Consultation

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Harker – Consultation on the project's Initial Needs Case

Subject	Details
Publication date:	19 August 2022
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We are consulting on our views on the Harker Energy Enablement (Harker) electricity transmission project. We would like views from people with an interest in new transmission infrastructure, meeting the net zero transformation and competition in onshore transmission networks. We particularly welcome responses from consumer groups, stakeholders impacted by the project, stakeholders with an interest in the costs of electricity transmission infrastructure and the transmission owners. 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. 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.

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Executive summary

Initial Needs Case

National Grid Electricity Transmission Plc (NGET) own and operate the transmission network in England and Wales. In NGET's RIIO-ET2 business plan submission, expenditure on the 'Harker Energy Enablement' (Harker)[1] project was proposed across a number of separate engineering justification papers. The original proposal was to deliver some isolated upgrades at Harker in order to allow the connection of renewables to the Electricity North West Ltd (ENWL) and SPT networks, along with the inclusion of two boundary reinforcement projects. Following Draft Determinations for the RIIO-ET2 price control[2], NGET updated the proposed intervention to a full replacement of the substation based on an updated understanding of the condition of assets at the site and to deliver SF_6 reduction benefits which would not have been possible via the original scope of the project.

Given that the delivery, costs and scope of these works were uncertain, we concluded that the Harker project should be removed from the business plan (and consideration for upfront price control funding under the RIIO-2 arrangements) and instead be considered under the Large Onshore Transmission Investment (LOTI)[3] uncertainty mechanism. In September 2021 we received a submission from NGET for the proposed Harker project.

We have been assessing the need for the proposed projects under our LOTI mechanism, including assessing the suitability for the competition models identified within our RIIO-2 price control arrangements.

With our approval, NGET submitted a combined Initial and Final Needs Case. However, Special Condition 3.13.13 stipulates that before a Final Needs Case can be submitted, licensees must first have:

- submitted an Initial Needs Case in respect of which we must have published a response; and

[1] Harker is the shortened name used by NGET to refer to the project, and it is also the name of the site containing the substations relevant to the project. It is comprised of 132kV, 275kV and 400kV substations.
[2] https://www.ofgem.gov.uk/publications/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator
[3] Special Condition 3.13 of the Electricity Transmission Licence of NGET's electricity transmission licence requires that NGET completes its LOTI application in accordance with the requirements of the LOTI Re-opener Guidance and Submissions Requirement Document (LOTI Guidance)

- secured all material planning consents.

On the basis that material planning consents have not yet been obtained, in line with the timeline originally identified in NGET's delivery plan for the project, we have assessed NGET's submission as at Initial Needs Case stage of the LOTI process.

The Harker site currently contains a 400kV substation, a 275kV substation and a 132kV substation. Harker is a load and non-load driven project, triggered by several interactive drivers which include asset and civil health conditions, several customer connections, proceed signals under the Network Options Assessment (NOA) and environmental concerns. NGET estimated a whole life cost in the cost benefit analysis (CBA) of approximately £237m[4] and the project is planned for delivery by 2028[5]. NGET's preferred solution to addressing all project drivers on the site consist of an offline rebuild of 132kV and 400kV substations, along with the rationalisation[6] of the 275kV substation.

Figure 1: Aerial view of the Harker site[7]

This consultation seeks stakeholder views at the Initial Needs Case stage of the Harker project. It is also intended to provide clarity for NGET and wider stakeholders on our view on

[4] The NOA drivers for the project have now been removed from consideration under the LOTI INC assessment stage and will now be considered under the Incremental Wider Works mechanism (IWW), hence this cost is not inclusive of the associated works required.
[5] Customer connection facilitation to be achieved by 2026, but full availability for commercial load (remaining circuit transfers and commissioning activities) to be achieved by 2028.
[6] In this context, this will mean the appropriate and efficient removal of the 275kV substation.
[7] Image submitted by NGET as part of its submission.

the progress of the project to-date and what the focus of our assessment will be at the next stage of assessment, the Final Needs Case. It also sets out our thoughts on the suitability of applying a late competition model to the project.

Enforcement Investigation relating to the maintenance of the Harker site

This consultation in relation to the Harker project occurs after the commencement of Ofgem's enforcement investigation[8] into whether NGET has breached statutory obligations and licence conditions, relating to the condition of assets at Harker and delays in the connection of generation at Harker.

The opening of this investigation does not imply that Ofgem has made any findings about possible non-compliance by NGET with section 9 Electricity Act 1989 or SLC B7 of its Transmission License.

Large Onshore Transmission Investment mechanism (LOTI) Initial Needs Case assessment

We consider there is a clear needs case for intervention on the Harker site to address non-load and load drivers. With regards to the non-load drivers at Harker, a significant part of our consideration is based on the condition of the 132kV substation. We note that due to the significant deterioration of assets on the site, this intervention should occur as soon as possible.

NGET have demonstrated how the various drivers on Harker interact, and that taking forward a holistic technical solution that jointly addresses each of the issues, as opposed to a range of smaller individual solutions, is appropriate. Whilst our assessment identified some limitation in the CBA used to support the proposed solution and concerns about the level of detailed

[8] Investigation into potential breach of statutory obligations and licence conditions by NGET in relation to the Harker substation: https://www.ofgem.gov.uk/publications/investigation-national-grid-electricity-transmission-plc-and-its-compliance-obligations-under-section-9-electricity-act-1989-and-slc-b7-its-electricity-transmission-licence-relation-harker-substation

cost information, we do consider that it supports the need for intervention by highlighting the detriment if no intervention is carried out. Furthermore, the CBA supports NGET's preferred technical solution being the most economical of the options presented.

Delivery Model

As Harker is being considered under the LOTI mechanism, we have assessed the suitability of the project for 'late model' competition. This is in line with Chapter 9 of Final Determinations Core Document for the RIIO-2 period for Electricity Transmission[9] and the LOTI Re-opener Guidance and Submissions Requirement Document Guidance (LOTI Guidance).[10]

NGET's view is that due to the technical arrangements and ownership of assets on the site by the local Distribution Network Owner (DNO) and Power Transmission Limited (SPT), the proposed project does not meet the criteria for late competition (new, separable, and high value).

We recognise that the project as a whole is probably unlikely to meet the criteria for late model competition. This is due to some aspects of the project being unlikely to meet the "separable" criterion. It is possible that elements of the project that do meet the "new" and "separable" criteria could be repackaged into a standalone project that also meets the "high value" criterion and so could have competition applied to it. We have not pursued this approach for the Harker project at this time as our minded-to position is that that applying competition to the Harker project is not in the interest of consumers.

This minded-to position to retain the Harker project within the LOTI mechanism within the RIIO-2 framework is based on two key considerations. First, we do not consider it possible that we can implement either the Competitively Appointed Transmission Owner (CATO) model or Special Purpose Vehicle (SPV) model for the Harker project without causing material delay to the project. It is also informed by the indicative results of the analysis carried out for the Competition Proxy model (CPM) as part of our Final Needs Case consultation for the Eastern HVDC project. Both of these considerations suggest that it is unlikely that implementing one of the late models of competition is in the interest of consumers.

[9] RIIO-2 Final Determinations - Core Document (ofgem.gov.uk)
[10] Large Onshore Transmission Investments (LOTI) Re-opener Guidance | Ofgem

Next Steps

We welcome responses to our consultation, both generally, and in particular on the specific questions we have included in Chapters 3, 4 and 5. If you would like to respond to this document please send your responses to: RIIOElectricityTransmission@ofgem.gov.uk. The deadline for responses is 30 September 2022. We expect to publish our decision on the Initial Needs Case for the Harker project in Autumn of 2022.[11]

[11] In line with paragraph 5.1 of the FIOC Guidance.

1. Introduction

What are we consulting on?

1.1. This document sets out our initial view on the need for (and future regulatory treatment of) a proposed electricity transmission project to construct, rebuild and rationalise relevant substations on the Harker site, in order to address various interacting drivers that have manifested on the site. According to NGET, the proposal for intervention at Harker should be seen as part of a wider group of NGET investments to allow significantly greater bulk transfer of power from the north to the south of Great Britain. The project is referred to as the 'Harker Energy Enablement' (Harker) project.

1.2. Our assessments and position as set out in this document are subject to consultation and we invite stakeholders to respond using the contact details set out on the front of this document. We have indicated questions for stakeholders on particular areas at the start of each chapter, but stakeholders should not feel constrained by those questions in their response.

1.3. This document consists of 6 chapters and is set out as follows:

- **The LOTI re-opener mechanism** - **Chapter 2** summarises the Large Onshore Transmission Investment (LOTI) reopener arrangements. This is the RIIO-2 funding mechanism under which the Harker project will be assessed.

- **Initial Needs Case Assessment - Chapter 3** provides an overview of the proposals for the Harker project and CBA results, summarising our findings and initial conclusions.

- **Delivery model considerations** - **Chapter 4** summarises our proposed late competition assessment.

- **Large Project Delivery** - **Chapter 5** summarises our position on Large Project Delivery

- **Next Steps - Chapter 6** summarises next steps for the Harker project.

Context

1.4. Great Britain's onshore electricity transmission network is currently planned, constructed, owned, and operated by three transmission owners: National Grid Electricity Transmission (NGET) in England and Wales, Scottish Power Transmission (SPT) in the south of Scotland, and Scottish Hydro Electric Transmission (SHET) in the north of Scotland. We regulate these network companies through the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework. For offshore transmission, we appoint offshore transmission owners (OFTOs) using competitive tenders.

1.5. NGET, SPT and SHET are currently regulated under the RIIO-ET2 price control, which took effect from 1 April 2021 and will run for 5 years. Under the TOs' licence conditions, there is a mechanism for us to assess the need for, and efficient cost of, large and uncertain electricity transmission reinforcement projects. This mechanism is termed 'Large Onshore Transmission Investment' (LOTI). All projects that are submitted for assessment via LOTI during the RIIO-T2 period will be considered for their suitability for delivery through one of the late competition models.

