tunnel	Loose ground conditions, incorrect operation or buried obstructions result in TBM breaking down and unable to either move backwards or forwards.	Risk event occurs and requires additional expenditure of at least 10% of the total ground related risk contingency for the cable tunnel work package
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Coronavirus - Impact on NG and non-Contractor personnel	Control measures locally, nationally and internationally may restrict activities of National Grid or non-Contractor personnel	As above
Extreme weather & flooding (worse than 1 in 10)	Construction works are vulnerable to extreme weather which exceeds the 1-in-10 year value of the specified weather data. On site activities are programmed for 5 years so there is a significant probability of multiple occurrences of this risk	As above
(Construction - Site setup) Archaeological Discovery	Important unknown archaeological finds are discovered on site - Note: Potential for Roman Road on West site	As above