

Consultation on the proposed works to enable connection of the Eastern HVDC link and offshore wind generation at Branxton Substation

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|---------------------------|---------------------------------|
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We¹ are consulting on SP Transmission's (SPT's) plans to carry out infrastructure work to enable connection of the Eastern High Voltage Direct Current (HVDC) cable link and offshore wind generation at Branxton Substation. We would like views from people with an interest in electricity transmission and distribution networks. We would also welcome responses from other stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at [Ofgem.gov.uk/consultations](https://www.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.

¹ The terms 'we', 'us', 'our' refer to the Gas and Electricity Markets Authority. Ofgem is the office of the Authority.

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Executive summary

The RIIO-ET2 price control runs from 1 April 2021 until 31 March 2026. It includes a range of Uncertainty Mechanisms (UMs) that will allow us to assess further funding during RIIO-ET2 as the need, cost or timing of works becomes clearer. This ensures that consumers fund projects only when there is clear evidence of benefit and we have clarity on likely costs. These mechanisms also ensure that the RIIO-ET2 price control has flexibility to adapt as clarity on the pathways to Net Zero target becomes clearer.

Where possible, we have set automatic UMs, such as the Generation and Demand Connection Volume Drivers, which provide Electricity Transmission Owner (ETOs) with immediate funding when they are required to undertake new customer connection works. In other areas, where the degree of uncertainty is too great to allow for an automatic mechanism, we set “re-openers” which will allow us to robustly assess ETO proposals once information with sufficient accuracy is made available.

The Medium Sized Investment Projects (MSIP) re-opener provides ETOs with an annual opportunity to request additional funding for sub-£100m projects, many of which may be critical for achieving Net Zero targets. It was developed to ensure that ETOs are able to undertake necessary investments in the transmission network, funding for, which has not been provided in RIIO baseline allowances.

An ETO can submit a request for additional funding via the MSIP re-opener during specific “windows” (each regulatory year between 25 January and 31 January) where it considers a project to be atypical in scope and where the forecast costs are expected to be outside the range for typical projects provided through the Connections Volume Driver mechanisms. Projects that meet the criteria will be eligible for consideration and scrutiny by Ofgem to establish the level of efficient costs to be remunerated.

We have engaged with the ETOs on the potential MSIP projects to be submitted in this first MSIP re-opener window. This document summarises the submission received from SPT for the proposed connection of Eastern High Voltage Direct Current cable link and offshore wind generation at Branxton Substation MSIP project.

We welcome views from stakeholders on our initial views on the project outlined in Chapters 2 to 5.

1. Introduction

What are we consulting on?

1.1. We are consulting on the needs case, optioneering of the chosen design and timing for the proposed connection of the Eastern High Voltage Direct Current (HVDC) cable link and offshore wind generation at Branxton Substation project proposed by SP Transmission (SPT) under their Medium Sized Investment Project (MSIP) re-opener submission in January 2022². The MSIP licence condition³ provides for companies to make re-opener submissions during the RIIO-2 price control period for projects that meet certain conditions in their licence. SPT considers that this project meets criteria specified within Special Condition (SpC) 3.14.6 (a) of the RIIO-ET2 electricity transmission licence.

1.2. The issue that the proposed Branxton MSIP project seeks to address is the insufficient existing transmission network capacity and forecast growth in renewable generation driven by Net Zero carbon emissions target.

1.3. In the re-opener submission, SPT provided Ofgem with evidence of the increased demand for renewable generation, driven by the commitment to achieve Net Zero carbon emissions by 2045 in Scotland and 2050 across Great Britain, and the needs case for reinforcement on the transmission network to facilitate this growth. There are a number of engineering options available to address significant forecast renewable generation demand growth; following analysis and investigations, SPT considers that the best solution is to develop a new substation on the eastern 400 kilovolt (kV) corridor of SPT's transmission network to enable the timely connection of the northern connection point for the first Eastern HVDC link but also the connection of a significant amount of offshore wind generation from the North Sea.

² Referred to as Branxton MSIP project for the remainder of the document.

³ [Statutory consultation on modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions | Ofgem](#)

1.4. A Bilateral Connection Agreement is in place for the proposed development between National Grid Electricity System Operator (NGESO⁴) and the developer, with a corresponding Transmission Owner Construction Agreement in place between NGESO and SPT.

1.5. In line with the provisions set out in paragraph 3.4 of the RIIO-2 Re-opener Guidance and Application Requirements Document⁵, SPT have presented a case for dividing their MSIP application into two stages and has provided a justification for not providing all of the required information for cost details now.

Two-stage MSIP submission process

1.6. The ETOs have a duty to provide connection to users and to develop and maintain an efficient, co-ordinated and economical transmission network. Therefore, it is for an ETO to decide when it is the right time to initiate a new project that may be needed during the RIIO-ET2 price control period.