1.6. Network investment is informed by the Future Energy Scenarios (FES), and the Network Options Assessment (NOA), which are developed and published annually by the Electricity System Operator (ESO)[12]. A key focus of the FES 2020 is the inclusion of the legally binding[13] UK Government Net Zero targets, to be achieved by 2050. The transition to a Net Zero economy will see increased demand on transmission boundary capability, which need to be facilitated by critical network reinforcements.

Related publications

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

[12] In April 2019 National Grid ESO became a legally separate business within National Grid PLC.
[13] https://www.legislation.gov.uk/uksi/2019/1056/contents/made

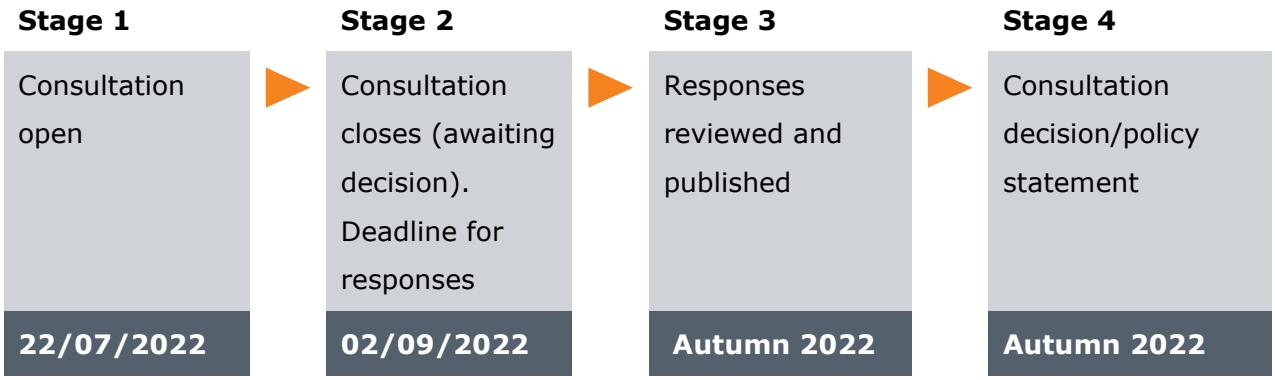
RIIO-2 Final Determinations ET Annex REVISED: https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_et_annex_revised.pdf

LOTI Reopener Guidance document: https://www.ofgem.gov.uk/publications-and-updates/large-onshore-transmission-investments-loti-re-opener-guidance

Investigation into potential breach of statutory obligations and licence conditions by NGET in relation to the Harker substation: https://www.ofgem.gov.uk/publications/investigation-national-grid-electricity-transmission-plc-and-its-compliance-obligations-under-section-9-electricity-act-1989-and-slc-b7-its-electricity-transmission-licence-relation-harker-substation

Consultation stages

Figure 1: Consultation stages



How to respond

1.7. We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page.

1.8. We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

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

Your response, data and confidentiality

1.10. 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.

1.11. 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.

1.12. 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") and Data Protection Act 2018, 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.

1.13. 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

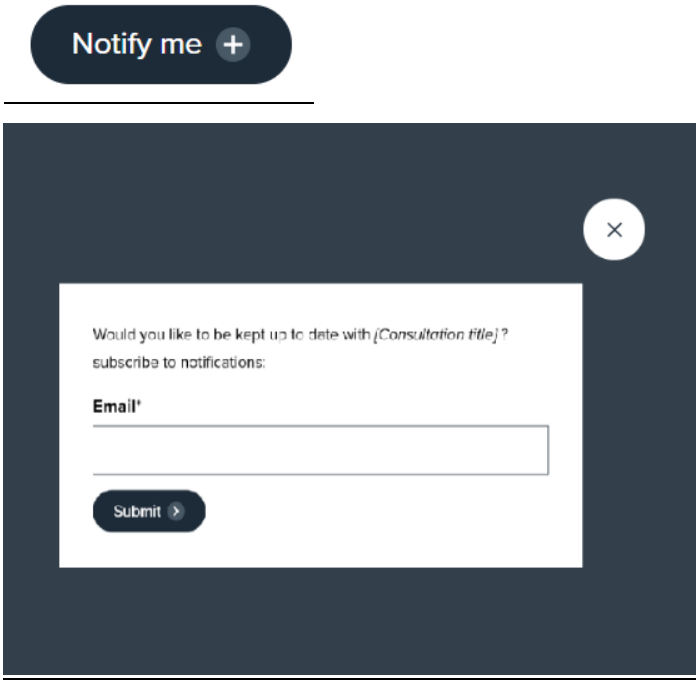
1.14. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

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?

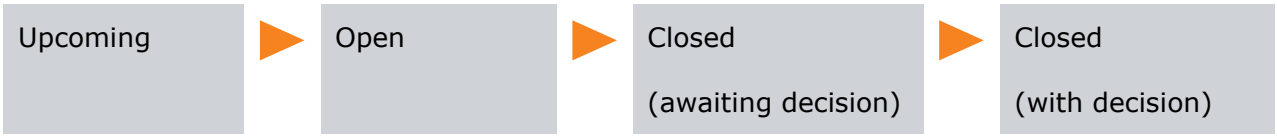
Please send any general feedback comments to stakeholders@ofgem.gov.uk

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.



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. The LOTI reopener mechanism

Section summary

This chapter sets out the regulatory framework which we use to manage Large Onshore Transmission Investment projects and our approach to assessing these projects.

Overview of the Large Onshore Transmission Investment (LOTI) reopener mechanism

2.1. The Large Onshore Transmission Investments (LOTI) re-opener mechanism is an uncertainty mechanism we have included within the RIIO-2 price control for the electricity transmission sector. It provides TOs with a route to apply for funding for large investment projects that can be shown to deliver benefits to consumers, but that were uncertain or not sufficiently developed at the time we set costs and outputs for the RIIO-2 price control period. The LOTI mechanism provides us with a robust assessment process through which we can ensure that TO proposals represent value for money for present and future consumers.

2.2. In order to qualify for the LOTI mechanism, TO proposals must meet the following criteria:

a) are expected to cost £100m or more of capital expenditure; and

b) is, in whole or in part, load-related.

2.3. We are satisfied that the Harker project meets these criteria, is eligible as a LOTI project and we are therefore assessing it in accordance with the LOTI process, which is detailed in the LOTI Guidance.[14]

Stages of our LOTI assessment

[14] Large Onshore Transmission Investments (LOTI) Re-opener Guidance | Ofgem

2.4. Following the approval of eligibility, our LOTI assessment process is made up of three main stages:

1. **Initial Needs Case (INC)** – The usual focus of our assessment at this stage is to review the technical and/or economic requirement for the project, the technical options under consideration, and the TO's justification for taking forward its preferred option for further development.

2. **Final Needs Case (FNC)** – Following the securing of all material planning consents for its project (unless we specify alternative timing), the TO will then need to submit a FNC. The focus of our assessment at this stage is to confirm the need for the project, by checking that there have been no material changes in technical and/or economic drivers that were established at INC.

3. **Project Assessment** – If the FNC is approved, the TO will then need to apply for a Project Assessment Direction. The focus of our assessment at this stage is the assessment of the proposed costs and delivery plan that the TO has in place for the project, with a view to potentially specifying a new LOTI Output, a LOTI Delivery date, and setting the efficient cost allowances that can be recovered from consumers for delivery of the project.

2.5. Funding for works at the Harker site were originally included in NGET's RIIO-T2 business plan. Following Draft Determinations for the RIIO-ET2 price control[15], NGET updated the proposed intervention to a full replacement of the substation based on an updated understanding of the condition of assets at the site and to deliver SF_6 reduction benefits which would not have been possible via the original scope of the project.

2.6. Given that the delivery timing, costs and scope of these works were uncertain we concluded that the Harker project should not be considered for upfront price control funding under the RIIO-2 arrangements and instead be considered under the Large Onshore Transmission Investment (LOTI)[16] uncertainty mechanism. Ahead of submission, we informed

[15] https://www.ofgem.gov.uk/publications/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator

[16] Special Condition 3.13 of the Electricity Transmission Licence of NGET's electricity transmission licence requires that NGET completes its LOTI application in accordance with the requirements of the LOTI Re-opener Guidance and Submissions Requirement Document (LOTI Guidance)

NGET that we would seek to relieve it of its requirement to submit an INC for the project. This was because we had already completed a preliminary assessment of the project as part of our assessment of the NGET's RIIO-2 business plan and because we expected that planning permission would have been obtained by this time.

2.7. NGET's delivery programme for the project as set out in their LOTI submission expected planning consent to have been secured by March 2022. However, NGET has since informed us that prioritisation of another project with a greater impact on the B6 boundary increase, as well as a scope change to one element of the contract, led to changes in contracting approach and project delivery timescales. As a result, NGET now expect to submit the planning application for Harker by the end of 2022 and receive an outcome by Q1 2023.

2.8. We consider that it would it not be appropriate to consult on, and then potentially approve an FNC for Harker until planning consent has been obtained for the project in line with Special Condition 3.13.14. On this basis, we have therefore consulted on this submission as an INC.

2.9. NGET made their submission in September 2021, for which we have applied a thorough and rigorous assessment process. This consultation covers our assessment of the INC submission for the Harker project and explains our initial findings.

3. Harker Initial Needs Case – Assessment

Section summary

This chapter sets out the key design decisions made to date on the Harker project. It also sets out our consideration of this approach and explains our findings.

Questions

Question 1: Do you agree with the technical needs case for investment across the Harker site?

Question 2: Do you agree with our conclusions on the technical solution required to address the various drivers at the Harker site?

Question 3: Are there any additional factors that we should consider as part of our Initial Needs Case assessment?

Overview of the Harker Proposal

3.1. The Harker site, comprised of 132kV, 275kV, and 400kV substations, is situated on the northern outskirts of Carlisle in the North West of England, south of the border with Scotland next to the M6 motorway. The site provides two of the four cross-border 400kV onshore circuits connecting National Grid's transmission system in England with Scottish Power Transmission (SPT) system in Scotland. The Harker 132KV substation was first commissioned in 1953, making it the oldest of the three substations on the site.

