

Decision

Shetland HVDC Link - Project Assessment Decision

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This document confirms our¹ decision on the project assessment of Scottish Hydro Electric Transmission Plc's (SSEN Transmission) Shetland HVDC Link project (the Shetland Link). In particular, it sets out our final decision of the efficient capital costs that we will allow SSEN Transmission to recover for the delivery of the project, and the details of the Large Project Delivery (LPD) mechanism that will apply to this project.

This document also sets out our decision on the licence modifications required to support the delivery of the project.

¹ The terms 'Ofgem', 'the Authority', 'we', 'our' and 'us' are used interchangeably in this document.

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Contents

Executive Summary	5
Summary of this decision	5
Overview of allowances compared to consultation position	6
Output and Delivery Date.....	7
Large Project Delay (LPD)	7
Licence modifications.....	7
Interaction with Opex Escalator mechanism	7
Next Steps	8
1. Introduction	9
This document	9
Context	9
Large Onshore Transmission Investment (LOTI)	9
Background on the Shetland Link.....	9
Related publications.....	11
General feedback	12
2. Overview of our September 2021 consultation and responses	13
Section summary	13
Proposed cost allowance	13
Proposed Output and Delivery Date.....	15
Proposed Large Project Delivery (LPD) mechanisms	16
Proposed licence modifications for delivery of the Shetland Link.....	16
Summary of consultation responses	17
3. Our decisions	19
Section summary	19
Overview of our decision on cost allowances.....	19
Output and delivery date	26
Large Project Delivery (LPD).....	27
Modifications to Special Conditions 1.1 and 3.13 of SSEN Transmission’s licence.....	33
4. Next steps	35
Section summary	35
Appendices	36
Appendix 1 – Summary of responses to our September 2021 consultation.....	37
Chapter 2: Proposed cost allowance for the Shetland Link project	37
Chapter 3: Proposed Output and Delivery Date for the Shetland Link project.....	39

Chapter 4: Proposed Licence Modifications for the delivery of the Shetland Link project	41
Appendix 2 – Notice of licence modifications	42
Annex 1 – Amended licence conditions	44
Modifications to Special Condition 1.1 of SSEN Transmission’s licence.....	44
Modifications to Special Condition 3.13 of SSEN Transmission’s licence	46

Executive Summary

Summary of this decision

This document confirms our decision to provide SSEN Transmission with a total capital cost allowance of £641.8m² for the delivery of the Shetland Link and sets out the details of the Large Project Delivery (LPD) mechanism that will apply to this project.

We also set out our decision on the licence modifications required to support the delivery of the Shetland link. To that end, we have issued a notice of licence modification in appendix 2 of the document as part of this publication.

SSEN Transmission submitted its initial costs for delivering the Shetland Link to Ofgem in November 2020, amounting to £657.8m³. As discussed, and agreed with us, it provided further updates to those costs in May and August 2021, bringing the submitted costs to £675.4m. We have decided to provide an ex-ante⁴ allowance of costs of £641.8m for delivery of the project, which constitutes a reduction of £33.6m (5.0%) to SSEN Transmission's submitted costs. This decision is the result of our careful review of SSEN Transmission's submitted costs over the past 12 months, including benchmarking those costs against similar projects, our detailed assessment of SSEN Transmission's contracting and risk management strategy, and consideration of responses to our 03 September 2021 consultation: 'Shetland HVDC Link Project Assessment'⁵.

The reduction is primarily comprised of the following elements:

- Work packages and activities⁶: A reduction of £3.3m of cost relating to planning and consent, engineering, and construction.
- Risk: A reduction of £30.3m in the ex-ante allowance relating to general project risk, Covid risk and Brexit risk. We will make a provision within the cost and output adjusting event (COAE) mechanism for SSEN Transmission to submit additional

² All costs in 2020/21 prices unless otherwise indicated.

³ Excluding cyber security costs which have been excluded from this project assessment.

⁴ Upfront project allowances – excluding additional allowances for example from cost and output adjusting events.

⁵ Shetland HVDC Link Project Assessment: <https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

⁶ The following cost categories: Regulation and Consent, Engineering, Construction, Commissioning, Operations, Insurance and Other.

justified funding requests relating to Covid risk, as well as certain other risks (should the cost exceed a certain threshold).

We provide, below, a high-level summary table of the allowances and, in Chapter 3, additional details regarding the reductions.

High level summary of the cost allowances for the Shetland Link project

Cost Area	Submitted Cost (£m)	Adjustment (£)	Allowance (£)	Comparison with consultation position (£)
Project Management	45.4	0.0	45.4	-
Work Packages/Activities	561.5	-3.3	558.1	+13.1
Risk	68.6	-30.3	38.3	-
Total	675.4⁷	-33.6	641.8	+13.1

Overview of allowances compared to consultation position

We will disallow £0.2m of SSEN Transmission’s submitted costs for the converter station at Upper Kergord, Shetland (£12.2m less than proposed in our September 2021 consultation). We view this as an efficient allowance for the converter station after considering further justification from SSEN Transmission.

Following receipt and consideration of additional information from SSEN Transmission, we believe that both the £0.5m of Long Term Service Agreement costs and £0.4m of the £0.9m disallowance from hot meals costs on Shetland are now eligible and we will allow these costs.

We will allow £38.3m of up-front risk (no more or less than proposed in our September 2021 consultation).

⁷ Totals may not sum up due to rounding

Output and Delivery Date

We have decided to set the delivery date for the Shetland Link as 31 December 2024. We have also set the outputs for the Shetland Link as detailed in paragraphs 3.39 - 3.45 of this document.

Large Project Delay (LPD)

We have decided that if Shetland Link is delivered later than the set delivery date, we will:

- apply re-profiling of allowances to this project, which will remove any financial benefit accruing to SSEN Transmission from delayed project delivery; and
- apply a Project Delay Charge (PDC) to the Shetland Link, by recouping all Liquidated Damages that are paid to SSEN Transmission which it does not ultimately pay to its contractors.

Licence modifications

We have decided to modify Special Condition 1.1 and Special Condition 3.13 of SSEN Transmission's licence to give effect to our decision on the Shetland link as follows:

- define and add the Shetland link to SSEN Transmission's Transmission Area
- reflect our decision on the cost and outputs adjustment event mechanism
- reflect our decision on the Large Project Delivery framework, and
- specify the outputs, allowances and delivery date for the project.

Interaction with Opex Escalator mechanism

In our RIIO-2 framework, we introduced the Opex Escalator mechanism, a method by which the closely associated indirect (CAI) costs and network operating costs (NOCs) of a relevant project are automatically calculated based on the efficient direct capex of the project. We

decided in our Final Determination⁸ for the electricity transmission sector that this mechanism would apply to LOTI re-opener projects.

We recently decided to remove LOTI projects from the Opex Escalator and fund the CAI and NOCs for all LOTI projects individually within the project assessment decision.⁹ It will take effect from 10 January 2022. That decision is reflected in this Shetland Link decision document.

Next Steps

There will be a standstill period of 56 days before the licence modifications necessary to support the delivery of the Shetland Link take effect on 25 January 2022, in accordance with section 11A of the Electricity Act 1989 (“the Act”).

⁸ RIIO-2 Final Determinations: <https://www.ofgem.gov.uk/publications/riio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator>

⁹ Opex Escalator – Licence Change Decision: <https://www.ofgem.gov.uk/publications/opex-escalator-licence-change-decision>

1. Introduction

This document

1.1. This document sets out our decisions in the following areas:

1.1.1. Our assessment of the efficient costs that we will allow SSEN Transmission to recover from consumers for delivery of the Shetland Link.

1.1.2. Outputs and delivery date for the Shetland Link.

1.1.3. The Large Project Delivery mechanism that we will apply to the Shetland Link should it be delivered late.

1.1.4. Our modifications to SSEN Transmission’s licence required as part of the implementation of the Shetland Link and set out in our notice to modify the licence under section 11A of the Act.

Context

Large Onshore Transmission Investment (LOTI)

1.2. The Shetland Link is a LOTI project, and this decision relates to the project assessment stage of the LOTI re-opener process. Further information can be found in our September 2021 consultation¹⁰.

Background on the Shetland Link

1.3. The Shetland Link is SSEN Transmission’s proposed solution for connecting the Shetland Isles to the Scottish mainland. SSEN Transmission is contracted to connect the Viking Energy Wind Farm (VEWF) by quarter four of 2024. The Shetland Link will extend SSEN Transmission’s transmission network and comprises of the following as proposed by SSEN Transmission:

¹⁰Shetland HVDC Link Project Assessment: <https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

- Construction of a new 132kV AC Gas Insulated (GIS) substation at Upper Kergord, Shetland;
- Construction of a new converter station at Upper Kergord, Shetland;
- +/-320kV 600MW HVDC single circuit cable: 250km subsea and 11km onshore (9km on Shetland and 2km on the Scottish mainland);
- Construction of a new HVDC switching station at Noss Head, Caithness, to form connection to the Caithness-Moray HVDC Link and a north of Scotland HVDC multi-terminal system.

1.4. SSEN Transmission has advised us that the project is currently on schedule to meet its first contracted connection date of December 2024.