1.7. Transmission projects can contain works that are dependent on factors outside the direct control of the ETOs, including the impact on customer-driven requirements, or involve issues where project timescales do not necessarily align with the rigid regulatory structure (e.g., the fixed submission window of the MSIP submission framework). These factors create a potential problem where a lack of firm information can have a disproportionate impact on the development of activity and adversely impact work deemed necessary to deliver a connection in a timely manner. Delays to the works to progress connection of low carbon generation, which would contribute towards meeting the Net Zero target, may lead to additional costs for GB consumers.

1.8. The MSIP arrangements⁶ have been designed to allow ETOs to seek an Agreement in Principle of investment need and preferred design solution from us when sufficient

⁴ On 1 April 2019, the ESO became a legally separate function within National Grid plc and is distinct from the company which operates and owns the transmission network in England and Wales (National Grid Electricity Transmission). The key role of the NGESO is to ensure that the national electricity transmission system is operated in a secure, reliable and economically efficient way. It does this by performing real-time system balancing and managing operational challenges through the procurement of market services. NGESO is also the contractual interface with users of the transmission system.

⁵ RIIO-2 Re-opener Guidance and Application Requirements Document: <https://www.ofgem.gov.uk/sites/default/files/2022-02/Re-opener%20Guidance%20And%20Application%20Requirements%20Document%20Version%202.pdf>

⁶ Further details can be found in the MSIP licence condition ([Statutory consultation on modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions | Ofgem](#)) and in Final Determinations ([RIIO-2 Final Determinations - Core Document \(REVISED\) \(ofgem.gov.uk\)](#))

information is available about the drivers for the work, the optioneering of the chosen design and the proposed timing of delivery for qualifying projects. The arrangements enable us to apply proportionate scrutiny, on a case-by-case basis, to our assessment of works proposed by the ETOs. This helps to manage uncertainty and helps ensure the timely and efficient progress of preparatory works. We consider it is in the interests of existing and future consumers to ensure that the scope of MSIP projects, reflecting the specific circumstances of each case, are justified and can be progressed at the most appropriate time.

1.9. Our position relating to the efficient costs of the project is tentative at this stage. We expect unit costs and volume details to form a key part of the second stage submission in January 2023.

1.10. In the first stage submission, SPT provided Ofgem with information to justify their proposed option for meeting the needs case and the optioneering for the proposed project.

1.11. This consultation sets out our minded-to position on the following areas of the Branxton MSIP project:

- the needs case,
- the alternative options and the selection for the proposed project.

1.12. In the following Chapters we set out the assessment of the MSIP application in more detail and our minded-to view based on the evidence submitted by SPT to date.

Context and related publications

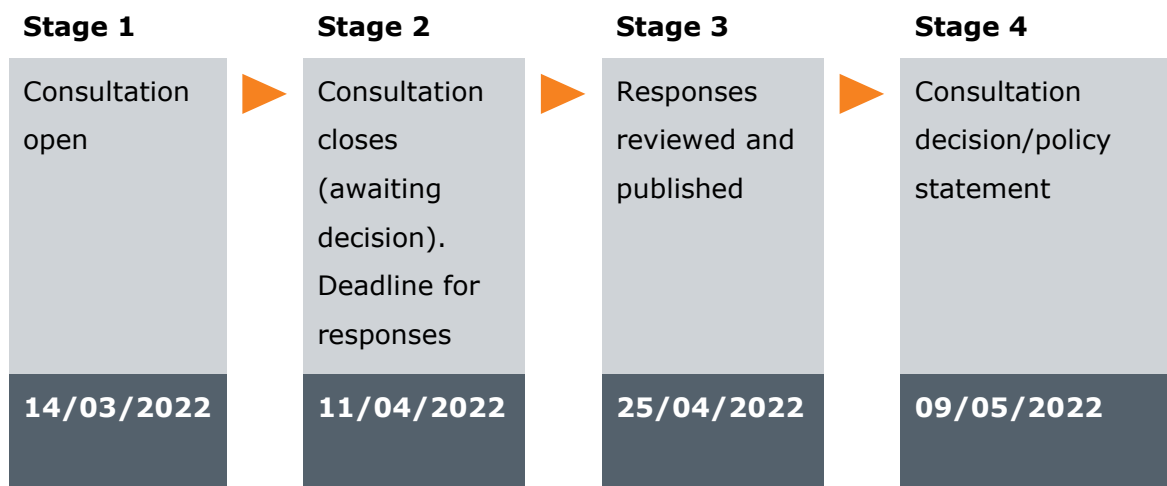
1.13. The scope of this consultation is limited to SPT's Branxton MSIP project. Additional information on this MSIP project can be found in Branxton MSIP re-opener application document⁷.