3.2. NGET's proposal seeks to apply significant investment across the Harker site to address a combination of interactive load[17] and non-load[18] drivers that have manifested over a number of years.

[17] Changes in the level or pattern of electricity supply and demand. In this case to accommodate additional generation connections
[18] Related to day-to-day operation of the network such as repairs and maintenance.

3.3. The proposed solution is a full site rebuild of Harker with a whole life cost estimated in the CBA at £237m[19], for which the scope of works to address all drivers include:

- Construction of new 132kV and 400kV substations, incorporating any extension and upratings required for new circuits and additional supergrid transformers (SGTs)

- Tendering for SF_6[20] free solutions across the site - while NGET are exploring the opportunity for SF_6 free technology across the site, with its viability expected to be confirmed during the Project Assessment stage, our expectation is that the site will eventually be fully SF_6 free when constructed[21]

- Addition of six 400/132kV 240MVA transformers to replace existing transformers, providing capacity required for present and future load drivers

- The removal of the 275kV substation as it is no longer needed, but maintaining existing connection to Stella West and Fourstones connected to the 400kV substation[22]

- Replacement of existing interbus transformers on the 275kV substation[23] for higher rated units to increase B6 boundary transfer capability, as recommended by the Network Options Assessment (NOA)

Project Drivers

Why the project has been brought forward

3.4. The NGET submission for the Harker project is driven by a complex combination of interactive load and non-load related drivers.

[19] This cost excludes the scope of the NOA works, which has been removed from the LOTI submission as it is now being considered under the Incremental Wider Works mechanism in order to expedite delivery.
[20] Sulphur hexafluoride is an extremely potent and persistent greenhouse gas that is primarily utilized as an electrical insulator and arc suppressant.
[21] Our review of NGET's CBA is justified on the basis of an SF_6 free site being used, we expect this to specified as part of the LOTI Output.
[22] Two 275kV transmission circuits are connected at the Harker 275kV substation. The primary functions of these circuits are to connect Harker 275kV to NGET's Fourstones and Stella West 275kV substations located in the North-East England.
[23] Following discussions, this element of the project will now be delivered under the Incremental Wider Works mechanism, and consequently, has been removed for consideration from the LOTI submission.

Load drivers on Harker

3.5. The Harker site is located in a key part of Great Britain's transmission network, sitting directly on the Southern side of network B6[24] boundary. Harker is an interface point between feeders to the SPT system, with two 132kV circuits from the SPT network connecting at the Harker 132kV substation. As several onshore windfarm customers are contracted to connect within the SPT network, NGET's system will need to accommodate additional southern power flows through the 132kV system. These additional power flows will trigger reinforcement works at Harker to increase the amount of power that can flow through the site.

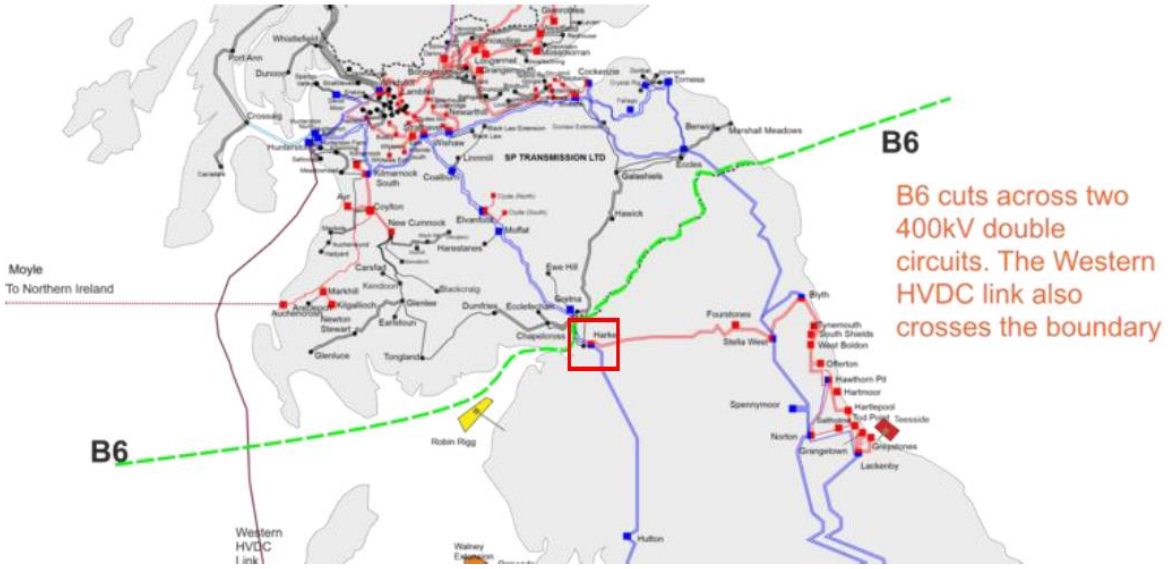


Figure 2: Harker substation relative to the B6 boundary[25]

3.6. Harker also provides one of the distribution / transmission connection points for the local Distribution Network Operator (DNO), Electricity North West Ltd (ENWL). As Great Britain looks to transition towards Net Zero, additional capacity at the distribution /

[24] B6 is the primary boundary by which transfer capacity between the transmission systems in Scotland and England is measured.
[25] Image submitted by NGET as part of its submission.

transmission boundaries will be required to meet increased demand levels (load growth), as well as capacity to address anticipated growth in decentralised generation[26].

3.7. ENWL are forecasting continued steady growth in generation growth, as per table 1 below, with further analysis demonstrating that sufficient capacity must be designed into a solution to accommodate 791.51MW of distributed generation. According to NGET, this additional capacity cannot be managed by the current number of SGTs on the 132kV substation as this will lead to reverse power flow thermal issues.

Connection Point Peak (Harker)	2020	2021	2022	2023	2024	2025	2026	2027
MW	504	497	503	505	507	526	528	542
MVAr	32	69	53	39	61	55	27	32
Access Point Peak (Harker-Hutton)	2020	2021	2022	2023	2024	2025	2026	2027
MW	449	442	450	458	464	467	470	484
MVAr	70	98	100	78	99	98	70	75

Table 1: ENWL forecasted generation growth[27]

3.8. The Harker 275kV has no direct load related drivers (e.g. customer connections) that would necessitate intervention if all other drivers at the 132kV and 400kV substation were to fall away. However, there is a high degree of interaction between the 275kV substation and the 132kV and 400kV substations and the drivers at those sites, and so the solutions considered for the 132kV and 400kV site drivers would also trigger works at the 275kV site. More specifically, there would be a need to uprate the 275kV SGTs to allow for the additional infeed from the 132kV system to the 400kV system.

3.9. Additionally, there is a wider system need relating to the 275kV substation, which has received a proceed signal under the latest NOA (2022) for works to address this need. The Harker 275kV substation is connected to the 400kV substation by four 400/275kV SGTs. NOA studies has identified the replacement of two of the four 500MVA inter-bus transformers (SGT5 and SGT6), that form the connection between substations, as work that should progress as soon as possible. These projects are identified in the NOA publication by the investment codes HAEU and HAE2 respectively, and their implementation would address the

[26] Decentralised energy is electricity that is not generated on the main grid but rather produced nearby to where it will be utilised, instead of at a large plant elsewhere and sent through the national grid.
[27] Image submitted by NGET as part of its submission.

need for additional capability to be delivered across the B6 boundary. Following engagement with NGET, the NOA drivers for the project have now been removed from consideration under the LOTI INC assessment stage (see Paragraph 3.31) and will be considered under the Incremental Wider Works mechanism (IWW).

3.10. With regards to the load drivers on the 400kV substation, NGET currently anticipates the need for additional connections in the future to accommodate potential customers, as highlighted in table 2 below.

Need	Connection	How	When
[REDACTED]			
Innova Renewables	400MW of solar and batter storage	A single 400kV User connection bay at Harker 400kV substation	2028
NOA/SPT	Harker-Teviot 1	A single 400kV feeder bay at Harker 400kV substation	2033
NOA/SPT	Harker-Teviot 2	A single 400kV feeder bay at Harker 400kV substation	2033

Table 2: Anticipated extensions to Harker 400kV substation[28]

3.11. The load drivers for the Harker substations may therefore be summarised as:

a) Connection agreement for additional reverse power infeed into the 132kV substation due to additional embedded generation on the DNO network;

b) Connection agreement as an Affected TO for the ratings increase of the two existing 132kV circuits and the creation of a third 132kV circuit to facilitate customer connections to the SPT network;

c) Recommendation from NOA to proceed with upgrading of two 400/275kV transformers at Harker to increase B6 boundary capability[29];

[28] Image submitted by NGET as part of its submission.
[29] This driver will no longer be considered under LOTI and will now be considered under the Incremental Wider Works (IWW) mechanism.

d) Future anticipated connections to the Harker 400kV substation either contracted or at offer stage.

Non-load drivers on Harker substations

3.12. NGET undertook a condition assessment in 2001 highlighting a range of asset health issues at the Harker site for which they proposed interventions in the previous two price control periods (referred to as TCPR4 and RIIO-ET1). At the time of NGET's current INC LOTI submission, significant civil structure and asset condition issues are still applicable at the 132kV and 275kV substations on the site. It is not sufficiently clear to us at this stage as to the reasons why the condition issues persist, and we continue to engage with NGET to understand this in further detail. NGET have also highlighted environmental drivers across substations within their current INC LOTI submission, principally SF6 leakage at the 275kV and 400kV substations.

3.13. The need for intervention to address the condition of assets on site is supported by structural assessments, as well as physical observation by Ofgem in a visit to the Harker site[30], and we view that the current conditions are sub-optimal for the long-term operation of the Harker site. Additionally, the capability of the civil structures and assets places various constraints on the ability to implement more targeted lower cost solutions to the load drivers summarised in Paragraph 3.11.