1.5. The Initial Needs Case (INC) and Final Needs Case (FNC) for the Shetland Link took place during the RIIO-1 price control. SSEN Transmission submitted its project assessment in November 2020 as a Strategic Wider Works (SWW) re-opener project. However, our assessment has spanned the end of that price control and into the current RIIO-2 price control; and our decision is being made during the current price control. We have therefore undertaken the project assessment of the Shetland Link as a LOTI project in accordance with the requirements of the licence condition and re-opener guidance.

1.6. We published our decision¹¹ to approve the FNC for the Shetland Link in July 2020, following consultation.

1.7. In September 2021, we published our consultation on the project assessment for the Shetland Link. As part of that consultation, we also issued a notice of statutory consultation on the proposed Licence Modifications needed to give effect to our minded to position. The consultation is summarised in Chapter 2 of this document¹².

¹¹ Shetland Link – Decision on Final Needs Case: <https://www.ofgem.gov.uk/publications/decision-final-needs-case-shetland-electricity-transmission-project>

¹² Shetland HVDC Link Project Assessment: <https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

Related publications

Decision on Scottish Hydro Electric Power Distribution’s proposals to contribute towards proposed electricity transmission links to Shetland, Western Isles and Orkney, December 2019:

<https://www.ofgem.gov.uk/publications/decision-scottish-hydro-electric-power-distributions-proposals-contribute-towards-proposed-electricity-transmission-links-shetland-western-isles-and-orkney>

Shetland HVDC Link: Consultation on Proposed Final Needs Case and Delivery Model, June 2020:

<https://www.ofgem.gov.uk/publications/shetland-transmission-project-consultation-proposed-final-needs-case-and-delivery-model>

Shetland HVDC Link: Decision on the Final Needs Case, July 2020:

<https://www.ofgem.gov.uk/publications/decision-final-needs-case-shetland-electricity-transmission-project>

RIO-2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator, December 2020:

<https://www.ofgem.gov.uk/publications/rio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator>

Decision on the proposed modifications to the RIO-2 Transmission, Gas Distribution and Electricity System Operator licences, February 2021:

<https://www.ofgem.gov.uk/publications/decision-proposed-modifications-rio-2-transmission-gas-distribution-and-electricity-system-operator-licences>

Large Onshore Transmission Investments (LOTI) Re-opener Guidance, March 2021:

<https://www.ofgem.gov.uk/publications/large-onshore-transmission-investments-loti-re-opener-guidance> [Shetland publications](#)

Notice of Statutory Consultation to Modify Special Condition 3.36 Opex Escalator for Electricity Transmission, August 2021:

<https://www.ofgem.gov.uk/publications/notice-statutory-consultation-modify-special-condition-336-opex-escalator-electricity-transmission>

Shetland HVDC Link Project Assessment consultation, September 2021:

<https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

Opex Escalator – Licence Change Decision, November 2021:

<https://www.ofgem.gov.uk/publications/opex-escalator-licence-change-decision>

General feedback

1.8. 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 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. Overview of our September 2021 consultation and responses

Section summary

This section outlines the key points that we set out in our September 2021 consultation, as well as an overview of the responses that we received to that consultation.

Proposed cost allowance

2.1. SSEN Transmission submitted its initial costs for delivering the Shetland Link to Ofgem in November 2020, amounting to £657.8m¹³. As discussed, and agreed with us, it provided further updates to those costs in May and August 2021, bringing the total submitted costs to £675.4m. In our September 2021 Consultation (the Consultation), we presented our minded-to position of allowing SSEN Transmission capital costs of £628.6m for the delivery of the Shetland Link, a £46.8m reduction from the costs that SSEN Transmission had submitted to us.

2.2. The table below summarises the adjustments we proposed in our September 2021 consultation.

Summary of our proposed cost allowances for the Shetland Link

Cost Category	Submitted Cost (£m)	Proposed Adjustment (£m)	Proposed Allowance (£m)
Project Management	45.4	0.0	45.4
Regulation and Consent	8.3	-0.6	7.7
Engineering	6.3	-0.3	6.0
Construction	519.4	-15.0	504.4
Commissioning	3.2	0.0	3.2
Operations	13.4	0.0	13.4
Insurance	1.0	0.0	1.0

¹³ Excluding cyber security costs which have been excluded from this project assessment.

Non-LOTI	-6.3	0.0	-6.3
Other	16.2	-0.5	15.7
Risk	68.6	-30.3	38.3
Total	675.4¹⁴	-46.8	628.6

2.3. We proposed not to allow £0.6m of submitted costs for delays to the access track at Upper Kergord, Shetland caused by VEFW.

2.4. We proposed not to allow £0.3m of submitted costs for a cost saving in business information modelling support (BIMS) that SSEN Transmission notified us of.

2.5. We proposed not to allow £1.1m of submitted incentivisation costs that we did not consider represented value for money for consumers and a reduction of £0.9m of submitted costs relating to the provision of hot meals on site in Shetland adjusting the unit cost of each meal to represent our benchmark figure. We also proposed not to allow £0.6m of submitted DNO connection costs at Noss Head and Kergord reflecting cost savings and the removal of VAT costs that were incorrectly included by SSEN Transmission.

2.6. We proposed not to allow £0.5m for duplication of LTSA costs. These are costs that SSEN Transmission submitted to us for the provision of maintenance and operation of the assets post-construction.

2.7. We proposed a reduction of £12.4m to converter station costs that we did not consider sufficient evidence had been provided to justify after taking into account unique characteristics and a separate benchmarking report provided by SSEN Transmission.

2.8. We proposed an up-front risk cost allowance of £38.3m (5.7% of the project costs) for the risk managed directly by SSEN Transmission. This represented a proposed reduction of £30.3m of the risk costs that SSEN Transmission submitted to us including risk costs relating to Covid and Brexit.

2.9. This proposed adjustment reflected areas where we had identified risks that are not eligible for consumer funding because they either relate to interfaces with SSEN

¹⁴ Totals may not sum up due to rounding.

Transmission’s contractors, have sufficient coverage within the proposed allowances, should be borne by other parties such as contractors, or risks that relate to events that have passed. We also included a proposal to disallow some costs associated with High Impact, Low Probability (HILP), Covid and Brexit risks. We proposed addressing these risks through a modification to the Cost and Output Adjusting Event (COAE) mechanism.

2.10. We proposed to complete a further review of SSEN Transmission’s risk document prior to making our decision.

2.11. We explained why we consider that the Opex Escalator mechanism introduced in our RIIO-2 framework to automatically calculate the closely associated indirect (CAI) costs and network operating costs (NOCs) of a project was unsuited for LOTI projects. We stated that we would be consulting separately on our proposal to change the Opex Escalator mechanism, and that the scope of our project assessment of the Shetland Link includes CAI costs and NOCs i.e., we proposed for these costs to be funded via the LOTI re-opener rather than the Opex Escalator mechanism.

2.12. We consulted separately on our proposal to change the Opex Escalator mechanism¹⁵ to remove LOTI projects from the Opex Escalator mechanism and instead fund the relevant CAI and NOCs for these projects individually through their project assessment decisions. In line with that proposal, we included such costs in our project assessment consultation for Shetland Link.

Proposed Output and Delivery Date

2.13. We proposed “Shetland HVDC link” as the output for the Shetland Link project. We proposed that this output would include the timely delivery of the following components of the project:

- A new 132kV AC Gas Insulated (GIS) substation at Upper Kergord, Shetland;
- A new convertor station at Upper Kergord, Shetland;

¹⁵ Notice of Statutory Consultation to Modify Special Condition 3.36 Opex Escalator for Electricity Transmission, August 2021
<https://www.ofgem.gov.uk/publications/notice-statutory-consultation-modify-special-condition-336-opex-escalator-electricity-transmission>. We published our decision on the Opex Escalator mechanism on 12 November 2021 to confirm the proposed changes.

- A 261km +/-320kV 600MW HVDC single circuit cable between Upper Kergord, Shetland and Noss Head, Caithness; and
- A new HVDC switching station at Noss Head, Caithness.

2.14. We proposed to set the delivery date for the output as 31 December 2024 to provide a firm and specific date at which delivery could be assessed.

Proposed Large Project Delivery (LPD) mechanisms

2.15. In our September 2021 consultation, we proposed to implement the following mechanisms under the LPD framework, specifically for the Shetland Link:

2.15.1. Re-profiling of allowances to prevent financial benefit accruing to SSEN Transmission from any delay.

2.15.2. Project Delay Charge where we proposed two possible options as below:

- Under the first option, we would apply a modest ex-ante Project Delay Charge in the region of £30k-£121k for each day that the link is delivered late.
- Under the second option, we would investigate the ex-post retrieval of appropriate Liquidated Damages instead of a pre-determined delay charge.

Proposed licence modifications for delivery of the Shetland Link

2.16. We proposed to make the modifications to SSEN Transmission's licence required to give effect to the project as statutory modifications under section 11A of the Act. Notice of the proposed modifications were provided in Appendix 2 of the September 2021 consultation document.

Summary of consultation responses

2.17. This section provides a summary of the responses we received to our September 2021 consultation. All non-confidential responses have been published on our website¹⁶. We have also included further detail of all consultation responses in Appendix 1 and set out our views on key consultation responses in Chapter 3.