⁷ [Microsoft Word - 2022-01-31 Branxton MSIP Reopener - Final - Draft Redaction \(spenergynetworks.co.uk\)](#)

Consultation stages

1.14. This consultation will open on 14 March 2022 and close on 11 April 2022. We will review and publish the responses 14 days after the consultation closes. We will endeavour to publish our decision by 9 May 2022.

Figure 1: Consultation stages



How to respond

1.15. We want to hear from anyone interested in this consultation. Please send your response to Eliska.antosova@ofgem.gov.uk.

1.16. We've asked for your feedback in relation to each of the questions in Chapters 2–5. Please respond to each one as fully as you can.

1.17. We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, data and confidentiality

1.18. You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.19. If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you *do* wish to be kept confidential and those that you *do not* wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

1.20. If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 4.

1.21. If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

General feedback

1.22. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

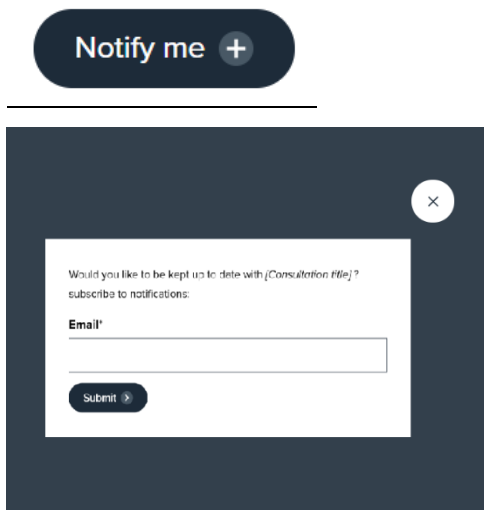
1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6.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

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

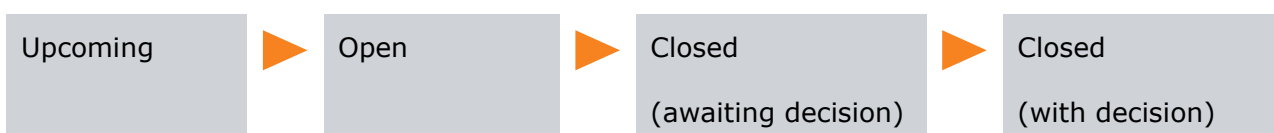
How to track the progress of the consultation

You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website.

[Ofgem.gov.uk/consultations](https://www.ofgem.gov.uk/consultations).



Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:



2. Assessment against Re-opener Requirements

Section summary

In this section, we detail Ofgem’s assessment of SPT’s application against the Re-opener application requirements in the licence and the Re-opener Guidance and Application Requirements Document. (See Table 1 below).

Table 1: Re-opener application requirements

| Document | Requirement | Has the requirement been met? |
|--|---|-------------------------------|
| RIIO-2 Re-opener Guidance and Applications Requirements 3.3 ⁸ | To include a table that maps out which sections of the application relate to individual requirements as set out in the relevant Re-opener licence condition and Chapter 3 of RIIO-2 Re-opener Guidance and Applications Requirements. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.4 | To provide a justification for not providing all of the required information. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.8 | To include a needs case whether or not this is a specified requirement of the relevant Re-opener licence condition or Re-opener Guidance. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.9 | The needs case must contain the alignment with overall business strategy and commitments. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.9 | To include a clear statement of how the proposed expenditure aligns with the licensee’s future business strategy, | Yes |

⁸ [reopener_guidance_and_application_requirements_document.pdf](#)

| | | |
|--|---|--|
| Applications Requirements 3.10 | including consideration of how it relates to the licensee’s RIIO-2 licence or other statutory obligations and, if relevant, its RIIO-3 business plan. | |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.11 | To include a clear statement as to the need for the proposed expenditure or the problem the licensee is trying to address in the context of its significance for consumers and network assets. The affected consumers / assets must be identified and the associated risk being addressed quantified, where possible. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.12 | To provide the rationale for the level of expenditure proposed and why this level should be regarded as being efficient. | Cost information will be part of the stage two submission in January 2023. |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.13 | To include a clear description of the long and short list of options considered and the selection process undertaken to reach the preferred option. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.14 | To include a clear description of the preferred option, sufficient to allow us to make an informed decision on if the preferred option is suitable. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.15 | To include a clear statement as to any project delivery and monitoring plan for the preferred option. | Yes |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.16, 3.17 | To include an explanation of how stakeholder engagement contributed to the identification and design of the preferred option. S stakeholder engagement may not be necessary where there is not a material impact on stakeholders, or where the application is driven by statutory obligations. | Yes |