Asset Health

3.14. Asset health issues across Harker include:

- Reinforced concrete support structures in the 132kV and 275kV substation – Concrete spalling resulting in the reinforcing bars becoming visible in places. Intervention is required to minimise the likelihood of further spalling and arrest the corrosion of reinforcing bars. If no intervention occurs, the structures will continue to degrade.

[30] Ofgem Harker site visit in June 2020 to understand the project further. This was also to ascertain Ofgem's understanding of the condition of the site.

- Cracking of post insulation in the 132kV substation – This is evident in multiple places across the site, both in single post insulators and in the disconnectors and earth switches.

- Overhead insulation and fittings – There is a need to invest in replacement overhead conductor and fittings alongside replacement of the 'through bolts' that attach these to the concrete gantries.

- Barrier bushings in oil circuit breakers – These are known to have historic issues with moisture ingress. There is evidence of deterioration mechanisms following electrical testing.

Ref.	Structure	Carbonation	Cover	Condition
1	Bay 1 - Gantry leg	27mm	29mm	Cracking above reinforcement position
2	Bay 1 - Disconnector leg	30mm	31mm	Failing/poor quality repairs
3	Bay 1 - Post insulator stem	<2mm	27mm	Structure in better condition that all others in bay, recently repaired or later structure
4	Bay 1 - Post insulator foundation	unknown	>100mm	Fair condition
5	Bay 1 - Post insulator stem	25mm	14mm	Failing poor quality repairs
6	Bay 1 - Gantry leg	>28mm	28mm	Extensive spalling concrete
7	Bay 6 - Disconnector leg	>19mm	19mm	Spalling concrete
8	Bay 11 - Gantry leg	35mm	30mm	Spalling concrete, cracking evident over greater section of leg
9	Bay 11 - Current transformer leg	15mm	28mm	Generally fair condition
10	Bay 12 - Gantry leg	3mm	28mm	Good condition
11	Bay 9 - Gantry leg	4mm	26mm	Good condition

Table 3: Civil structure condition summary for the 275kV substation[31]

[31] Image submitted by NGET as part of its submission.

(1) 230 isolator showing typical cracking *(2) 180 isolator post*

Figure 3: Typical cracking observed on the 132kV substation[32]

3.15. Across all the substations on Harker, the NGET system for measuring asset health has determined that there are 17 lead assets[33] and in excess of 600 non-lead[34] assets with condition-related intervention drivers to be addressed in the current price control period RIIO-T2. This includes the interventions required to mitigate SF_6 leakage from the 400kV substation. Tables 4-6 give summaries of health driver priorities for each substation, with assets in the column of 'T2 timescales' determined to require replacement in the RIIO-T2 price control.

[32] Image submitted by NGET as part of its submission.
[33] Lead assets are defined as circuit breakers, reactors and transformers.
[34] Substation support structures, post insulators, overhead insulators and fitting, AIS disconnectors and earth switches, Air Insulated Switchgear (AIS) instrument transformers, AIS surge arresters, reactive compensation, and protection and control.

Priority	T2 Timescales	T3 Timescales	>T3 Timescales	Grand Total
HARK1	**321**	**4**	**56**	**381**
AIS CT			9	9
AIS Disconnectors	24		2	26
AIS Earth Switches	7			7
AIS Gas Circuit Breakers	2		1	3
AIS VCT			6	6
AIS VT	2	4	5	11
Oil Circuit Breakers	7		1	8
Overhead Insulators and Fittings	60			60
Post Insulators	84			84
Support Structures (Gantries)	46		14	60
Support Structures (Disconnectors)	19		4	23
Support Structures (Post Insulators)	70		14	84

Table 4 – Asset Health Summary for the 132kV Substation[35]

Priority	T2 Timescales	T3 Timescales	>T3 Timescales	Grand Total
HARK2	**221**	**26**	**235**	**482**
AIS CT	13	3	128	144
AIS Disconnectors	25		15	40
AIS Earth Switches	11		13	24
AIS Gas Circuit Breakers	7		4	11
AIS Surge Arresters	12	21		33
AIS VCT			15	15
AIS VT	6	2	23	31
Overhead Insulators and Fittings	24			24
Post Insulators	47			47
Reactive Compensation			6	6
Super Grid Transformers			7	7
Support Structures (Gantries)	18		6	24
Support Structures (Disconnectors)	20		9	29
Support Structures (Post Insulators)	38		9	47

Table 5: Asset Health Summary for the 275kV Substation[36]

[35] Image submitted by NGET as part of its submission.
[36] Image submitted by NGET as part of its submission.

Priority	T2 Timescales	T3 Timescales	>T3 Timescales	Grand Total
HARK4	118	15	242	375
AIS CT			63	63
AIS Disconnectors	2	1	4	7
AIS Earth Switches	4	2	15	21
AIS Surge Arresters	17	9	9	35
AIS VT		3	32	35
GIS CT			81	81
GIS Gas Circuit Breakers	1		14	15
GIS Gas Zone (1993)	56			56
GIS Gas Zone (1999)	9			9
GIS Gas Zone (2006)	6			6
GIS Gas Zone (2008)	23			23
GIS Gas Zone (2014)			13	13
Reactive Compensation			3	3
Series Reactors			2	2
Super Grid Transformers			6	6

Table 6: Asset Health Summary for the 400kV Substation[37]

SF_6 emissions

3.16. There is an ongoing need to minimise Sulphur hexafluoride (SF_6) losses, in-line with UK government ambitions to achieve Net Zero by 2050[38]. Although there are holdings of SF_6 within the 132kV and 275kV substations (509kgs), the primary concentration is at 400kV substation (16,365kgs). Using the updated 'Green Book' supplementary guidance on delivering public value from spending proposals[39] for the non-traded cost of carbon (specifically a 2021 price of £244/tonne of carbon dioxide), the emissions from the past 5.5 years equate to a societal value of approximately £18m.

3.17. As displayed in table 7 below, the most recent data at the time of NGET's submission, Harker has become the highest emitting sites for SF_6 within NGET's network.

[37] Image submitted by NGET as part of its submission.
[38] Net Zero Strategy: Build Back Greener - GOV.UK (www.gov.uk)
[39] The Green Book and accompanying guidance and documents

Substation	SF6 'Top Up' Events April to June 2021 (kgs)	T2 Re-openers
HARKER 400kV S/S	**339.05**	**LOTI Process**
LITTLEBROOK 400kV S/S	280.12	Replacement (T1)
SELLINDGE 400kV S/S	243.37	No – T2 CB NARM Refurb Plan
SIZEWELL 400kV S/S	157.76	Target Repair then T3 Replacement
DINORWIG 400kV S/S	136.065	Target Repair + LOTI Process
BARKING 400kV S/S	114.385	No
NEEPSEND 275kV S/S	110	Replacement (T1 - Not PCD)
RASSAU 400kV S/S	75.43	GIS/GIB Refurbishment
NORTHFLEET EAST 400kV S/S	58.44	GIS/GIB Refurbishment
OSBALDWICK 400kV S/S	48	GIB Refurbishment

Table 7: NGET's top emitting SF_6 site for April to June 2021[40]

Optioneering Considerations

How NGET arrived at their preferred option for reinforcement

Isolated solutions to address drivers

3.18. NGET first examined the feasibility of addressing the different drivers independently through replacement, refurbishment and extension of the 132kV, 275kV and 400kV substations.

3.19. The identification of updated information about the condition of the civil infrastructures at the site, delivery challenges, emerging demands to satisfy the needs of ENWL and SPT, and the additional wider works to increase B6 boundary capability and reduce SF_6 emissions, resulted in NGET taking the view that the project drivers could no longer be considered in isolation. Whilst the drivers are different, the proposals to overcome them had become increasingly interlinked which meant a more holistic approach was required.

3.20. It was concluded that the approach would be changed, and 'whole site' options would be pursued to satisfy all the drivers in combination. By pursuing a full rebuild of the Harker site, NGET's proposed approach provides the Harker site with the additional capability requirements it needs to accommodate future generation changes, whilst also replacing

[40] Image submitted by NGET as part of its submission.

assets in poor condition that would still require subsequent intervention to address if a more targeted solution to the load drivers at the site was pursued.

Whole site approach

3.21. With a view to assess a co-ordinated overall solution that addresses all aspects of the NGET submission, NGET investigated four options to determine whether they yielded more satisfactory outcomes. Appendices 1 and 2 provide further detail on considerations made, along with a summary of the scope of works that would need to be carried out, for each option.

1) *Retain existing 400kV substation, refurbish & uprate 275kV substation and rebuild 132kV substation with sufficient space to satisfy the load related drivers*

   This option is the incremental and progressive replacement and uprating of the existing infrastructure at Harker. It was rejected on the basis that it would preserve the 275kV substation, as opposed to rationalisation[41], beyond what is necessary to maintain the circuits to the Fourstones and Stella West substations. This would also be an inefficient departure from transmission systems, where the 275kV voltage level is being gradually phased out and replaced by 400kV infrastructure to increase the capability of the network. It is also a relatively high-cost approach to resolving the issues when compared to rebuilds of the site.

   In NGET's view, with this option key customer connection dates would also not be met, as the 132kV and 275kV substations would need to be replaced over an extended programme. The build sequence is estimated be in excess of 13 years, which is not suitable for the timescales required.

2) *In-situ replacement of the whole substation*

   This is a phased approach, where removal of assets at the 275kV substation would create space to build the replacement 400kV and 132kV substations within the

[41] In contrast to Option 1, Options 2,3 and 4 seek to remove and rationalise the 275kV equipment to the minimum required to maintain connections to Stella West and Fourstones 275kV substations. This means that most 275kV infrastructure is demolished as part of the project and direct connections are established between the 132kV and 400kV.

footprint of the existing site. The works to meet ENWL and NOA drivers would form the early stages of the programme, with the rebuilding of the 400kV and 132kV substations following.

The work to remove the 275kV substation, while maintaining supplies to the 132kV substation, would require the installation of temporary connections across the site. NGET highlight that this would not be the most efficient delivery approach and is reflected in the costs. There are likely to be extensive and complicated build stages and the option is only viable following further system studies and agreement with National Grid Electricity SO and customers.