2.18. We received 12 responses to our September 2021 consultation. These came from a mixture of electricity network companies, contractors, private citizens and other interested parties.

2.19. The majority of the respondents disagreed with our minded-to position on the overall cost allowances and fell in to two groups – four respondents who generally considered that our allowances were too high (or that the project should not have been approved), and five respondents who generally considered that our allowances were too low. Of the second group, respondents disagreed with our proposed disallowance of £12.4m in converter station costs, setting out that they considered the costs should be allowed in full as they had mostly been subject to competitive tender. Some of the same respondents also disagreed with our disallowances of incentivisation and hot meals costs.

2.20. Eight respondents provided comments on our proposed risk allowance and treatment of HILP, and Covid and Brexit risk. Three respondents commented that Brexit risk was foreseen and therefore should not be funded by consumers, and two respondents also disagreed with our proposed treatment of Covid costs for the same reason. Three respondents disagreed with our proposed threshold of 10% for HILP risks under the COAE mechanism, with two of these respondents commenting that there should be no threshold. Three respondents also disagreed with our proposed disallowance of interface risk costs.

2.21. We received six responses regarding the proposed output and delivery date. Three respondents agreed with the proposal, and three respondents did not. Those respondents that did not agree considered that the delivery date was not realistic (i.e., they considered that it was overly optimistic that the outputs would be delivered by then).

¹⁶ Shetland HVDC Link Project Assessment: <https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

2.22. On our proposed implementation of LPD mechanisms should the Shetland Link be delivered late, we received eight comments from respondents. Four respondents disagreed with our proposal, one was neutral, and three respondents supported our approach. The main reason for this disagreement was the perceived retrospective application of LPD to the Shetland Link as SSEN Transmission had negotiated its contract on the project ahead of our RIIIO-2 decision on LPD.

2.23. We received six responses to our proposed licence modifications. On the proposed modifications to Special Condition 1.1, one respondent disagreed with our proposal but did not state why, two respondents neither agreed nor disagreed, and three respondents agreed. On our proposed modifications to Special Condition 3.13, three respondents disagreed with the proposed COAE threshold, and argued that it should be lower to limit the Electricity Transmission Operator's (ETO) exposure to the potential costs that may be incurred below the threshold. Of the other three respondents, one did not agree with our proposal but did not state why, another was neutral, and one agreed with our proposal.

2.24. SSEN Transmission responded to all of the questions in our consultation. This included a detailed explanation of why it disagreed with our views on cost allowances, our proposed treatment of risk and our proposed implementation of the LPD mechanisms. SSEN Transmission also provided further explanation and evidence that it considered supported its view that all of the submitted project costs had been incurred or estimated efficiently.

3. Our decisions

Section summary

This section sets out our decisions, including highlighting any key changes from what was proposed in the consultation, following consideration of consultation responses.

Overview of our decision on cost allowances

3.1. The first part of this chapter provides further detail on our decisions and reasons for cost allowances, including where relevant, how we have considered consultation responses or carried out additional analysis.

3.2. Following the close of our September 2021 consultation, we considered all of the responses that we received. We also engaged with the project developer, SSEN Transmission on aspects of its response. Where necessary, we undertook further analysis to ensure that the final position, which we set out in this decision, is robust and provides value for money for consumers.

3.3. We have come to a final position on what we consider to be the economic and efficient capital costs of delivering the Shetland Link. In total, we have decided to provide SSEN Transmission with a capital cost allowance of £641.8m (£13.1m more than proposed in our September 2021 consultation).

3.4. The table below summarises the costs submitted by SSEN Transmission, and the capital cost allowances we have determined for the Shetland Link. The table also shows any changes in allowances since our September 2021 consultation.

Final cost allowance compared to consultation position

Cost Category	Submitted Cost (£m)	Adjustment (£m)	Allowance (£m)	Comparison with consultation position (£m)
Project Management	45.4	0.0	45.4	-
Regulation and Consent	8.3	-0.6	7.7	-

Engineering	6.3	-0.3	6.0	-
Construction	519.4	-2.4	517.0	+12.6
Commissioning	3.2	0.0	3.2	-
Operations	13.4	0.0	13.4	-
Insurance	1.0	0.0	1.0	-
Non-LOTI	-6.3	0.0	-6.3	-
Other	16.2	0.0	16.2	+0.5
Risk	68.6	-30.3	38.3	-
Total	675.4¹⁷	-33.6	641.8	+13.1

3.5. In the sections below, we provide further detail of these allowances and the amendments we have made to the cost allowances we proposed in our September 2021 consultation.

3.6. We proposed to allow in full the submitted costs in the following costs categories: Project Management, Commissioning, Operations, Insurance and Non-LOTI because our assessment indicated that these costs were economic and efficient. We did not receive any comments from respondents on these areas and have decided to confirm our proposal from the consultation.

3.7. We proposed disallow £0.6m and £0.3m from the Regulation and Consent, and Engineering cost categories respectively. Our view was the £0.6m was incurred from the purchase of land to establish access to the Upper Kergord site due to delays caused by VEWf should not be borne by consumers. The £0.3m was a saving on the business information modelling support (BIMS) costs due to an amended scope of works. We did not receive any comments from respondents on these areas and have decided to confirm our proposal from the consultation.

Converter station technology and civils (under the 'Construction' cost category)

3.8. In our September 2021 consultation, we proposed to disallow £12.4m in costs from the submitted converter station technology and civils costs at Upper Kergord, Shetland.

¹⁷ Totals may not sum up due to rounding.

3.9. To arrive at our consultation proposal, we undertook a bottom-up analysis of this figure and considered a range of project-specific circumstances that led to an increased cost in comparison to an 'average' project. There were several project-specific factors that we took into careful consideration as part of this analysis as detailed in our September 2021 consultation.

3.10. We received six comments from respondents specifically related to our proposal to reduce the cost allowance for the converter station. Five respondents disagreed with our proposed converter station allowance and one respondent agreed. Respondents who did not agree with our proposed allowance argued that most of the costs were competitively tendered, and therefore representative of the market price and that it was unacceptable for us to make a disallowance on this basis. Other respondents argued that we had not given enough consideration to environmental constraints, weather, site access issues, phasing of the works and the risk profile of undertaking this work.

3.11. In its response, SSEN Transmission made particular objection to the proposed converter station allowance, arguing that the specific costs we proposed to disallow had been tendered and that the proposed disallowed costs could be justified as unique to the Shetland Link. It stressed the uniqueness of the project and that our proposed disallowance of site-specific costs implied that our analysis had deemed them unnecessary. To this effect, SSEN Transmission submitted multiple supporting papers for our review.

3.12. These papers were related to further project-specific factors and project management costs included in the converter station civils contract in particular. After reviewing these papers in detail, it became clear to us that various restrictions on the site incurred through the planning permission process had led to a requirement for detailed phasing of works and increased temporary storage. We also understand that a significant proportion of converter station costs are related to the contractor's project management - this was a result of the contractor being involved in development and preliminary works at an early stage. The contractor of the civil works also took on the principal contractor role for the converter station site.

3.13. After considering the responses to our consultation and completing further review and analysis of the supplementary information provided by SSEN Transmission to support its costs, we have decided to amend the proposed allowance for the converter station. Our decision will increase the allowance for this piece of work by £12.2m. We are disallowing £0.2m for transportation of office and welfare units from the Scottish mainland to Shetland. SSEN Transmission submitted this cost as a unique characteristic twice; the first time before

our consultation and the second time as part of the supplementary information after the consultation. We proposed to allow this cost in our consultation and have therefore decided to disallow it in the second submission to avoid funding it twice.

Incentivisation costs (under the 'Construction' cost category)

3.14. In response to our September 2021 consultation, three respondents made specific comments on our proposal to disallow £1.1m in incentivisation costs. These are costs that SSEN Transmission proposes to pay its contractors to speed up works schedules in case of delays. Two of these respondents disagreed with our proposal and one agreed. The respondents who disagreed argued that these were important payments to ensure that the project timeline remained on track.

3.15. In its response, SSEN Transmission did not make any specific comment on our proposed disallowance of these costs, however we note that it did not agree with our overall cost allowance for the Shetland Link.

3.16. After considering these views, our view remains that these costs are neither economic nor efficient. SSEN Transmission is responsible for managing its contractors and related schedules to deliver the project on time and within budget. We have received no evidence to show that consumers would benefit from early delivery of these pieces of work. We therefore do not consider that it represents value for money for consumers to pay extra for this and will not allow £1.1m of submitted incentivisation costs from this category.

Hot meals costs (under the 'Construction' cost category)

3.17. In our September 2021 consultation, we proposed not to allow £0.9m of submitted costs relating to the provision of hot meals on site in Shetland. This reflected an adjustment of the unit cost of each meal to reflect our benchmark figure.

3.18. Two respondents, other than SSEN Transmission, made specific remarks on our proposed hot meals disallowance in their responses. Both respondents disagreed with our proposed disallowance. One of these respondents argued that an insufficient provision of hot meals on site in Shetland would result in increased travel offsite to nearby shops and would have a knock-on impact on productivity during working hours. The other respondent argued that it is the responsibility of SSEN Transmission to provide this service for workers and that there should be no cost allowance for hot meals.