| | | |
|--|---|---|
| RIIO-2 Re-opener Guidance and Applications Requirements 3.19, 3.20 | To provide sufficient cost information. | Cost information will be part of the stage two submission in January 2023. |
| RIIO-2 Re-opener Guidance and Applications Requirements 3.21, 3.22 | Cost Benefit Analysis and Engineering Justifications Papers are important sources of evidence that can be included in an application. | Yes |
| Special Condition 3.14, paragraph 6a ⁹ and 6c | <p>Projects qualify for submission via the MSIP re-opener where the activities:</p> <p>(a) are expected to generate a level of allowance through the volume driver mechanism that diverges from the current level of expected costs beyond the defined tolerance range¹⁰ stated.</p> <p>(b) involve a boundary reinforcement project that has received a Proceed Signal in the most recent Network Options Assessment (NOA).</p> | <p>(a) Yes</p> <p>(b) Yes, because NOA¹¹ 2021 gave a Proceed signal to two Eastern HVDC link projects (E2DC & E4D3).</p> <p>In November 2021 we published our initial findings of our Initial Needs Case assessment of the Eastern HVDC project under the Large Onshore Transmission Investment reopener.¹²</p> |
| Special Condition 3.14, paragraph 9. | Includes a statement setting out what MSIP the application relates to. | Yes |

⁹ More details are available in the RIIO-ET2 “ET Annex” Final Determinations document, paragraphs 4.19 and 4.20. See link: [RIIO-2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator | Ofgem](#)

¹⁰ In accordance with SpC 3.14.6: “The licensee may apply to the Authority for a direction amending the outputs, delivery dates or associated allowances in Appendix1 in relation to one or more of the following activities: (a) a Generation Connection project, including all infrastructure related to that project, the forecast costs of which are at least £4.24m more or less than the level that could be provided for under Special Condition 3.11 (Generation Connections volume driver)”

¹¹ [Network Options Assessment \(NOA\) | National Grid ESO](#)

¹² [Eastern HVDC - Decision on the project’s Initial Needs Case and initial thinking on its suitability for competition | Ofgem](#)

| | | |
|-------------------------------------|---|--|
| | To give details of the associated amendments to the outputs, delivery dates or allowances and an explanation of the basis of the calculation for any amendments requested to allowances. | A further submission will be made detailing the requested amendments to the outputs, delivery date and allowances to be detailed as a Price Control Deliverable in SpC 3.14 Appendix 1. |
| | To provide such detailed supporting evidence as is reasonable in the circumstances to justify the technical need including cost benefit analysis, impact assessments, risk mitigation, and engineering justification. | Yes (technical need and engineering justification). As noted above, detailed information on costs and risk, and associated cost benefit analysis, will be provided as a further submission. |
| Special Condition 9.4, paragraph 3. | To prepare applications for Re-openers in accordance with the Re-opener Guidance and Application Requirements Document. | Yes |

2.1. Ofgem has deemed that the submission from SPT has met the necessary requirements set out in both the applicable Special Licence conditions and the detailed Re-opener application criteria set out in the RIIO-2 Re-opener Guidance as listed in the Table above.

2.2. In the following Chapters we set out the assessment of the MSIP application in more detail and our minded-to view based on the evidence submitted by SPT.

3. Needs case for the proposed project

Section summary

In this section, we detail the main issues that form the needs case driving the Branxton MSIP project.

Consultation Question 1: Do you agree with our view of the validity of the needs case for the Branxton MSIP project?

3.1. The issue that the proposed Branxton MSIP project seeks to address is the insufficient existing transmission network capacity and forecast growth in renewable energy, mainly offshore wind generation driven by Net Zero carbon emissions targets.

3.2. Branxton 400kV Substation is a key enabler for significant offshore wind generation in the eastern region of SPT's transmission network and also forms the northern connection point for the first Eastern HVDC link¹³.

3.3. The needs case provided by SPT details the investment proposed which will provide additional transmission network capacity. The generation driving the needs case for this intervention are all renewable energy sources. Facilitating the connection of renewable generation will further contribute to reaching Net Zero targets by 2045 in Scotland and 2050 across Great Britain.

3.4. There are a number of engineering options available to address significant forecast renewable generation demand growth; following analysis and investigation, SPT considers that the best solution is to develop a new 400kV substation at the Branxton site, and that the construction of a new 21-bay Gas Insulated Switchgear (GIS) substation will be required at Branxton situated east of Thornton Hill and northwest of Gallows Law Plantation. While the

¹³ As stated in Section 4 of the MSIP Re-Opener Application.

substation is capable of expansion, the proposed design for a 21-bay GIS substation is expected to reduce the risk of future lengthy network outages and disruptive reconfiguration.

Our initial view of needs case

3.5. Our initial view is that the needs case put forward by SPT is valid and that the design of a new 21-bay GIS substation will be required at Branxton to support legislated Net Zero targets as well as SPT's RIIO-T2 strategic goals¹⁴.