In NGET's view, this option would also fail to meet key customer connection dates as the 132kV and 400kV substations would be replaced in a consecutive sequence, and elements of the 275kV substation would need to be demolished to create space for further construction, resulting in an extended programme. The build sequence is estimated to in excess of 10 years. In addition, there is also various risk and hazards associated with this option, and therefore the option was rejected.

3) *NGET's preferred option & proposal - Rebuild of the substation on a greenfield site in Gas Insulated Switchgear (GIS) considerations*

In contrast to Option 2 above, this option would propose to build a new 400/132kV substation on a greenfield site adjacent to the existing site. The substation would be taken away from the existing constraints and hazards of working within the existing Harker compound, therefore for NGET this option is considered a lower risk approach and a better option for achieving the dates required for the load related drivers. The construction would be likely to take two years, followed by three years of commissioning outages to divert connections into the new substation. The build sequence is therefore five years. The completion date is estimated to be 2028.

This option is NGET's preferred option to address the project drivers at Harker as it is considered the most likely to succeed within budget and on time. Additionally, the perceived benefit of GIS technology is a reduced footprint compared to Air Insulated Switchgear (AIS) substation solution (Option 4) which means land can be purchased at a lower cost than AIS, and there is a lower risk of complications with the planning application required. According to NGET, following engagement with Carlisle City Council, which is the relevant Local Planning Authority (LPA), on the project, the LPA highlighted a preference for the smaller footprint associated with the GIS solution.

4) Rebuild of the substation on a greenfield site in AIS considerations

As with Option 3, this option proposes the building of a new 400/132kV substation on a greenfield site adjacent to the existing site. The substation would also be taken away from the existing constraints within the compound, making this a lower risk approach. However, as an AIS solution this option would require substantially more land than the smaller footprint GIS solutions. The footprint of the site would extend to 146,503m^2 although this footprint could be significantly more depending on the final configuration, extendibility considerations. This is in comparison to the GIS solution in Option 3, which would have a footprint of 41,800m^3. As a result, NGET view that there is a greater risk of not achieving the dates required for the load related drivers due to additional consenting, land acquisition and a lengthier civil works[42] programme. The risk of planning objections is perceived to be significant from both a statutory and public perspective, and hence this option was rejected by NGET.

CBA

Option No.	Description of Option	Preferred Option	Total Forecast Expenditure (£m)	Total NPV	Delta (Option to baseline)	10 Years	20 Years	30 Years	45 Years	Total NPV (Incl. Monetised Risk)
Baseline	Do minimum	N	-170.73	-1,383.88		524.40	912.73	1,154.52	1,354.43	1,383.88
1	Replace and upgrade 275 kV substation, rebuild 132kV substation and extend the existing 400kV substation.	N	-233.64	-190.36	1,193.52	-49.79	-114.24	-152.90	-184.67	-190.36
2	Insitu replacement of the whole substation	N	-248.36	-284.31	1,099.57	-91.97	-174.64	-230.07	-276.18	-284.31
3	Rebuild of the substation on a greenfield site (GIS)	Y	-237.29	-171.83	1,212.05	-68.29	-110.43	-141.85	-168.13	-171.83
4	Rebuild of the substation on a greenfield site (AIS)	N	-250.77	-180.34	1,203.54	-65.95	-114.25	-147.86	-175.83	-180.34

Table 8: CBA summary of options[43]

3.22. The CBA results present NGET's preferred Option 3 as the most economical and efficient option to proceed with, at an estimated whole life cost of £237m with a net present value (NPV) of -£172m compared to the other three options.

[42] Civil works is used in construction in relation to the infrastructure of transport networks and projects, particularly the maintenance of existing structures or the design and construction of new projects.
[43] Image submitted by NGET as part of its submission.

3.23. This CBA applies a generated spending profile to each option, from which total expenditure and NPV over the period are determined. The total expenditure for each option simply reflects the total cost of the associated scope of works necessary to fulfil the relevant option, with the cost of end-of-life interventions also factored in.

3.24. The NPV for all options are negative, given that investments and constraint costs represent categories of costs, and so the favourable option from an NPV perspective is one which is least negative NPV solution, Option 3.

3.25. More details on the CBA inputs and calculations can be found in Appendix 3.

Our views on Harker project drivers & Optioneering

LOTI Submission considerations

3.26. In our view, NGET's original submission for the Harker project did not initially provide all the information we required in order to reach a considered view on whether NGET were pursuing the appropriate option. This initially significantly limited our ability our assessment of the NGET submission, until data was eventually obtained after multiple requests were made. In both cases, however, we agree with NGET's narrative that the majority of assets require intervention.

3.27. In addition, we note the limited asset specific information on other non-lead assets, where an age-based metric on family types (Anticipated Asset Life) is preferred. We have previously expressed to NGET, in response to their RIIO-ET2 business plan submission via Draft Determinations[44], that we do not recognise their metrics as being proportionate or relatable to the investment proposals. In light of providing all inspection funding requests without any modelled reductions for RIIO-ET2[45], we expect NGET's asset risk and condition reporting to improve significantly ahead of other submissions made in future.

3.28. We have supplemented our review of the available asset data provided to us by NGET with our physical observation of the Harker substation site, where we noted that the assets and civil structures appear to be in poor condition and have included this as a major part of

[44] RIIO-2 Draft Determinations, NGET Annex, page 57
[45] RIIO-2 Final Determinations, NGET Annex, page 50

our considerations. Given the strategic importance of Harker on the B6 boundary and the impact of the asset capability on the load drivers and contracted customers, we believe that intervention is required to address the identified drivers and prevent any wider consequences.

3.29. Furthermore, we agree that without intervention the current assets on the Harker site cannot support forecast load growth, and therefore reinforcement is required.

3.30. Lastly, considering the ambition to reach Net Zero by 2050, we conclude that there is a clear benefit in the driver to remove SF_6 and as such our minded-to position is based the expectation that the entire substation will eventually be SF_6 free.

3.31. With regards to the NOA driver, we are of the view that there will be consumer detriment should the NOA drivers, HAEU and HAE2, not be delivered to address the capacity on the B6 boundary. This detriment will be via the incurrence of constraint costs, which NGESO and NGET have estimated to be up to £[redacted] per year for the first year of delay. Following the NGET submission, NGET has engaged with Ofgem to express the need to expedite the relevant works to address the NOA driver. After consideration of the matter, we have concluded that it would be appropriate to submit the case for these works under Incremental Wider Works[46] (IWW) volume driver, consequently withdrawing this driver from the Harker LOTI process.

Our view on NGET's preferred option

3.32. Our initial view on NGET's preferred option for Harker was that it exceeded what was necessary to address the project drivers. This is because we were not initially presented with sufficient and robust information to justify that the civil structures and assets, particularly on the 132kV substation, were in such a poor condition to justify the proposed scoped of a rebuild. Although the civil structures and assets are clearly in need of timely intervention based on the visual observations made during a site visit by Ofgem, the LOTI process requires provision of the relevant narrative and data for which our assessment can determine the extent of the necessary intervention. Following delay to our assessment process caused by the lack of robust information provided by NGET, our minded-to position is largely based on our understanding of the condition of the assets from our site visit.

[46] Special Condition 3.30 of the Electricity Transmission Licence

3.33. The view of our engineers is that a reduced scope could have been considered to address the load drivers (customer connections) at Harker if the assets and civil works did not also need to be addressed. We therefore consider that asset health condition represents a key driver within the need case for the proposed works at Harker.

3.34. We agree with NGET's approach to first assess the drivers in isolation which led to the assessment that all the project needs could not be addressed individually, strengthening the case for a holistic approach.

3.35. Throughout the review process we have sought assurances from NGET on the use of SF_6 free switchgear and assets. NGET have verbally stated their intention to proceed on this basis, depending on market availability, and have highlighted that it will become clearer towards the end of 2023 whether an SF_6 free solution can be implemented. If Harker progresses to the Project Assessment Direction stage, we may consider specifying a LOTI Output which will seek to ensure that NGET eventually delivers appropriate SF_6 abatement at Harker[47]. In that case, we would monitor the delivery of the LOTI Output. This will include annual monitoring under Standard Condition B15 (Regulatory Instructions and Guidance) during project construction and, ultimately, evidence that NGET has delivered the LOTI Output. If these outputs are not met or delayed, then this could give rise to appropriate action.

3.36. We agree with NGET that the 275kV substation should be rationalised. Electrically there is limited need for these assets due to the investment via NOA to replace/bank the interbus transformers. We note that in RIIO-ET1 NGET refurbished a number of disconnectors and circuit breakers. We also note that NGET confirmed that it will refurbish other circuit breakers on site to minimise SF_6 loss. All of this investment will be written off due to the site being rationalised.

3.37. NGET have highlighted in their submission a preference for GIS technology over AIS, citing the implications on planning application and costs of having a smaller geographical footprint as major factors. Whilst we consider it important that the LPA considers the full range of benefits of an AIS solution compared to a GIS solution, we note NGET's explanation that the selection of AIS technology may have implications on the project programme due to

[47] In accordance with Special Conditions 3.13.2 and 3.13.9 and also paragraphs 1.17-1.20 of the LOTI Guidance.

the anticipation of a lengthier planning application process. Therefore, our minded-to position is to approve the GIS technology.

Our views on the Cost Benefit Analysis for Harker

3.38. Due to the Harker project being a significantly non-load driven project, the CBA for Harker does not include the same analysis as that of a conventional LOTI CBA. Notably, there is no inclusion of Least-Worst Regret (LWR) analysis and sensitivities as it is not an appropriate analysis for a project of this nature because the project is significantly non-load driven.

3.39. We acknowledge that the reinforcement of Harker requires direct expenditure to address assets and does not generate income, so NPVs for all options are expected to be negative. The counterfactual of doing nothing (baseline) shows the significant detriment that would be observed, as indicated by the highly negative NPV value. This CBA therefore supports the need for intervention on Harker.