3.19. In its response, SSEN Transmission highlighted that these costs were market tested and that the welfare of staff on the site should be considered. SSEN Transmission also provided us with a renegotiated lower cost quote.

3.20. In consideration of the responses and further information from SSEN Transmission we have decided to revise our allowance. We will allow an additional £0.4m for the provision of hot meals on Shetland. We will disallow £0.5m from the original submission from SSEN Transmission. We consider that this is an economic and efficient allowance that takes into account the cost of providing food in a remote location and welfare of on-site staff.

Long Term Service Agreement (LTSA) costs (under the 'Other' cost category)

3.21. In our September 2021 consultation, we proposed to disallow £0.5m for duplication of LTSA costs. These are costs that SSEN Transmission submitted to us for the provision of maintenance and operation of the assets post-construction.

3.22. In its response, SSEN Transmission informed us that there was a formula error in its submission. SSEN Transmission has since submitted further evidence to us, which confirms that these costs are not a duplication of other submitted costs.

3.23. We have amended our allowance to include these costs in the upfront allowance for the Shetland Link.

Risk

Overview

3.24. In our September 2021 consultation, we proposed to allow £38.3m out of a total submission of £68.6m in upfront risk allowances covering general project risk managed directly by SSEN Transmission, and Covid and Brexit risk, representing a reduction of £30.3m. We also proposed, separately, to allow for additional risk (c.6.6% of submitted project cost) that was transferred to contractors.

3.25. This £30.3m reduction in upfront risk allowance was made of the following:

- 3.25.1. Project risk: £17.9m related to risks that we considered ineligible for consumer funding. These were broadly grouped into risks relating to interfaces between SSEN Transmission's contractors, risks which we considered have sufficient coverage within minded-to allowances, risks that should be borne by

parties other than the consumer, such as contractors, and risks that no longer apply, such as those relating to an event which has passed.

3.25.2. Covid risk: £0.1m related to unjustified risk items and £10.4m related to risk that we considered too uncertain and moved into the COAE as explained in paragraph 3.26 below.

3.25.3. Brexit risk: £1.9m related to unsubstantiated risk.

3.26. We also proposed to allow for SSEN Transmission to recover justified and efficiently incurred future Covid costs through a new, no-threshold, part of the COAE that is ringfenced for Covid costs. This was to cover £10.4m of submitted Covid risk costs that we considered too uncertain to be funded within the upfront risk allowances.

3.27. Additionally, we proposed a 10% threshold for high impact low probability (HILP) and difficult to quantify risks under the existing COAE mechanism. This was an adjustment down from the 20% threshold in the SSEN Transmission's licence and we proposed that it cover risks such as extreme weather and other qualifying risks, the full list of which is included in Table 1 of Appendix 2.

Responses

3.28. Eight respondents provided comments on our proposed risk allowance and treatment of HILP, Covid and Brexit risk.

3.29. Three respondents commented that Brexit risk was foreseen and therefore should not be funded by consumers, and two respondents also disagreed with our proposed treatment of Covid costs for the same reason. Three respondents agreed with our proposed treatment of Covid risk through a no-threshold re-opener with one of these respondents suggesting that the same approach should be taken to Brexit risk.

3.30. Three respondents disagreed with our proposed threshold of 10% for HILP risks under the COAE mechanism, with two of these respondents commenting that there should be no threshold. Two respondents, including SSEN Transmission, suggested that the threshold should be set at 5% to reflect our decision on the Caithness-Moray Link.

3.31. In response to this question, we also received comments about our allowance of generic risk. Three respondents disagreed with our proposed disallowance of interface risk,

saying that under an EPCI-type contract interface risk would be built-in to the tendered cost and therefore it is not unreasonable for SSEN Transmission to cost this in their risk submission given their multi-contract approach to the Shetland Link. Some respondents also suggested that our proposed view on interface risk would disincentivise developers from adopting a multi-contract approach in future. The same comments were made about risk that we proposed to disallow because it should sit with contractors and not be funded by consumers.

3.32. SSEN Transmission's response proposed a 'use it or lose it' approach to generic project risk that we proposed to disallow and argued that the risk level in its submission is reflective of the multi-contract approach that it has taken. As above, SSEN Transmission suggested setting a 5% threshold for COAE. SSEN Transmission agreed with our treatment of Covid risk in a no-threshold re-opener and suggested an annual submission of actualised Covid costs to Ofgem.

Our Decision

3.33. We have considered the responses to our consultation as well as additional information provided by SSEN Transmission during the consultation. Our decision and rationale on risk allowances are provided below.

3.34. We will allow £38.3m in overall upfront risk that is managed by SSEN Transmission only. We moved a number of risk items from our list of ineligible risks to our list of eligible risks on the project's risk register after considering additional justification from SSEN Transmission such as uncertainty associated with an electricity distribution connection due to remoteness of the sites, weather risk during post-construction cable surveys, among others. However, a re-run of the project's risk model by SSEN Transmission with the updated list of eligible risks items resulted in no increase to general project risk allowance.

3.35. We disagree with the respondents' view that SSEN Transmission requires separate risk allowances specifically for interface risk. We consider that we have allowed a sufficient project management allowance for SSEN Transmission to sufficiently manage interfaces with and between its contractors. Risks costs arising from these interfaces should be adequately covered by the overall project and risk allowance, insurance and the negotiated liquidated damages within SSEN Transmission's contracts.

3.36. We have decided to confirm the proposals in our consultation to allow £3.8m and £1.4m for Covid and Brexit risk respectively that we consider to be justified.

3.36.1. On Covid risk, we remain of the view that £0.1m of this cost is unjustified and £10.4m of costs are too uncertain for consumers or SSEN Transmission to be funded within the upfront risk allowances. We have decided to include a no-threshold part of the COAE ringfenced for additional justified covid costs and capped at £10.4m. SSEN Transmission can make a submission for this funding when the project has been delivered.

3.36.2. On Brexit risk, we decided to maintain our disallowance of £1.9m in forecasted costs that are associated with the UK's adoption of a new certification scheme for imported goods. The deadline for this adoption has been extended from the end of 2021 to the end of 2022 and we therefore consider that the £1.4m we have allowed for this risk is adequate to cover it in full.

3.37. We have also decided to confirm the proposals in our consultation regarding the treatment of HILP and difficult to quantify risks and maintain a 10% COAE threshold. This approach is consistent with the 10% COAE threshold we set on similar projects such as NGET's Hinkley-Seabank project, NGET/SPT's Western HVDC project, and 5% on SSEN Transmission's Caithness-Moray Link, which we consider have similar residual risk profiles to the Shetland Link.

3.38. We consider that the upfront risk allowances, the proportion of project risk that SSEN Transmission has transferred to its contractors, and the COAE (with a 10% threshold and no threshold for Covid) altogether provide an appropriate level of cover against the risk profile of the Shetland Link project.

Output and delivery date

3.39. In our September 2021 consultation, we proposed the output and delivery dates that we considered the Shetland Link should meet.

3.40. We proposed "Shetland HVDC link" as the output for the Shetland Link project. We proposed that this output would include the timely delivery of the following components of the project:

- A new 132kV AC Gas Insulated (GIS) substation at Upper Kergord, Shetland;
- A new convertor station at Upper Kergord, Shetland;

- A 261km +/-320kV 600MW HVDC single circuit cable between Upper Kergord, Shetland and Noss Head, Caithness; and
- A new HVDC switching station at Noss Head, Caithness.

3.41. SSEN Transmission advised us that it would not be able to demonstrate the full 600MW capacity of the HVDC cable at project completion due to insufficient generation capacity and/or demand up to that level on Shetland. It proposed to demonstrate the delivery of this component by completing lower power transfer tests in export and import modes. These tests would be supported by design and modelling documentation to demonstrate that the link is capable of 600MW power transfers. SSEN Transmission stated that subsequent tests at incremental capacity levels, eventually up to 600MW, would be undertaken as more generation is installed.

3.42. Subject to the limitations identified in paragraph 3.41, we proposed that delivery of the Shetland Link, for the purposes of satisfying the LOTI delivery date, would be taken at the point the link is made fully and freely available to the Electricity Transmission System Operator.

3.43. We proposed to set the delivery date for the output as 31 December 2024, to provide a firm and specific date at which delivery can be assessed.

3.44. In response to our September 2021 consultation, we received six specific comments regarding the proposed output and delivery date. Three respondents, one of which was SSEN Transmission, agreed with our proposal. The other three respondents did not agree and considered that the delivery date was not realistic (i.e., they considered that it was overly optimistic that the outputs would be delivered by then).

3.45. We remain of the view that the above proposed output and delivery date are appropriate. This was the date suggested by SSEN Transmission based on its delivery plan and we agree that the date is appropriate. The output and delivery date will be implemented through licence modifications, notice of which is included in Appendix 2 of this document.

Large Project Delivery (LPD)

Summary of responses on LPD

3.46. We received eight responses regarding our approach to LPD mechanisms for the Shetland Link. Four responses were opposed to our proposal, one was neutral, and three

responses supported our approach.

3.47. All eight responses generally focussed on the Project Delay Charge (PDC), and there was little response to our proposal to re-profile SSEN Transmission's allowances to match actual expenditure if the project is delivered late.