3.6. This position is supported for the following reasons:

- SPT is required to complete construction of a new 21-bay GIS substation at Branxton 400kV Substation to comply with the statutory and regulatory requirements under the terms of SPT's licence, including Licence Condition D4A¹⁵.
- The construction of a new 21-bay GIS substation at Branxton 400kV Substation enables the connection of 2.3GW offshore generation.
- The proposed connection of renewable generation supports legislated Net Zero targets, as the proposed project will facilitate the growth of renewable generation.

3.7. SPT have also considered alternative options to address the needs case. These are set out in the following chapter with our view on the optioneering carried out by SPT.

¹⁴ More details can be found in Section 4.7 of the Branxton MSIP re-opener application document ([Microsoft Word - 2022-01-31 Branxton MSIP Reopener - Final - Draft Redaction \(spenergynetworks.co.uk\)](#))

¹⁵ [Electricity Transmission Standard Licence Conditions 24 07 2021 \(ofgem.gov.uk\)](#)

4. Assessment of options and justification for the proposed project

Section summary

We examine all the alternative solutions considered by SPT from a technical viewpoint. We analyse the relative costs of these options and discuss our minded-to view of SPT's proposed solution.

Consultation Question 2: Do you agree with our technical assessment of the range of solutions to meet the needs case?

Consultation Question 3: Do you agree with our minded-to view of the solution proposed by SPT?

Engineering assessment of the range of solutions

4.1. To address the needs case discussed in the previous chapter (to provide two connection points for the planned Eastern HVDC link that is a key enabler for the economic integration of renewable generation across Scotland, and insufficient existing pre-fault capacity), SPT considered the following six options:

- Do Nothing or Delay
- Extension of Torness 400kV GIS substation
- New Air Insulated Switchgear (AIS) substation at Branxton
- New 14-bay GIS substation at Branxton
- New 23-bay GIS substation at Branxton
- New 21-bay GIS substation at Branxton (SPT's preferred option).

4.2. We have undertaken a technical review of the solutions considered by SPT. The materials reviewed comprised of SPT's pre-engagement presentation materials, their initial submission under the MSIP re-opener licence condition and responses to supplementary questions.

OPTION 1: Do Nothing or Delay

4.3. SPT rejected this option because it does not comply with SPT’s various statutory duties¹⁶ and licence obligations. This includes Licence Condition D4A, which requires SPT to offer to enter into an agreement with the ESO upon receipt of an application for connection, or for modification to an existing connection. Moreover, delays in progression of the other interactive schemes would result in additional annual constraint costs¹⁷ of up to £225m (1-year delay) or £453m (2-year delay).

OPTION 2: Extension of Torness 400kV GIS substation

4.4. SPT rejected this option for reasons relating to the current substation configuration and the advanced age and space constraints of the existing Torness 400kV substation.

4.5. Furthermore, SPT considered that connecting the Eastern Link and future offshore wind generation at Torness is not viable due to the uprating requirements of the existing infrastructure and significant planning challenges in delivering the required works.

OPTION 3: New AIS substation at Branxton

4.6. SPT rejected this option because the indicative capital costs for this alternative are significantly higher relative to the proposed solution. Also, constructing an outdoor AIS substation in this area is not considered to be feasible due to the topography and location near the coast making it unsuitable for outdoor AIS, and the required footprint of an outdoor 21 bay AIS substation (which is substantially larger than a GIS design). This option would also involve a significant risk of delay due to land purchase and consenting risks.

OPTION 4: New 14-bay GIS substation at Branxton

4.7. SPT explained that while this option offers the lowest up-front cost and “minimum build” alternative solution, it was rejected because the construction of a new 14-bay GIS

¹⁶ Statutory duties under section 9(2) of the [Electricity Act 1989 \(legislation.gov.uk\)](http://legislation.gov.uk)

¹⁷ When there are physical constraints on the network, generators are asked to reduce their output to maintain system stability and manage the flows on the network. Generators are then compensated via a constraint payment. The alternative is to build more infrastructure at a significant cost, meaning higher bills for consumers. For this scheme, the constraint costs are higher than the proposed infrastructure costs, therefore the intervention would appear to be required.

substation would significantly limit future connections to the site and would lead to increases in the cost and outage requirements of future expansion of the substation.

OPTION 5: New 23-bay GIS substation at Branxton

4.8. SPT rejected this alternative as it was less economic and efficient than the preferred option due to the higher capital cost associated with the provision of two additional 400kV GIS bays relative to the proposed 21-bay configuration. The additional bays are also considered to be at increased risk of stranding following the closure of Torness Power Station, expected in 2028.