3.40. We accept that the CBA presents NGET's preferred option, Option 3, as the most economical solution to address the load and non-load drivers at Harker, however, as it is significantly cost driven it has played a limited role in reaching our minded-to position on the solution for the addressing the drivers on the site. Our concern on the need for intervention on the assets, along with the driver for timely connections of customers (including ENWL), has meant that we have placed more significant consideration on an efficient and timely delivery of intervention.

3.41. Additionally, our view that there is a lack of clarity on how the cost values have been determined, and how assumptions have been applied to each of the options to arrive at respective expenditures and NPVs. NGET have informed that cost estimates are based on early engineering feasibility studies and are derived from NGET's cost book, however, further narrative on costs will be required at the Project Assessment stage of our assessment under LOTI. Our understanding is that once Harker transitions to the detailed engineering phase, cost granularity will be provided as part of the Project Assessment submission.

Our minded-to position

3.42. Overall, our assessment has reached the conclusion that given the significant civil and asset health issues coinciding with the load drivers, NGET's preferred option to rebuild the substation is the most appropriate solution for the Harker project. We agree that due to the

complex and highly interactive nature of the drivers, the proposals to overcome them had become increasingly interlinked, hence a holistic approach is necessary.

4. Delivery model

Section summary

This chapter summarises our assessment of whether the Harker project meets the criteria for competition and explains our considerations and position on whether to apply a late competition model.

Questions

Question 4: Do you agree with our proposal that late model competition should not be applied to the Harker project?

Background

4.1. Competition in the design and delivery of energy networks is a central aspect of our RIIO-2 price controls. Competition has a key role to play in driving innovative solutions and efficient delivery that can help us meet net zero targets at the lowest cost to consumers. We set out in our Final Determinations[48] for RIIO-2 that during the RIIO-2 period all projects that meet the criteria for competition and are brought forward under an uncertainty mechanism will be considered for potential delivery through a late competition model.

Whether Harker meets the criteria for competition

4.2. The criteria for late model competition are as follows:

4.2.1. new

4.2.2. separable

[48] RIIO-2 Final Determinations, Core Document (REVISED), chapter 9

4.2.3. high value: projects of £100m or greater expected capital expenditure.[49]

4.3. NGET's view is that Harker in its entirety does not meet the criterion for 'new'. Although the project proposal will involve the construction of new assets, a number of existing assets will be reused, and hence the proposals cannot be deemed to be completely new.

Overview of delivery models

4.4. The late competition models that are available for consideration for the Harker project are:

4.4.1. Competitively Appointed Transmission Owner (CATO) Model

4.4.2. Special Purpose Vehicle (SPV) Model

4.4.3. Competition Proxy Model (CPM)

4.5. Below we provide a brief overview of each of these models.

CATO model

4.6. Under the CATO model a competitive tender would be run for the financing, construction, and operation of the Harker project with a transmission licence provided to the winning bidder setting out the outputs, obligations and incentives associated with delivering the Harker project. The CATO model requires legislative changes to allow for new parties to be able to be awarded a transmission licence following a competitive tender.

SPV model

4.7. Under the SPV model, the incumbent network licensee would run a tender to appoint an SPV to finance, deliver, and operate a new, separable, and high value project on the licensee's behalf through a contract for a specified revenue period. The allowed revenue for delivering the Harker project would be set over the period of its construction and a long-term

[49] Guidance on the Criteria for Competition | Ofgem

operational period (currently expected to be 25 years). The SPV model was originally developed for consideration for projects where the CATO model had been discounted due to a clear expectation that underpinning legislation would not be in place in time to allow the delivery of specific projects.

CPM

4.8. The CPM involves setting a largely project specific set of regulatory arrangements to cover the construction period and a 25-year operational period for an asset (in contrast with setting arrangements for a portfolio of assets under a price control settlement). It is intended to replicate the efficient project finance structure that tends to be used in competitive tender bids for the delivery and operation of infrastructure projects.

Our consideration of the application of competition

4.9. We recognise that the project as a whole probably does not meet the criteria for late model competition. This is due to some aspects of the project being unlikely to meet the "separable" criterion. It is possible that elements of the project that do meet the 'new' and 'separable' criteria could be repackaged into a standalone project that also meets the 'high value' criterion and so could have competition applied to it. We have not pursued this approach for the Harker project at this time as our minded-to position is that that applying competition to the Harker project is not in the interest of consumers.

4.10. With regards to the application of a CATO model, it is currently difficult to determine when the required legislation will be in place. At this stage, it is unlikely that the model would support timely delivery of the Harker project by a CATO. The current programme for Harker (see Appendix 4) indicates that the invitation to Tender (ITT) stage for the substation rebuild will commence by the end of 2022. We consider that the ITT stage is the critical point by which a delivery model decision should be made to ensure that the project can progress with clarity on the delivery model for the TO and prospective bidders before spending is allocated to the preparation their bids. We view that a decision to apply CATO at this point is likely to lead to a material delay to the intervention we deem necessary on the site, which would not be in the interest of consumers.

4.11. On the basis that the ITT process will start by the end of 2022, we recognise that a decision to apply CATO at this point to the Harker project is likely to lead to a material delay to the upgrading of infrastructure. We have concluded that this would not be in the interest of

consumers and therefore that the CATO model should be ruled out for this project unless the ITT stage is materially delayed.

4.12. On the SPV late competition model, we also do not consider that it can be applied to this project without being likely to lead to delays. Given the additional work needed to finalise the SPV model at this stage, we do not consider it appropriate to implement.

4.13. In the RIIO-2 Final Determinations[50] we explained that due to recent market conditions and our allowed financing arrangements for RIIO-2, we may not be able to have sufficient confidence that the application of the CPM to projects that need to start construction at the start of RIIO-2 would deliver benefits to consumers. This position was informed by the positions determined in the May 2020 Hinkley-Seabank project.[51]

4.14. Since our decision on Hinkley-Seabank and RIIO-2 Final Determinations in 2020, we have seen some variability in the cost of debt benchmarks used to set the financing arrangements under CPM. However, we have not seen movements that would indicate we are able to be confident that CPM is likely to deliver a benefit to consumers relative to the counterfactual LOTI arrangements under RIIO-1. In our recent FNC consultation for the EHVDC project[52], we explained that this was backed up by the indicative comparative analysis of the consumer impact of applying CPM to the EHVDC projects rather than the RIIO counterfactual arrangements.

4.15. At this stage of the Harker project there remains uncertainty around the final costs associated with the options. There is also scope for potential market movements between now and the point at which the financing arrangements would be finalised for CPM, in parallel to the final setting of the cost allowances for the project. Those uncertainties notwithstanding, however, we consider that we do not have sufficient confidence that application of the CPM to the Harker project would deliver benefits to consumers.

[50] RIIO-2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator | Ofgem Core Document (REVISED), section 9.8, page 119
[51] Hinkley - Seabank: Updated decision on delivery model | Ofgem Chapter 3
[52] Eastern HVDC - Consultation on the project's Final Needs Case and Delivery Model | Ofgem sections 4.19- 4.21, pages 40-41

4.16. Overall, with the considerations made above, we view that it is impractical to apply a late competition to the Harker project and we propose that it is retained within the LOTI mechanism as part of the RIIO-2 framework.

5. Large Project Delivery

Section summary

This section sets out a summary of our approach to Large Project Delivery.

Questions

Question 5: Do you agree with our proposed approach to LPD for the Harker project?

Background

5.1. In our RIIO-2 Final Determinations[53] we set out our approach to late delivery of large projects (>£100m) and these are further explained in paragraphs 7.13 – 7.26 of the LOTI Guidance. We aim to ensure a network company does not benefit financially from a delay to delivery of those projects by using one of the following options:

i. If a project is delivered late, we may re-profile the allowances to reflect actual expenditure to avoid the network company benefitting from the time value of money; or

ii. Milestone-based approach – we may set project allowances based on the delivery of specific, pre-agreed, milestones. The allowances would only be granted following confirmation that a milestone had been delivered.

5.2. We aim to ensure consumers are protected from any delay in delivery. To this end, we will consider setting a Project Delay Charge (PDC) for each day a project is delivered late.

5.3. We will consider a range of factors when considering a PDC, including:

5.3.1. estimates of potential consumer detriment

5.3.2. industry benchmarks for delay clauses on similar projects

[53] RIIO-2 Final Determinations, ET Annex (REVISED), page 32 onwards

5.3.3. the delay clause(s) that the network company negotiates with its contractor(s) for that project, which would be shared with Ofgem through the project assessment submission.

Our position

5.4. To address the possibility of NGET benefiting financially from any delay in delivery of Harker, our preferred option in a case of delay is to re-profile the allowances to reflect actual expenditure to avoid the network companies benefitting from the time value of money. We do not propose to apply the Milestone-Based Approach because we do not consider that there are any appropriate milestones in the delivery plan that could be used to set allowances in a way that will protect consumers.

5.5. Our view is that there is a clear need to set a PDC at the Project Assessment stage for the Harker project to protect the interests of existing and future consumers. Based on NGET's submission, delay in delivery of Harker may lead to constraint costs that could be avoided, continued leakage of SF_6 and delay in enabling embedded generation (some of it renewable) to connect, as detailed below:

- Constraint costs: At this point we do not have enough information to assess whether a delay to Harker will result in additional constraint costs. We will continue to work with NGET and the Electricity System Operator to assess this.

- SF_6 leakage: NGET stated in its submission that one of the drivers for the Harker project is the condition of its assets, which has resulted in significant SF_6 leakage. As part of its submission, NGET provided their forecast for SF_6 leakage for each year using modelling[54]. Delay in delivery will inevitably delay the reduction of SF_6 leakage. NGET provided their initial view of the expected impact on consumers using the carbon price. Their current estimate is around £0.8m/year (£800,000/year).

- Enabling embedded generation: another driver to deliver Harker is to enable demand, as well as embedded generation connection. Our view is that delay to delivery will

[54] We note that NGET flagged in its submission that "Our modelling also sets limits to the amount of degradation an asset can show. This means that the modelling may not fully reflect the real deterioration of certain zones. At Harker 400kV a small number of gas zones have recently progressed to a state of severe emissions which falls outside the capability of our modelling to accurately predict, thus understand leakage may be greater than that suggested by the model.

mean that generation will not be connected to the system and/or will not be used. A proportion of this is renewable generation. Delay in delivery may therefore limit benefit to consumers from renewable energy. This may have an environmental impact that can be assessed using carbon price, as well as a financial impact on cost of energy[55].