3.48. Two of the three supportive responses highlighted that it was reasonable to hold SSEN Transmission accountable for prompt delivery of the project. Two other respondents did not specifically cover LPD but nonetheless highlighted the possibility of delays to the project and the importance of delivery incentives. Another response flagged concern that consumers would bear the cost of the PDC.

3.49. The four responses that opposed our proposals focussed on a few consistent themes, mostly related to the proposed first option to implement a modest ex-ante PDC:

- All four responses said that it is unreasonable to set the PDC after SSEN Transmission has completed its contract negotiations, especially because on the Shetland Link project, at the time of SSEN Transmission's contract negotiations, the LPD policy had not been finalised and was still at an early stage of development.
- The four responses, and SSEN Transmission's in particular, stated that there was a lack of detail regarding how the PDC would be calculated and implemented. SSEN Transmission also set out concerns with our understanding of its Liquidated Damages arrangements.
- SSEN Transmission set out its view that a delay to the Shetland Link would cause no consumer detriment, primarily because VEWf possesses a 'non-firm' connection agreement¹⁸. National Grid Electricity Transmission (NGET) raised concerns regarding the size of the PDC and potential costs for consumers on future projects, if it is linked to consumer detriment.

¹⁸ This means that if the Shetland link is delayed, the generator (VEWF) is not compensated by consumers in the form of damages/constraint costs. This is because VEWf are not allowed to connect to the grid until the enabling works (which include the Shetland link) are complete.

- Scottish Power Transmission (SPT) raised a concern regarding the potential for enforcement action on top of the PDC, citing the combination as a double penalty. NGET argued that the date that PDC applies from should be later than the delivery date for the project established in the licence, to allow some “float” for project delays.

Ofgem views on LPD consultation responses

3.50. We have considered the above responses and supplementary information provided by SSEN Transmission after the consultation in coming to a decision on the LPD mechanisms. We have provided our views below, grouped into the general themes presented in the responses.

Consideration of timing of LPD policy versus procurement for the Shetland link

3.51. We acknowledge that SSEN Transmission undertook the majority of its procurement for the Shetland Link before we confirmed our decision to use the LPD framework in RIIO-2. As such have sought to ensure that the PDC set on this project operates within the bounds of SSEN Transmission’s negotiated contracts, whilst still providing an incentive for timely delivery. We expect that for future LOTI projects network companies will take account of our LPD policy when engaging with contractors as they will have full visibility of the general LPD policy when negotiating and entering into contracts.

3.52. With regards our general policy on LPD, we acknowledge the concerns raised by four respondents that it is unreasonable to set an ex-ante PDC rate after contract negotiations have been finalised. Our RIIO-2 Final Determinations set out that *“our expectation is that network companies would utilise their own contract delay clauses to cover most or all of any PDC in the event that a project is delivered late”*¹⁹. Generally, we consider that it is natural that the PDC should be set when we have had sight of those finalised contract arrangements. Supporting this, our LOTI Guidance states that we *“will consult on the level of the PDC no later than the Project Assessment stage”*.²⁰ We envisage that licensees will take the LPD into account during contract negotiations for future LOTI projects and use good commercial practice to factor in consumer detriment, and to support an ex-ante PDC rate. However,

¹⁹ ET Annex, paragraph 2.112: [RIIO-2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator | Ofgem](#)

²⁰ Paragraph 7.25: [Large Onshore Transmission Investments \(LOTI\) Re-opener Guidance | Ofgem](#)

specifically for the Shetland Link, which is the focus of this decision, we have discounted the application of an ex-ante PDC rate for the reasons set out in paragraph 3.65.

3.53. SSEN Transmission also said that given the timings of its contract negotiations the only late delivery arrangements that should apply were those set out in our MPR Parallel Work decision in July 2017²¹. We do not agree with this because the MPR Parallel Work decision set no expectation for the treatment of future large projects as it related specifically to the delays experienced in relation to the Western HVDC project. The only decision it made in relation to recovering LDs on that project was that we *"will consult stakeholders further on our proposed approach in due course."* We also consider that the need to intervene mid-price control, as we did through the MPR Parallel Work decision, is a good example of why we are now seeking to provide improved clarity through setting ex-ante LPD arrangements at the start of each large project.

Detail behind Ofgem's methodology

3.54. Regarding SSEN Transmission's response about lack of detail behind Ofgem's methodology for one of the two options we proposed for PDC – using an ex-ante determined rate – we believe that the information provided in our consultation document was sufficient for stakeholders to provide a view on the appropriate level. We set out the range of values that we were considering for the rate, how this range had been derived, how it related to SSEN Transmission's wider LDs arrangements and confirmed that it would be set as a daily charge for each day of delay after the project's delivery date. Providing a detailed breakdown of how the range had been derived and how it related to SSEN Transmission's LDs arrangements was not possible due to concerns regarding commercial sensitivity.

3.55. Following review of the consultation responses and discussions with SSEN Transmission, we acknowledge that its LDs clauses generally relate to compensating one contractor for the delays caused by another, rather than compensating SSEN Transmission directly. However, we found evidence that a proportion of the LDs would compensate SSEN Transmission for delay through the portion of the LDs assigned as SSEN Transmission project management costs. We accept SSEN Transmission's observation that it would be very unlikely that they would ever claim the full LDs (or equivalent its proportionate project management

²¹ MPR Parallel Work Decision: <https://www.ofgem.gov.uk/publications/mpr-parallel-work-decision>

costs) because of the multi-contract nature of the LDs. This supports the rationale for our decision to use the other consulted-on option for PDC based on recouping the net LDs received for the Shetland link as set out in paragraph 3.65.

3.56. We acknowledge that we should have provided information regarding the level that we would propose to 'cap' the PDC at. This will be captured in future consultations on application of a PDC to future projects. In the specific case for the Shetland Link, the implementation approach we have chosen for the PDC (set out at paragraphs 3.65) is self-limiting as it is based on LDs that SSEN Transmission recovers.

3.57. Finally, we do not agree with SSEN Transmission that it is necessary to set out, either here or in the licence, the circumstances under which the PDC will not be applied. This is because we expect that any such circumstances are already covered by the definition of a COAE in the licence, which allows for the delivery date (and therefore the date from which the PDC could apply) to be extended if appropriate.

Consumer detriment

3.58. SSEN Transmission confirmed that consumer detriment is likely to be minimal if the Shetland Link is delivered late because "*VEWF has a non-firm connection which means it does not receive constraint costs as a result of the cable/the asset being late (or indeed a fault with the subsea cable).*"²² We have confirmed the accuracy of this statement with the Electricity System Operator (ESO).

3.59. Nonetheless, we still consider that there could be some environmental detriment to consumers if the connection of a large windfarm such as VEFW is delayed, as non-renewable generation may be required to operate in its place. This may also increase the wholesale price of electricity, which could represent further detriment to consumers. Extending the operation of Lerwick Power Station if the transmission link was delayed may also lead to additional costs to GB consumers, as it may increase the number of days the power station would need to be operated. Based on our analysis of the specifics of this situation, we consider however that any such consumer detriment is likely to be fairly limited in this case, which supports our decision to apply a modest PDC (as described in paragraph 3.65).

²² SHET consultation response, page 22.

3.60. We acknowledge NGET’s concern that linking the PDC directly to expected consumer detriment could lead to high PDCs and potentially higher contract costs. As set out in our RIIO-2 Final Determinations, consumer detriment will always be one of multiple factors that we consider when setting the PDC; it will never be the sole factor.

Other issues raised

3.61. We do not agree with SPT that application of LPD mechanisms should preclude the potential use of enforcement action or that they would represent a double penalty. The LPD mechanisms provide a standardised, within price control, toolkit to incentivise the timely delivery of large and strategically important projects, and to minimise the detriment caused to consumers if they are delivered late. Enforcement action may also be taken in appropriate cases in line with Ofgem’s statutory powers and our Enforcement Guidelines. For example, this might include cases where licence conditions have been breached and significant consumer detriment has occurred. Where appropriate, we will take account of any existing recovery mechanisms in deciding whether to open an enforcement case and, if a breach is established, in applying any appropriate remedy or sanction.

Ofgem decision on LPD

3.62. We have decided that if Shetland Link is delivered later than the set delivery date, we will:

- apply re-profiling of allowances to this project, which will remove any financial benefit accruing to SSEN Transmission from delayed project delivery; and
- apply a PDC to the Shetland Link, by recouping all Liquidated Damages that are paid to SSEN Transmission which it does not ultimately pay to its contractors.

3.63. We will give notice of our intention to apply the above if the project misses its delivery date, and will make the relevant adjustments to the allowances through the Price Control Financial Model (PCFM) and annual reporting tools in line with Part J of Special Condition 3.13. Further details about our decision on the re-profiling and PDC are provided below.

Reprofiling

3.64. The reprofiling will match SSEN Transmission’s allowances to its actual expenditure profile for the project. We will do this by first working out what percentage of total spend was

incurred each year and then by adjusting the allowances in line with these percentages.