OPTION 6: New 21-bay GIS substation at Branxton (proposed option)

4.9. This option was selected because it minimises the risk of asset stranding at Branxton 400kV Substation and is in anticipation of the ultimate closure of Torness Power Station. The layout provides operational flexibility and security against an infeed loss above the NETS SQSS limit and accommodates future bays for the 2,300MW element of the wider Berwick Bank project. This option also mitigates the outage requirements necessary for future extension of the busbar system relative to the 23-bay and 14-bay configurations.

4.10. The required connectivity will be achieved with the installation of only one additional 400kV overhead line tower. This terminal tower will extend the existing Branxton - Eccles 400kV overhead line route from the existing cable sealing end compound by a single span to the location of the new substation. New cross arms need to be installed on the existing Thornton Bridge – Crystal Rig 400kV overhead line route terminal tower, enabling the downleads to be diverted into the new substation compound.

4.11. In terms of cable works, the design solution requires the installation of short sections of new 400kV cable and associated joints to accommodate the diversion of the Branxton – Torness 400kV cable systems to terminate in the new substation.

Ofgem’s view of the potential solutions

4.12. Having considered the range of solutions presented by SPT, we are satisfied that SPT has considered an appropriate set of options to address the needs case.

4.13. We note that the connection at SPT’s Branxton 400kV Substation was recommended following an assessment process¹⁸ in accordance with STC Procedure (STCP) 18-1¹⁹ and co-ordinated by the NGESO²⁰.

Our minded-to view of the proposed project

4.14. Our review concluded that the options proposed by SPT; the construction of a new 14 bay substation, construction of a new 21 bay substation and the construction of a new 23 bay substation (all of which would utilise GIS technologies) were all feasible engineering solutions.

4.15. Both the 23-bay and 21-bay alternatives enable the connection of the Eastern HVDC link and prepare the network for the contracted 2,300MW element of the Berwick Bank Offshore Wind Farm. Both options also prepare the network for the ultimate closure of Torness Power Station and the subsequent rationalisation of the Torness 400kV GIS. We also recognise that the establishment of new substation development may address the thermal limitations in the SPT network around the location of Torness under certain conditions, which can impact Scottish import and export capability, by effectively bypassing the Torness 400kV cable systems.

4.16. However, our minded-to view is that the construction of a new 21-bay GIS substation at Branxton and the subsequent substation works represents the optimal option.

4.17. The range of benefits that the option brings include:

- It will support reaching legislated Net Zero targets and is aligned with SPT’s RIIO-T2 strategic goals.
- It enables the connection of Eastern HVDC Link and the contracted 2,300MW element of Berwick Bank Offshore Wind Farm, while bypassing the thermally limiting Torness 400kV cables.

¹⁸ The ESO and onshore ETOs have a statutory obligation in section 9 of the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and this is reflected in the specific requirement of the transmission licences (standard condition C8). STCP 18-1 and the Connection and Infrastructure Options Note (CION) process within it is used to identify and record the connection options considered and the overall economic and efficient connection option, measured in terms of the overall benefit for the GB consumer. The selection not only looks at the most economic option from the CBA exercise but also considers environmental impact, deliverability, time of market, technology risk, planning and consenting risk and other criteria which are deemed relevant to the project during the selection. The CION will continue to be revised until there is no further enhancement of benefit to the GB consumer.

¹⁹ [Microsoft Word - STCP 18-1.doc \(nationalgrideso.com\)](#)

²⁰ The CION document, reporting the output of work between Developers, ETOs and the ESO, is confidential.

- The design proposed enables further expansion of the substation in the future if the need arises. The possible extension of the substation could provide additional grid entry points for future renewable energy sources to connect, e.g. the 1,850MW balance of the wider Berwick Bank project or ScotWind capacities.
- The design proposed provides a high level of operational flexibility, thus mitigating future outage requirement at the site.
- The rationalisation of a number of bays minimises the risk of asset stranding at Branxton 400kV Substation.

4.18. This project provides an economic and efficient connection of 2,300MW of renewable generation and supports the achievement of UK Government’s target of delivering the connection of 40GW offshore wind generation by 2030.

5. Cost assessment of the proposed project

Section summary

This section sets out our assessment of the submitted costs of the proposed Branxton MSIP project.

5.1. In line with the provisions set out in paragraph 3.4 of the RIIO-2 Re-opener Guidance and Application Requirements Document²¹, SPT have presented a case for dividing their MSIP application into two stages.

5.2. We agree with SPT that a two-stage approach is appropriate in this case as it will alleviate delays to the works to progress connection of low carbon generation, helps to manage uncertainty and ensures the timely and efficient progress of preparatory works. We consider it is in the interests of existing and future consumers to ensure that the scope of MSIP projects, reflecting the specific circumstances of each case, are justified and can be progressed at the most appropriate time.

5.3. A final submission will be made as part of the stage two submission in January 2023 relating to the associated amendments to the outputs, delivery date and allowances to be detailed in Special Conditions 3.14 of SPT's T2 Electricity Transmission Licence.