We will work with the NGET and the ESO to better understand if, and how, the above impacts can be monetised. Our decision on the level of PDC will form part of Project Assessment decision following consultation.

[55] Marginal cost of renewable energy may be lower than other non-renewable generation.

6. Next steps

Section summary

This chapter sets out the next steps in our assessment of the Harker project under the LOTI mechanism.

6.1. Our consultation on the positions set out within this document will close on 30 September 2022. Following the consultation, we expect to publish our final views on the INC for the Harker project in late summer 2022. If our decisions change from our minded-to positions set out in this document, in light of responses and new information received, then we may need to re-consult.

6.2. In line with Special Condition 3.13.14 and under the LOTI Guidance, we would normally only expect to receive a Final Needs Case submission once planning consent is in place. NGET have informed us that a delay in programme will result in the submission of planning consent application to the Local Planning Authority by the end of 2022, the outcome of which is expected in Q1 2023.

6.3. The LOTI Guidance provides that at the INC assessment stage, we will state whether we will need to revisit any of the considerations at later stages in the LOTI assessment process, taking into account the strength, quality, and robustness of the evidence presented in the TO submission. Our assessment remains subject to the responses to this consultation, but at this stage, given the importance of this project progressing as soon as possible, we propose that no further assessment will be required except confirmation that the appropriate planning consents are in place for the project. We may consider revisiting areas should new relevant information become known to us in line with paragraph 5.4 of the LOTI Guidance.

Appendices

Index

Consultation

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Appendix 1: Optioneering - Summary of work scope for each option of intervention considered

Site	Scope	Programme	Drivers
132kV substation	Civil infrastructure re-build due to condition. Switchgear and connections replaced due to asset condition and ratings Extension required for new SPT circuit, additional SGTs (and to allow un-banking of ENWL circuits?)	It is assumed that to construct a new GIS hall and install equipment within the existing compound would take two years. This would be followed by at least three years of outages to transfer existing circuits to the new substation. Extension for additional circuits or SGT connection would be completed within that programme.	Satisfies the 132kV substation asset health driver Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
275/132kV transformers	Uprate the existing 275/132kV 120MVA transformers to 240MVA. SGT 3B is retained rated at 222MVA.	25-week outages per SGT. It is likely that the replacement of SGT 1, 2, 3A and 4 could take place in parallel to outages planned for the uprating of the 275kV substation.	Satisfies the 132kV ENWL load related driver
275kV substation	Civil infrastructure - repair, refurbish or re-build. Replace switchgear to remedy continuous and fault level rating deficiency.	Approximately eight to nine months to replace each mesh corner delivered sequentially. As this is outage related works each replacement would require an outage season to achieve on a heavily constrained site. The programme to achieve this scope could take nine years.	
400/275kV transformers	Operate existing transformers in parallel or replace with higher rated units for NOA options HAEU and HAE2.	25-week outage for insitu replacement of SGT 5 or 6 to deliver HAEU 25-week outage for insitu replacement of SGT 5 or 6 to deliver HAE2 It may be possible to carry out these installations during the uprating of MC 6 and 13. It must also be considered that to avoid very high system constraint costs	Satisfies the NOA drivers

		that these two drivers are prioritised to the earliest stage of the projects.	
400kV substation	To facilitate extension of the existing 400kV GIS: • relocate SGTs 9B and 10B • relocate 275 kV MSC 2 • re-route other primary system connections and substation access routes • Extend switch hall		
400kV GIS	To achieve the connection of known and future drivers would require: • Add transition sections • Add one 400/132kV SGT bay. Actions to reduce SF_6 leakage until end of life. Substation is replaced at EOL	There is a need to replace the 400kV substation after 40 years in 2034	Satisfies the need to reduce SF_6 leaks asset health driver Anticipates future growth of the 400kV substation. Further extension would be required to accommodate anticipated 400kV growth in connections. • Add space for one future 400kV connection bay for 400MW solar and battery developer currently under off. • Add space for two future 400kV feeder bays associated with new links to the Scottish system (NOA CMNC or Teviot windfarm connections) • It is conceivable after the connection of two new 400kV circuits that two further circuits will be required South of Harker. Future proofing of this option must be achieved. • Space for as yet unconfirmed drivers for additional reactive compensation. If MSC2 were to be disconnected or relocated as part of these works, the equivalent compensation may be replicated at the 400kV substation. • Any additional bus sections or bus couplers required to maintain SQSS compliance.
400/132kV transformers	Add one 400/132kV 240MVA transformer to satisfy additional infeed from Scotland.	Works would be carried out in parallel with an extension of the 400kV GIS	Satisfies the 132kV SPT load related driver

132kV OHL	3x circuits are uprated from the Scotland-England boundary	Outages season 2024 and 2025 to match SPT reinforcements	Satisfies the 132kV SPT load related driver

Table A1: Summary of works for Option 1

Site	Scope	Programme	Drivers
132kV substation	Civil infrastructure re-build due to condition. Switchgear and connections replaced due to asset condition and ratings Extension required for new SPT circuit, additional SGTs and potentially to allow un-banking of ENWL circuits	It is assumed that to construct a new GIS hall and install equipment within the existing compound would take two years. This would be followed by at least three years of outages to transfer existing circuits to the new substation. Extension for additional circuits or SGT connection would be completed within that programme.	Satisfies the 132kV substation asset health driver Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
400/132kV transformers	Addition of six 400/132kV 240MVA transformers to replace existing SGT 1, 2, 3A, 3B and 4. The six SGT's provides capacity for all known load drivers. SGT's are constructed within the existing 275 kV compound		Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
275kV substation	Civil infrastructure is demolished as part of this option leaving only the feeds to Stella West and Fourstones	1 year to demolish the North mesh to create space in the compound. The South mesh will be demolished at the end of the project.	
400/275kV transformers	Operate existing transformers in parallel or replace with higher rated units for NOA options HAEU and HAE2.	Requires 2 outage seasons	Satisfies the NOA drivers
400kV substation	400kV substation rebuild as a GIS within the 275kV compound	5 years of construction and commissioning	Satisfies the need to reduce SF_6 leaks asset health driver Anticipates future growth of the 400kV substation.
132kV OHL	3x circuits are uprated from the Scotland-England boundary	Outages season 2024 and 2025 to match SPT reinforcements	Satisfies the 132kV SPT load related driver

Table A2: Summary of works for Option 2

Site	Scope	Programme	Drivers
132kV substation	New 132kV GIS substation built on a greenfield plot of land to the North of the existing site. The new substation will incorporate any extension required for new SPT circuit, additional SGTs and potential to allow un-banking of ENWL circuits	It is assumed that to construct a new GIS hall and install equipment would take two years. This would be followed by at least three years of outages to transfer existing circuits to the new substation.	Satisfies the 132kV substation asset health driver Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
400/132kV transformers	Addition of six 400/132kV 240MVA transformers to replace existing SGT 1, 2, 3A, 3B and 4. The six SGT's provides capacity for all known load drivers.	Delivered within the substation programme.	Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
275kV substation	Civil infrastructure is demolished as part of this option leaving only the feeds to Stella West and Fourstones		
400/275kV transformers	Operate existing transformers in parallel or replace with higher rated units for NOA options HAEU and HAE2.	Requires 2 outage seasons in 2023 and 2024	Satisfies the NOA drivers
400kV substation	400kV substation rebuild as a GIS adjacent to the new 132kV substation	Works carried out in parallel to the 132kV substation build	Satisfies the need to reduce SF_6 leaks AH driver Anticipates future growth of the 400kV substation.
132kV OHL	3x circuits are uprated from the Scotland-England boundary	Outages season 2024 and 2025 to match SPT reinforcements	Satisfies the 132kV SPT load related driver

Table A3: Summary of works for Option 3 (NGET's preferred option)

Site	Scope	Programme	Drivers
132kV substation	New 132kV substation built on a greenfield plot of land to the North of the existing site. The new substation will incorporate any extension required for new SPT circuit, additional SGTs and potential to allow un-banking of ENWL circuits	It is assumed that to construct a new AIS and install equipment would take two years. This would be followed by at least three years of outages to transfer existing circuits to the new substation. However, the consenting and lands rights processes are expected to take longer than the GIS build and therefore delaying site start date.	Satisfies the 132kV substation asset health driver Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
400/132V transformers	Addition of six 400/132kV 240MVA transformers to replace existing SGT 1, 2, 3A, 3B and 4. The six SGT's provides capacity for all known load drivers	Delivered with the substation solution	Satisfies the 132kV SPT load related driver Satisfies the 132kV ENWL load related driver
275kV substation	Civil infrastructure is demolished as part of this option leaving only the feeds to Stella West and Fourstones		
400/275kV transformers	Operate existing transformers in parallel or replace with higher rated units for NOA options HAEU and HAE2.	Requires 2 outage seasons in 2023 and 2024	Satisfies the NOA drivers
400kV substation	400kV substation rebuild as a AIS adjacent to the new 132kV substation	Works carried out in parallel to the 132kV substation build	Satisfies the need to reduce SF_6 leaks asset health driver Anticipates future growth of the 400kV substation.
132kV OHL	3x circuits are uprated from the Scotland-England boundary	Outages season 2024 and 2025 to match SPT reinforcements	Satisfies the 132kV SPT load related driver