PDC

3.65. We have decided to apply a PDC to the Shetland Link, in line with the second option described in our consultation document, which is to recoup all LDs that are paid to SSEN Transmission which it does not ultimately pay to its contractors. We have decided on this option following consideration of several factors:

- The PDC will provide a reasonable incentive on SSEN Transmission to deliver the project on time.
- It takes into account that a delay to the Shetland Link would not lead to significant detriment to consumers. As such, we consider that setting the PDC in the way we have is appropriate on this project.
- It is reflective of the multi-contracting approach adopted for delivery of this project and consequently the interaction of LDs as detailed on paragraph 3.55. This allows SSEN Transmission to manage the interaction of LDs across contracts and contractors.
- It provides consistency with our RIIO-2 Final Determinations and the LOTI Guidance, whereby the level of the PDC that we are setting takes into account the general contractual arrangements and specific delay clauses that SSEN Transmission negotiated in its contracts for the Shetland Link.

Modifications to Special Conditions 1.1 and 3.13 of SSEN Transmission's licence

3.66. In our September 2021 consultation we gave notice under section 11A of the Electricity Act 1989 of our intention to make modifications to SSEN Transmission's licence required to give effect to the Shetland Link. Notice of our decision to modify the licence and the full text of the modifications is provided in Appendix 2 of this document.

3.67. The delivery of the Shetland Link will expand SSEN Transmission's current transmission area beyond the current definition stipulated in its licence. As such, we proposed to modify Special Condition 1.1 of SSEN Transmission's licence to reflect this change by (i) inserting the 'Shetland HVDC Link' as new defined term; and (ii) amending the definition of SSEN Transmission's transmission area to include the Shetland Link. The reason for the modification

is that, as currently defined, the Shetland Link would sit outside of SSEN Transmission's transmission area. The result of the modification is that the transmission area in SSEN Transmission's licence would be extended to include the Shetland Link.

3.68. We proposed to modify Special Condition 3.13 to include delivery of the Shetland Link. The reason for the modification was that the Shetland Link is not specified as an output for SSEN Transmission in this current price control. The modification is necessary to ensure that SSEN Transmission has clear outputs for the delivery of this project in its licence. The result of the modification is that the Shetland Link is a clear deliverable within SSEN Transmission's licence and in this price control. In accordance with the licence, we will specify the outputs, delivery date and allowances for the Shetland Link shown at Appendix 2 of Special Condition 3.13.

3.69. We also proposed to make modifications to the existing COAE provisions in Special Condition 3.13 of SSEN Transmission's licence. Three respondents disagreed with the proposed COAE threshold for the reasons set out in paragraph 2.23 of this document. Of the other three respondents, one did not agree with our proposal but did not state why, another was relatively neutral, and one agreed with our proposal. We have considered the responses and remain of the view that a 10% COAE threshold is appropriate for the Shetland Link for the reasons set out in paragraphs 3.37 of this document. The modifications are included in Appendix 2 of this document.

3.70. In addition to the above licence modifications, we proposed in our September 2021 consultation, we have decided to introduce additional clauses to Special Condition 3.13 that are necessary to give effect to our decision on the implementation of the LPD for the Shetland Link. This is to address concerns in responses we received that, despite our proposal on LPD in the main consultation document, we did not propose corresponding modifications to the licence to indicate how we would implement the proposals. The additional modifications are within the scope of our consultation proposal to make all modifications to SSEN Transmission's licence required to give effect to the Shetland Link. Accordingly, our reasons and effects are as set out in the statutory notice of the proposed modifications provided as part of our September 2021 consultation. The full text of the modifications we are making are shown in Appendix 2 of this document.

3.71. In consideration of these responses, and for the reasons set out in paragraphs 3.62–3.65 and paragraphs 3.67–3.71 above, our decision is that the proposed output and delivery dates and implementation of the LPD are appropriate. These will be implemented in licence modifications, notice of which is included in Appendix 2 of this document.

4. Next steps

Section summary

This section sets out the next steps associated with this decision.

4.1. As detailed in Appendix 2 of this document, we are modifying Special Condition 1.1 and 3.13 of SSEN Transmission’s licence. The modifications will take effect from 25 January 2022.

4.2. This document has detailed our decision on cost allowances for the delivery of the Shetland Link. While the cost allowances are £641.8m, we previously approved a proposal by SSEN Distribution to make a contribution to the cost of the Shetland Link on behalf its customers and to reflect the benefit of this project to them. We published our decision and methodology for applying this contribution in December 2019²³. The contribution will be implemented via a modification to SSEN Distribution’s licence as part of its RIIO-ED2 price control settlement.

²³ Decision on Scottish Hydro Electric Power Distribution’s proposal to contribute towards proposed electricity transmission links to Shetland, Western Isles and Orkney:
<https://www.ofgem.gov.uk/publications/decision-scottish-hydro-electric-power-distributions-proposals-contribute-towards-proposed-electricity-transmission-links-shetland-western-isles-and-orkney>

Appendices

Index

Appendix	Name of appendix	Page no.
1	Summary of responses to our September 2021 consultation	37
2	Notice of Licence Modifications	42
	Annex 1 – Summary of responses	
	Annex 2 – Amended licence conditions	

Appendix 1 – Summary of responses to our September 2021 consultation

1.1. In September 2021, we published a consultation on our assessment of capital costs for the Shetland Link. That consultation set out our minded-to position on the allowable costs for the Shetland Link.

1.2. We received 12 consultation responses in total. These came from a mixture of stakeholders, including electricity network companies, contractors, and private citizens.

1.3. All of the non-confidential responses to our September 2021 consultation have been published on our website²⁴.

1.4. Below is a summary of responses to our September 2021 consultation.

Chapter 2: Proposed cost allowance for the Shetland Link project

Question 1: Do you agree with our proposed cost allowances for the Shetland Link project?

1.5. All of the respondents provided comments in relation to this question, with the majority stating that they disagreed with our proposed cost allowance for the Shetland Link. These responses fall into two groups: those who agreed with our disallowances but stated that the overall proposed cost allowance was still too high, and those who did not agree with our disallowances and therefore that our proposed overall allowance is too low.

1.6. Four respondents disagreed with our proposed level of allowances for this project, stating that they were too high. The general view of this group of respondents was that it is not acceptable for consumers to fund projects such as the Shetland Link in the current context of rising consumer energy bills. There was also some concern that this consultation was an application for more cost allowances in addition to the estimate presented by SSEN Transmission during the FNC stage, and there was a general view that the cost allowance should have been considered at an earlier stage.

²⁴ Shetland HVDC Link Project Assessment: <https://www.ofgem.gov.uk/publications/shetland-hvdc-link-project-assessment>

1.7. Five respondents disagreed with our proposed disallowance of £12.4m in converter station costs, most of which were tendered. Some of the same respondents also disagreed with our disallowances for contractor incentivisation and hot meals costs at the Upper Kergord, Shetland site. On our proposed disallowance of hot meals costs in particular, one respondent stated that lack of hot meals on site would lead to wasted time off site for contractors and increased transport costs.

1.8. In its response, SSEN Transmission made particular objection to the proposed £12.4m converter station disallowance, arguing that the specific costs we proposed to disallow had been tendered and that the costs over and above the Ofgem benchmark figure could be justified as unique to the Shetland Link. SSEN Transmission also submitted a supplementary paper to this effect for our review.

1.9. SSEN Transmission argued against our partial disallowance of hot meals costs, stating that these costs were market tested and that the welfare of staff on the site should be considered. SSEN Transmission's response also noted that our £0.5m disallowance of long term service agreement costs is not a duplication of costs and provided evidence of this.

Question 2: Do you agree with our proposals on how to treat the following types of risk: high impact, low probability (HILP); difficult to quantify; and Covid risks?

Eight respondents provided comments on our proposed risk allowance and treatment of HILP, and Covid and Brexit risk.

1.10. Three respondents commented that Brexit risk was foreseen and therefore should not be funded by consumers, and two respondents also disagreed with our proposed treatment of Covid costs for the same reason. Three respondents agreed with our proposed treatment of Covid risk through a no-threshold re-opener with one of these respondents suggesting that the same approach should be taken to Brexit risk.

1.11. Three respondents disagreed with our proposed threshold of 10% for HILP and difficult to quantify risks under the COAE mechanism, with two of these respondents commenting that there should be no threshold. Two respondents, including SSEN Transmission, suggested that the threshold should be set at 5% to reflect our decision on the Caithness-Moray Link.

1.12. In response to this question, we also received comments about our allowance of generic risk. Three respondents disagreed with our proposed disallowance of interface risk, arguing that under an EPCI-type contract interface risk would be built-in to the tendered cost and therefore it is not unreasonable for SSEN Transmission to cost this in their risk

submission given their multi-contract approach to the Shetland Link. Some respondents also suggested that our proposed view on interface risk would disincentivise developers from adopting a multi-contract approach in future. The same comments were made about risk that we proposed to disallow for the reason that it should sit with contractors and not be funded by consumers.

1.13. SSEN Transmission's response proposed a 'use it or lose it' approach to generic project risk that we proposed to disallow and argued that the risk level in their submission is reflective of the multi-contract approach that they have taken. As above, SSEN Transmission suggested setting a 5% threshold for COAE. SSEN Transmission agreed with our treatment of Covid risk in a no-threshold re-opener and suggested submitting annually to Ofgem any actualised Covid costs.

Chapter 3: Proposed Output and Delivery Date for the Shetland Link project

Question 3: Do you agree with our proposed output and delivery date for this project?