5.4. SPT's indicative view of potential direct capital expenditure for the connection of Eastern HVDC Link and offshore wind generation at Branxton Substation in RIIO-2 is set out in Section 7 of the Stage 1 MSIP Re-Opener Application²². These estimated costs have been informed by SPT's Manual of Standard Costs. The Manual is regularly updated with changing market conditions and enables appropriate estimates of the likely capital costs at an early stage of the project.

²¹ RIIO-2 Re-opener Guidance and Application Requirements Document:

<https://www.ofgem.gov.uk/sites/default/files/2022-02/Re-opener%20Guidance%20And%20Application%20Requirements%20Document%20Version%202.pdf>

²² [Microsoft Word - 2022-01-31 Branxton MSIP Reopener - Final - Draft Redaction \(spenergynetworks.co.uk\)](#)

Risk and contingency

5.5. Risks costs will be included in the MSIP stage two submission in January 2023. Project risks will be logged within the Risk Register to manage the risks throughout the course of the project. Risk values will be presented highlighting the likelihood and impact on the progression of the project and its completion.

5.6. The main risks categories include:

- Securing planning and other consents - significant consenting impact and land purchase requirement may cause delays to Eastern Link and Berwick Bank schemes (the Berwick Bank development does not currently have planning consents or a Contract for Difference²³). The Branxton 400kV Substation project requires planning consent from East Lothian Council. A full and formal planning application was submitted to East Lothian Council on the 14th December 2021.
- Ground conditions/ civil works
- Utilisation of new insulation technologies (free from the potent greenhouse gas, sulphur hexafluoride).

Our minded-to position

5.7. We have considered whether the above factors present a robust reason to delay assessment of the needs case and design, i.e. whether it is more practical to delay assessment until all appropriate information is available and whether it has led to any detriment for GB consumers. In this case we consider that there is no evidence that considering the MSIP application is unreasonable. However, any approval of the MSIP project is subject to receipt of appropriate evidence regarding project delivery and the associated costs.

²³ The Contracts for Difference (CfD) scheme is the government's main mechanism for supporting low-carbon electricity generation. CfDs incentivise investment in renewable energy by providing developers of projects with high upfront costs and long lifetimes with direct protection from volatile wholesale prices, and they protect consumers from paying increased support costs when electricity prices are high. Renewable generators located in the UK that meet the eligibility requirements can apply for a CfD by submitting what is a form of 'sealed bid'. There have been 3 auctions, or allocation rounds, to date, which have seen a range of different renewable technologies competing directly against each other for a contract. ([Contracts for Difference - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/contracts-for-difference))

6. Next Steps

6.1. We welcome your responses to this consultation, both generally, and in particular on the specific questions in Chapters 2, 3, 4 and 5. Please send your response to: Eliska.antosova@ofgem.gov.uk. The deadline for response is 11 April 2022.

6.2. We will conclude our first stage assessment of SPT's **Branxton MSIP project** with a decision in May 2022. If our minded-to view does not change through the consultation and MSIP assessment processes, our provisional decision will confirm our provisional view that SPT should be funded for the efficient delivery of **Branxton MSIP project**, subject to receipt of appropriate evidence regarding the project delivery and the associated costs.

6.3. Once a final submission including cost details is submitted in January 2023, we will seek to establish the efficiency of the proposed costs. Our approach to assessing network company costs relies on a combination of bespoke review and comparison across the companies, as appropriate to the nature of the cost.

6.4. We will also consider changes in the connection scope or capital expenditure programme where this may have an impact on the needs cases and optioneering.

6.5. In the event that we were to decide that SPT should be funded for this connection project, we are minded to categorise as an evaluative Price Control Deliverable (PCD) as we believe there is some flexibility in the manner by which this project can be delivered. Given the potential level of difference in materiality between the delivery modes, we consider it appropriate to protect consumer interests by reviewing the delivery.

6.6. Further work will be necessary to set explicit outputs, delivery dates and the profile of the project allowances for the PCD and to initiate a statutory consultation to make the relevant changes to the licence required.