Table A4: Summary of works for Option 4

Appendix 2: Optioneering – Considerations applied to each option of intervention

Option	Scope Of option	Key Considerations	NGET View	NGET Decision
Base	Do minimum	This option will not meet the requirements of the load related drivers for Harker.	This option is rejected on the basis it does not meet the drivers for change at Harker	Option rejected
1	Uprate 275kV	The build sequence will have inherent risks and also hazards from the system throughout the build programme. This option makes good use of the existing compound space, National Grid land ownership and may be consented under permitted development rights. Programme: The project will fail in its driver to meet key customer connection dates as the 132kV and 275kV substations will be replaced in a consecutive sequence and an extended programme. The build sequence will be in excess of 13 years. There will be stop-start working as the uprating will be tied to the constraints of the outage season. Future extendibility is problematic. Any additional extensions to the 132kV or 400kV substations will require extension in a complex constrained site. This will drive additional cost to potential customers and projects There are no guaranteed outcomes on SF_6 leak stopping measures that might drive a continuing programme of unknown intervention up to end of 400kV substation life. During the lifetime of the project the original parts of the 400kV substation will reach end of life and require an intervention. Forecast expenditure of £252.58m is a high cost option to achieve similar outputs as more efficient other options	This option is rejected on the basis it does not meet the programme driver for change at Harker in the timescales required. The option perpetuates a legacy and inefficient design which is no longer required This is a high cost option that does not deliver all the outputs required.	Option rejected
2	Insitu replacement	The build sequence will have inherent risks and also hazards from the system throughout the build programme. The build sequence will contain many complex stages. This option makes good use of the existing compound space, National Grid land ownership and may be consented under permitted development rights. Programme: The project will fail in its driver to meet key customer connection dates as the 132kV and 400kV substations will be replaced in a consecutive sequence, elements of the 275kV substation must be demolished to create space for further construction and will result in an extended programme. The build sequence will be in excess of 10 years. Future extendibility: Any additional extensions to the 132kV or 400kV substations will require extension in a complex constrained site. Some of this extendibility can be mitigated by creating GIS halls to allow for future bays but cable routes through the site may be a problem. This will drive additional cost to potential customers and projects Rebuilding the substation with SF_6 free technology in the 132kV substation and potentially at the 400kV substation will fulfil the driver to abate SF_6 leaks. New equipment will also have lower leakage levels. Decommissioning MSC 2, SVC 7 and SVC8 to create space in the HV compound for construction will create an unacceptable boundary constraint across B6. Demolishing one 275kV mesh and diverting all connections to the remaining mesh will create an unacceptable operating situation and overloading of the remaining mesh. £284.67m is a very high cost option to achieve similar outputs as more efficient other options.	The inherent complex risks of this option may not be capable of being mitigated. Hazards in the design are more easily mitigated by other options The complex build creates an extended programme that will not meet the drivers. This is a high cost option that does not deliver all the outputs required.	Option rejected
3	GIS green-field	The substation can be largely built offline and avoid the hazards and challenges of constructing in an HV compound. This option requires less NGET resource required to manage these issues. NOA drivers HAEU and HAE2 can be prioritised for early delivery in the project. This option requires land purchase and planning consent. Programme: The construction is likely to take two year to construct followed by three years of commissioning outages to divert connections into the new substation. The build sequence will be 5 years. The completion date is estimated to be 2026. This programme is the best route to meeting key customer driven key dates. Future extendibility: extendibility can be designed into the solution will more space available and/or delivered as part of this project. Rebuilding the substation with SF_6 free technology in the 132kV substation and potentially at the 400kV substation will fulfil the driver to abate SF_6 leaks. New equipment will also have lower leakage levels. New reactive compensation can be commissioned before decommissioning of MSC 2, SVC 7 and SVC8 to avoid an unacceptable boundary constraint across B6. £246.83m is the lowest cost option to achieve all of the required outputs.	A greenfield rebuild requires additional land purchase and consenting. However, the benefits of the project are delivered to the key milestone dates. This is the option most likely to succeed within budget and on time	**Option selected**
4	AIS green-field	The substation can be largely built offline and avoid the hazards and challenges of constructing in an HV compound. This option requires less NGET resource required to manage these issues. NOA drivers HAEU and HAE2 can be prioritised for early delivery in the project. This option requires land purchase and planning consent. The amount of land required for the development is significantly increased over option 3 the consequent risks are expected to be higher than a smaller footprint GIS build. Multiple land owners and unregistered land increases the threat of reliance on compulsory purchase of land rights leading to the additional programme length of 18 to 24 months. Increasing risk over option 3 of the Local Planning Authority classifying the Project as Environmental Impact Assessment (EIA) development and the likely increase in associated scope (e.g. archaeological works) and extended determination period (16 weeks). Environmental concerns exist relating to the visual impact of the development and the potential for it to be sited within the highest categorization of flood zone (Flood zone 3). Due to the large size of the AIS Substation, the risk of planning objections is greatly increased (from both statutory and public). Constructing in a flood risk area conflicts with national and local planning policy as well as National Grids own policies. Increased loss of greenfield site over option 3, which will include some important habitats. Note: the loss of important habitat will impact on meeting National Grid >10% BNG policy for this project.	A greenfield rebuild requires additional land purchase and consenting. However, the footprint of an AIS will be significantly increased over that over GIS. It is NGET's view that this significantly increases the risks associated with land purchase and consenting for little benefit.	Option rejected

Table A5: Overview of option considerations

Appendix 3 – Cost Benefit Analysis (CBA)

The CBA for Harker applies a generated spending profile of approximately 54 years to each option, from which total expenditure and NPV over the period are determined. The total expenditure for each option simply reflects the total cost of the associated scope of works necessary to fulfil the relevant option, with the cost of end-of-life interventions also factored in. As an example, Table A6 presents the scope of works constituting the total expenditure for Option 3.

New GIS substation build
Retrofit 2 CB per year before 2050 Redaction
Cost of OHL uprating
Additional reactive compensation requirements
Cost to replace banked 500MVA transformers by 2051 with a single larger unit.
ENWL EAWO
Opex SF_6 top up Redaction

Table A6: CBA Investment considerations for Option 3

The NPV for each option is derived in the following way:

- Investment each year + Constraint costs[56] = Total Net Benefit before capitalisation
- Total Net Benefit before capitalisation – Capitalised investment[57] = Investment to be expensed
- Investment to be expensed + Depreciation + Cost of capital = Net TO benefits

[56] Depending on the option, the constraint applied could reflect that derived from outages of reactive equipment at Harker 275kV, the effect of HAEU and HAE2 delay on individual options or constraints from the removal of compensators.
[57] Capitalisation is an accounting method in which a cost is included in the value of an asset and expensed over the useful life of that asset, rather than being expensed in the period the cost was originally incurred.

- Net TO benefits + Societal benefits[58] = Net benefits
- Net Benefits x Discount factor = Discounted Net Benefits
- Cumulative Discounted Net Benefits across the spending profile = NPV

The NPV for all options are negative, given that investments and constraint costs are costs, so the favourable option from an NPV perspective is one which is least negative NPV solution, Option 3.

[58] This generally includes benefits in the form of the abatement of SF_6 leaks.

Appendix 4 – Harker project programme

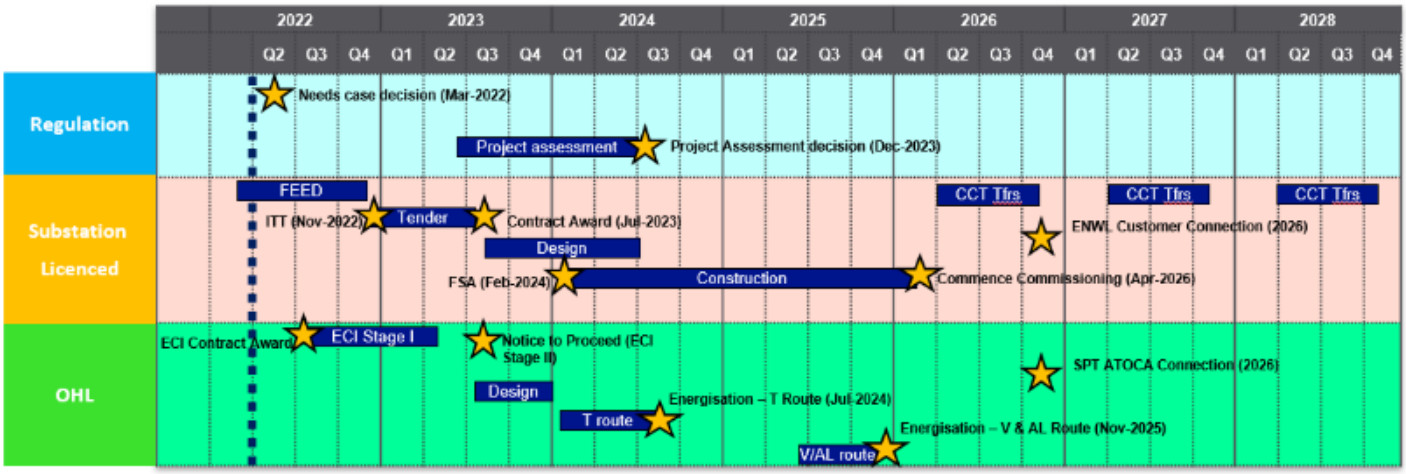

Figure A1: Harker updated programme

Milestone	Substation	OHL (ECI)
Tender Launch	November 2022	September 2021
Tender Submission	March 2023	October 2021
Evaluation	May 2023	December 2021
Preferred Bidder Negotiations	June 2023	April 2022
Contract Award	July 2023	July 2022 (ECI Stage I) July 2023 (Notice to Proceed to Stage II)

Table A8: Summary of tendering timescales

The current programme schedules submission of the TCPA in Q4 2022 with an expectation for decision in Q1 2023. Depending on the final design, the associated overhead line works are anticipated to fall either under s37 of the Electricity Act 1989 (and deemed planning consent under the TCPA) or be exempt from s37 by virtue of The Overhead Lines (Exemption) (England and Wales) Regulations 2009. Should a s37 submission be required this will take place within the same timeframes as the TCPA and a decision would be expected in Q3 2023.

Figure A2: Harker update on planning consent

Appendix 5 – Privacy notice on consultations

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

The collection, use and storage of your personal data as it relates to a response to this consultation is necessary for the effective performance of receiving and considering your consultation response and is carried out in the public interest.

3. With whom we will be sharing your personal data

N/A

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

N/A

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

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".