1.14. We received a total of six comments regarding the proposed output and delivery date. Three respondents agreed with the proposal, and three respondents did not.

1.15. One of the respondents who disagreed suggested that the proposed date was not realistic (i.e., they considered that it was overly optimistic that the outputs would be delivered by then). Another respondent deemed that setting an output and delivery date was not possible as the project would overrun regardless.

Question 4: Do you agree with our view on the implementation of the Re-Profiling and Project Delay Charge Large Project Delivery (LPD) mechanisms on this project? In particular, do you have a view on the application and level of the Project Delay Charge?

1.16. We received eight responses to this Question 4. Four responses were opposed to our proposal, one was relatively neutral, and three responses supported our approach.

1.17. All eight responses generally focussed on the Project Delay Charge (PDC), and there was not much commentary provided on our proposal to re-profile SSEN Transmission's allowances to match actual expenditure if the project is delivered late.

1.18. The three supportive responses highlighted that it was reasonable to hold SSEN Transmission accountable for prompt delivery of the project and that the delivery date may

not be met (i.e., they considered that it was overly optimistic that the outputs would be delivered by then).

1.19. Two other respondents didn't specifically cover LPD but nonetheless highlighted the possibility of delays to the project and the importance of delivery incentives. Another response flagged concern that consumers would bear the cost of the PDC.

1.20. The four responses that opposed our proposals focussed on a few consistent themes, mostly related to the PDC:

- **Timing** – All four responses argued that it is unreasonable to set the PDC after SSEN Transmission has completed its contract negotiations, especially because on this project, at the time of SSEN Transmission's contract negotiations, the LPD policy had not been finalised and was still at an early stage of development. SSEN Transmission stated that Ofgem's Mid-Period Review (MPR) Parallel Work decision established the delay/delivery incentive framework that the Shetland Link should be subject to.
- **Detail** – The four responses, SSEN Transmission's in particular, stated that there was a lack of detail regarding how the PDC would be calculated and implemented. SSEN Transmission also set out concerns with our understanding of its Liquidated Damages arrangements.
- **Detriment** – SSEN Transmission set out its view that a delay to the Shetland Link would cause no consumer detriment, primarily because Viking Energy Wind Farm possesses a 'non-firm' connection agreement. National Grid Electricity Transmission (NGET) raised concerns regarding the size of the PDC and potential costs for consumers on future projects, if it is linked to consumer detriment.
- **Other** – Scottish Power Transmission (SPT) raised a concern regarding the potential for enforcement action on top of the PDC, citing the combination as a double penalty. NGET argued that the date that PDC applies from should be later than the delivery date for the project established in the licence, to allow some "float" for project delays.

Chapter 4: Proposed Licence Modifications for the delivery of the Shetland Link project

Question 5: Do you agree with our proposed modifications to Special Condition 1.1 of SSEN Transmission's licence?

1.21. We received six responses to our proposed modification to Special Condition 1.1 of SSEN Transmission's licence.

1.22. One respondent disagreed with our proposal, and two respondents neither agreed nor disagreed commenting that this licence change should have been applied prior to SSEN Transmission commencing works.

1.23. Three respondents, including SSEN Transmission, agreed with the proposed modifications.

Question 6: Do you agree with our proposed modifications to Special Condition 3.31 of SSEN Transmission's licence?

1.24. We received six responses to this question.

1.25. Three respondents disagreed with the proposed COAE threshold of 10%, and argued that it should be lower. One of these respondents suggested that there should be no threshold at all, and two respondents suggested that the threshold should be set to 5%, the same level as the Caithness-Moray Link.

1.26. Of the other three respondents, one did not agree with our proposal but did not state why, another was relatively neutral, and one agreed with our proposal.

Appendix 2 – Notice of licence modifications

To:

Scottish Hydro Electric Transmission Plc

Electricity Act 1989

Section 11A (1)(a)

Modification of the Special Conditions of the electricity transmission licence held by the above licensee

1. The licensee to whom this document is addressed (“the licensee”) is the holder of an Electricity Transmission licence (“the Licence”) granted or treated as granted under 6(1)(b) of the Electricity Act 1989 (“the Act”).
2. On 3 September 2021 the Gas and Electricity Markets Authority (‘the Authority’)²⁵ gave notice (the Notice) to the licensees under section 11A(2) of the Act to modify the licence by amending Special Condition 1.1 Interpretation and definitions and Special Condition 3.13 Large Onshore Transmission Investment Re-opener (LOTIAt and LOTIREt).
3. The full text of the modifications is set out in Annex 1 below with the amendments to Special Condition 1.1 Interpretation and definitions and Special Condition 3.13 Large Onshore Transmission Investment Re-opener (LOTIAt and LOTIREt) shown in yellow highlight.
4. The Notice stated that any representations to the modification proposal must be made on or before 4 October 2021.
5. On 2 November 2021 a copy of the Notice was sent to the Secretary of State, Citizens Advice and Citizens Advice Scotland (the other parties). These parties agreed to a reduced period of 10 working days for representations; until 16 November 2021.
6. We have not received a direction from the Secretary of State that the modification should not be made. We received six responses to the Notice. We have placed all non-confidential responses on our website.
7. We carefully considered the responses to the Notice. A summary of the responses is provided in Appendix 1, paragraphs 1.21-1.26, and our consideration and responses to the issues raised in them are provided at paragraphs 3.66-3.71 of the main document.
8. It is necessary to make a number of minor alterations to the modifications set out in the Notice. These alterations are shown **in bold and cyan highlight** in the attached Annex 1. The nature and reasons for these alterations are as follows:

²⁵ The terms “the Authority”, “we” and “us” are used interchangeably in this document.

- Instead of inserting the Shetland HVDC Link specific COAE arrangements into paragraph 3.13.14, we have amended the definition of “Cost and Output Adjusting Event” and moved the detail to Appendix 3 to Special Condition 3.13. We have used the existing defined term “Cost and Output Adjusting Event” in the table, instead of the COAE acronym. This reflects that “Cost and Output Adjusting Event” was already a defined term. We also removed the words “extent of” from the table, which were unnecessary;
- We have made amendments to paragraph 3.3.15 to restructure the order of the sub-paragraphs and added a defined term ‘Shetland HVDC Link Covid Costs’, which is also being inserted into Special Condition 1.1. This is to improve the clarity of the drafting, in particular to deal with specific items before general items and to make clear both new paragraphs related only to the Shetland HVDC Link;
- We have made amendments to the allowance values in Appendix 2 to Special Condition 3.13 to change them from 2020/2021 prices to 2018/2019 prices, which is the price base of the RII02 licence. We have also removed footnotes from the Appendix, which are not used in the licence and were unnecessary bearing in mind that the definition of Shetland HVDC Link already specifies the required capacity;
- Finally, we have inserted a new Part J to specify the implementation of the Large Project Delivery mechanisms for the Shetland Link.

9. Further details on the background and reasons for the modifications are set out in the following document available on our website: [Shetland HVDC Link Project Assessment](#). Alternatively, a copy of that document is available from foi@ofgem.gov.uk.

10. Where an application for permission to appeal our decision is made to the Competition and Markets Authority (CMA) under section 11C of the Act, Rule 5.7 of the Energy Licence Modification Appeals: Competition and Markets Authority Rules²⁶ requires that the appellant must send to any relevant licence holders who are not parties to the appeal a non-sensitive notice setting out the matters required in Rule 5.2. Section 11A(10) of the Act sets out the meaning of ‘relevant licence holder’.

Under the powers set out in section 11A(1)(a) of the Act, we hereby modify the Special Conditions of the Electricity Transmission licence of the licensee in the manner specified in Annex 1. This decision will take effect from 25 January 2022.

This document is our notice of reasons for the purposes of section 49A(2) of the Act.

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James Norman
Head of Electricity Transmission Development
Duly authorised on behalf of the
Gas and Electricity Markets Authority

30 November 2021

²⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1019199/energy-licence-modification-appeals-rules.pdf

Annex 1 – Amended licence conditions

Modifications to Special Condition 1.1 of SSEN Transmission’s licence

(i) - The insertion of a new defined term “Shetland HVDC Link”

The new defined term “Shetland HVDC Link” will be inserted in the appropriate place in the table of definitions in Part B of Special Condition 1.1:

<p>Shetland HVDC Link</p>	<p>means the high voltage electric lines and electrical plant which:</p> <p>(a) comprise the following components:</p> <p>(i) a 600MW HVDC cable system, the sole purpose of which is to transmit electricity between a converter station at Upper Kergord on Shetland and an HVDC switching station at Noss Head near Wick on the Scottish mainland, both within the area specified in the Electricity Act 1989 (Uniform Prices in the North of Scotland) Order 2005, via a single circuit onshore and subsea cable corridor route contained within:</p> <p>(A) the territorial sea adjacent to the United Kingdom as defined in The Territorial Waters Order in Council 1964, The Territorial Sea Act 1987, the Territorial Sea (Baselines) Order 2014 or The Territorial Sea (Amendment) order 1998 or as defined in the United Nations Convention on the Law of the Sea Part II Section II Articles 3-5;</p> <p>(B) any Renewable Energy Zone; and</p> <p>(C) the continental shelf as designated under section 1(7) of the Continental Shelf Act 1964 or The Continental Shelf (Designation of Areas) Order 2013, or as defined in the United Nations Convention on the Law of the Sea Part VI Article 76;</p> <p>(ii) those converter and switching stations at each end of the HVDC cable system described in sub-paragraph (i) to facilitate the conversion of power from alternating current at Upper Kergord, to direct current for export to the mainland national electricity transmission system and to complete a multi-terminal HVDC system with the existing Caithness-Moray HVDC Link via the Noss Head switching station;</p> <p>(iii) cables to connect the HVDC converter station described in sub-paragraph (ii) to an alternating current substation at Upper Kergord on Shetland; and,</p> <p>(iv) cables and tie-in works with the existing Caithness-Moray HVDC Link at Noss Head; and</p> <p>(b) does not transmit electricity for the purposes of offshore transmission as defined in the Act.</p>
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(ii) – Amendment to the defined term “Transmission Area”

The existing defined term “Transmission Area” will be amended as shown in highlight.