Appendices

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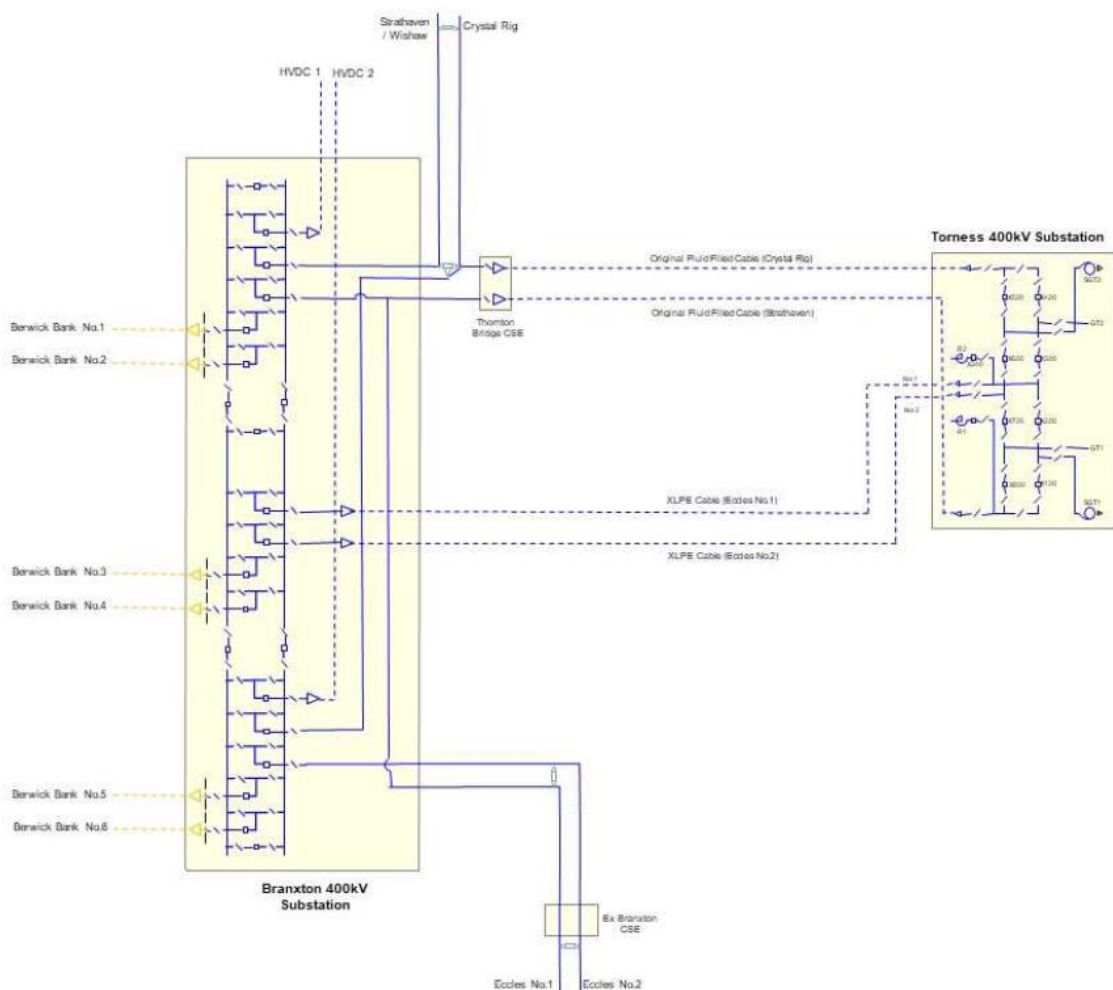
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Appendix 1

Branxton 400kV 21-bay option (proposed option) layout

5.8. Figure 2 below illustrates the layout of the preferred alternative. This option involves constructing a new 21-bay GIS substation with six bays for diverted circuits, four bus-sections and three bus-couplers, two bays for the connection of the Eastern HVDC Link and six future bays for the connection of the contracted 2,300MW Berwick Bank Offshore Wind Farm together with the connections to Torness 400kV Substation.

Figure 2: Branxton 400kV 21-bay option (proposed option) layout – single line diagram



Appendix 2

Consultation questions

Needs case for the proposed project

Question 1: Do you agree with our view of the validity of the needs case for the Branxton MSIP project?

Assessment of options and justification for the proposed project

Question 2: Do you agree with our technical assessment of the range of solutions to meet the needs case?

Question 3: Do you agree with our minded-to view of the solution proposed by SPT?

Appendix 3 – Privacy notice on consultations

Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem").

The Data Protection Officer can be contacted at dpo@ofgem.gov.uk

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

3. With whom we will be sharing your personal data

No external agencies.

4. For how long we will keep your personal data, or criteria used to determine the retention period.

Your personal data will be held for six months after the consultation is closed.

5. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it

- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data
- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3rd parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at <https://ico.org.uk/>, or telephone 0303 123 1113.

6. Your personal data will not be sent overseas (Note that this cannot be claimed if using Survey Monkey for the consultation as their servers are in the US. In that case use “the Data you provide directly will be stored by Survey Monkey on their servers in the United States. We have taken all necessary precautions to ensure that your rights in term of data protection will not be compromised by this”.

7. Your personal data will not be used for any automated decision making.

8. Your personal data will be stored in a secure government IT system.

9. More information For more information on how Ofgem processes your data, click on the link to our “[Ofgem privacy promise](#)”.