Transmission Area means the area specified in the Electricity Act 1989 (Uniform Prices in the North of Scotland) Order 2005 made on 1 April 2005 and the Kintyre-Hunterston Transmission Line up to and including the transition joint lying within the West Kilbride Golf Course to the north of the landing point at Ardnail Bay, the subsea corridor within the territorial sea adjacent to Great Britain or within any Renewable Energy Zone or within an area designated under section 1(7) of the Continental Shelf Act 1964 that any part of the Caithness Moray HVDC Link **and the Shetland HVDC Link** owned by the licensee passes through, but excluding the Cruachan Transmission Line.

(iii) - The insertion of a new defined term “Shetland Link Covid Costs”

The new defined term “Shetland Link Covid Costs” will be inserted in the appropriate place in the table of definitions in Part B of Special Condition 1.1:

Shetland HVDC Link Covid Costs means costs incurred in relation to the Shetland HVDC Link up to £10.4m that are directly attributable to the ongoing covid pandemic and not covered by any insurances or contractual arrangements.

(iv) - Amendment to the defined term “Cost And Output Adjusting Event”

The existing defined term is shown below. We will add the text shown in **bold and highlight** and delete the text shown in **strikethrough and highlight**.

Cost And Output Adjusting Event means:
(a) *an Extreme Weather Event;*
(b) *the imposition of additional terms or conditions of any statutory consent, approval or permission (including but not limited to planning consent);*

(c) unforeseen ground or sea-bed conditions;

(d) for the purposes of the Shetland HVDC Link the events set out in Appendix 3 to Special Condition 3.13 (Large onshore transmission investment Re-opener); and

(e) for the purposes of ~~a~~**any other** particular LOTI Output, any event that the Authority directs is a Cost And Output Adjusting Event in the Project Assessment Direction.

Modifications to Special Condition 3.13 of SSEN Transmission’s licence

The existing text is shown below. The text proposed in the Notice **is shown in yellow highlight (and in strikethrough where we are now proposing different wording or the location has changed)** and changes since the Notice are shown in **bold and cyan highlight**.

(i) - The amendment of part G of Special Condition 3.13.

3.13.14 The licensee may only apply to the Authority for a direction adjusting the LOTI Output, the delivery date or associated allowances in Appendix2 where:

(a) there has been one or more Cost And Output Adjusting Events; and

(b) if the following requirements are met:

i. the licensee could not have reasonably foreseen the event or events;

ii. the licensee could not have economically and efficiently planned a contingency for the event or events;

iii. expenditure has been caused to increase or decrease by at least the percentage specified in, or in accordance with, paragraph 3.13.15, calculated before the application of the Totex Incentive Strength Rate, relative to the relevant allowance in Appendix 2 by the event, or, if there has been more than one event;

- by each event; or

- by any one or more events that the Authority has directed may count cumulatively towards the percentage threshold; and

iv. the increase or decrease in expenditure is expected to be efficiently incurred or saved.

~~*v. in the case of the Shetland HVDC Link, a pre-defined cost and output adjusting event as detailed in the table below*~~

Risk	Definition	Proposed Treatment
Covid	Additional project costs (up to £10.4m cumulatively) incurred that are directly attributable to the ongoing covid pandemic and not covered by any insurances or contractual arrangements.	Ringfenced no-threshold assessment of incurred costs. Costs to be submitted for consideration at the end of project construction
Physical damage to Flotta oil pipeline	Contractor damage to pipeline occurs during construction. Delays to programme schedule, environmental impact and damage to 3 rd party asset.	10% COAE threshold
Multi-terminal HVDC deployment	Additional project costs incurred that are directly attributable to deploying the multi-terminal HVDC technology and not covered by any insurances or contractual arrangements.	10% COAE threshold
Extreme weather	Additional costs directly attributable to extent of extreme weather above 1 in 10 year value.	10% COAE threshold

3.13.15 The percentage referred to in paragraph 3.13.14 is:

(a) 20%; ~~or~~

(b) in relation to the Shetland HVDC Link:

(i) for Shetland HVDC Link Covid Costs 0%; ~~or~~

(ii) for other costs 10%; ~~or~~

(c) such other percentage as the Authority may specify by direction. ~~;~~ ~~or~~

(e) 10% in the case of the Shetland link project; ~~or~~

~~(d) no threshold in the case of covid costs as defined above for the Shetland link project, up to a cumulative total of £10.4m.~~

3.13.16 Unless the Authority otherwise directs, the licensee must make any application no later than before the end of the period of three months beginning with the delivery date for the LOTI Outputs.

3.13.17 An application under paragraph 3.13.14 must be made in writing and must:

(a) include detailed supporting evidence that a Cost And Output Adjusting Event meeting the requirements set out in paragraph 3.13.14 has occurred;

(b) set out any amendments requested to the LOTI Output, the delivery date or associated allowances in Appendix 2;

(c) explain the basis of the calculation for any proposed adjustment to the allowances in Appendix 2, which must be designed to keep, so far as is reasonably practicable, the financial position and performance of the licensee the same as if the Cost And Output Adjusting Event had not occurred; and

(d) include a statement from a technical adviser, who is external to and independent from the licensee, whether, considered in the context of the value of the LOTI Output, the proposed adjustments to the LOTI Output, the delivery date or associated allowances fairly reflect the effects of the Cost And Output Adjusting Event. specify by direction.

(ii) - The insertion of part J into Special Condition 3.13.

Part J: Shetland HVDC Link large project delivery adjustments

3.13.30 In relation to the Shetland HVDC Link, where the LOTI Output is not delivered in full before the delivery date specified in Appendix 2, the Authority will make modifications to the special conditions of this licence to reprofile allowances and to impose a project delay charge by recouping net liquidated damages received by the licensee in accordance with the project assessment decision for Shetland HVDC Link issued on 30 November 2021.

3.13.31 Any modifications under paragraph 3.13.30 will be made under section 11A of the Act.

(iii) – The insertion of a new column, outputs, delivery date and allowances to Appendix 2 of Special Condition 3.13

The existing text is shown below. The text proposed in the Notice is shown in yellow highlight and changes since the Notice are shown in bold or strikethrough and cyan highlight.

Appendix 2

LOTI Outputs, delivery dates and allowances (£m)

LOTI Output	Delivery date	Regulatory Year					
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Construct, energise (and subject to restrictions ²⁸) and make freely and fully available to the ESO the Shetland HVDC Link	31-Dec-24	109.3 109.3 ¹¹ 1.2	203.5 203.5 ²⁰ 7.0	170.2 170.2 ¹⁷ 3.1	105.1 105.1 ¹⁰ 6.9	24.2 24.2 ²⁴ 6	5.7 5.7 ⁵ 8

(iv) - The insertion of Appendix 3 to Special Condition 3.13.

Appendix 3

We are inserting the table below, which we proposed in the Notice to add to paragraph 3.13.14, to Appendix 3. The text proposed in the Notice is shown in yellow highlight and changes since the Notice are shown in bold or strikethrough and cyan highlight.

Shetland HVDC Link cost and output adjusting event Table

Risk	Definition	Proposed Treatment
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²⁷ For the purposes of the LAR and LRAV inputs to the RIIO-ET2 PCFM, the 2020/21 totex allowance will be adjusted by +£109.3m in the RIIO-ET1 Legacy PCFM.

²⁸ Insufficient demand/supply capacity on Shetland up to the 600MW level on delivery date.

Covid	Additional project costs (up to £10.4m cumulatively) incurred that are directly attributable to the ongoing covid pandemic and not covered by any insurances or contractual arrangements.	Ringfenced no-threshold assessment of incurred costs. Costs to be submitted for consideration at the end of project construction.
Physical damage to Flotta oil pipeline	Contractor damage to pipeline occurs during construction. Delays to programme schedule, environmental impact and damage to 3 rd party asset.	10% COAE Cost And Output Adjusting Event threshold
Multi-terminal HVDC deployment	Additional project costs incurred that are directly attributable to deploying the multi-terminal HVDC technology and not covered by any insurances or contractual arrangements.	10% COAE Cost And Output Adjusting Event threshold
Extreme weather	Additional costs directly attributable to extent of extreme weather above 1-in-10 year value.	10% COAE Cost And Output Adjusting Event threshold