Appendix A

General roles and responsibilities of ESO and TOs

Appendix A1: General roles and responsibilities of ESO and TOs

A1.1 Electricity System Operator

The ESO's roles and responsibilities are based around its overview of the network requirements. Specific role areas are as follows:

1. analysing UK FES data
2. identifying boundary transfer requirements and publishing SRFs
3. conducting verification studies of some boundary analysis performed by the TOs to corroborate the TOs' analysis
4. devising and developing options including but not limited to operational options, commercial agreements and Offshore Wider Works (OWW) as well as early development of options (see Chapter 7)
5. reviewing any options recommended in a previous NOA as "Proceed - Critical" but which have not been progressed by the transmission licensee to which the recommendation was given
6. reviewing reinforcement options and their cost estimates that the TOs propose
7. assessing outages and other factors affecting the availability of system access. These may affect the options' Earliest in Service Dates (EISD)
8. running cost-benefit analysis studies
9. recommending options for further development
10. advising on the performance of boundary reinforcement proposals in the cost-benefit analysis to facilitate further option development by the TOs
11. providing an explanation of the NOA Committee recommendations
12. recording details if a TO does not follow a NOA recommendation
13. assessing eligibility for competition
14. producing and publishing the NOA report.

A1.2 Transmission Owners

The TOs' roles and responsibilities include:

1. producing technical analysis of boundary capabilities of the base network and uplifts from reinforcement options
2. proposing and developing reinforcement and reduced-build options
3. providing their technical information to the ESO
4. providing cost information for options
5. producing outage and system access requirements for options
6. providing environmental information for options
7. providing consents and deliverability information for options
8. providing EISD of options
9. conducting verification studies of some boundary analysis performed by the ESO to corroborate the ESO's analysis of alternative options

10. undertaking stakeholder engagement (following review of draft outputs of the NOA outcome)
11. conducting community engagements
12. reviewing draft NOA reports and appendices related to TO options.

Appendix A2: Report drafting

A2.1 Report drafting

1. The ESO drafts the NOA report but the responsibility for the content varies between the ESO and TOs. The form of the report is subject to consultation, and to Ofgem's approval. Appendix D gives more detail on the form of the NOA report.
2. The component parts of the chapters covering options and their analysis and the responsibilities for producing the material are in Table 2.8.

Table 2. 8 Areas of Responsibility

NOA report Options topic	Build options	Alternative options	Offshore	Comments
Options: Status of the option (scoping, optioneering, design, planning, construction)	TO	ESO/TO	ESO	
Options: Technical aspects – assets and equipment	TO	ESO/TO	ESO	
Options: Technical aspects – boundary capabilities	TO	ESO/TO	ESO/TO	
Options: Economic appraisal	ESO	ESO	ESO	Leads to investment recommendations for TOs
Options: Comparison of the options	ESO	ESO	ESO	
Options: Competition assessment	ESO	ESO	ESO	

Appendix A3: Roles and responsibilities for high voltage, stability and constraint management

A3.1 Electricity System Operator

The Electricity System Operator (ESO) leads the high voltage, stability and constraint management processes. The ESO shall be responsible for:

1. Planning, developing and operating the NETS in accordance with the SQSS
2. Selecting and prioritising regions by screening
3. Preparing network models for analysis
4. Collaborating with TOs and DNOs to identify requirements
5. Communicating requirements to providers
6. Collecting options from providers
7. Assessing options

8. Collaborating with DSO[23] to carry out the technical assessment of distribution-connected options
9. Recommending most economic options based on cost-benefit analysis (CBA)
10. Communicating process conclusions to providers
11. Procuring Commercial Power Services via Balancing Service Contract
12. Procuring Constraint Commercial Services via the Constraint Management process
13. Publishing the high voltage and stability management process Reports.

A3.2 Transmission Owners

Transmission Owners (TO) shall be responsible for:

1. Planning and developing their networks in accordance with the SQSS
2. Providing feedback on regions which they think should be prioritised in this process
3. Preparing network models for analysis
4. Collaborating with ESO to explore options from existing assets of their networks for analysis
5. Collaborating with ESO to identify requirements
6. Supporting the assessment of options which could have an impact on their network
7. Proposing options using the System Requirement Form – Voltage/Stability.
8. Collaborating with ESO to deliver the feasibility studies and infrastructure work required to facilitate tender options.

A3.3 Distribution Network Operators

1. Distribution Network Operator (DNO) shall be responsible for:
    a. Compliance of their networks
    b. Preparing network models for analysis
    c. Collaborating with ESO to explore options from existing assets of their networks for analysis.
2. DNOs shall also be responsible for the following, while the relevant DSO does not yet exist:
    a. Collaborating with ESO and the relevant TO to identify requirements
    b. Supporting the calculation of effectiveness factors for their networks
    c. Collaborating with ESO to carry out the technical assessment of distribution-connected options which connect to their networks.
3. DNOs will be invited to respond to any Request for Information and/or participate in any Tender Process. They can propose options which meet requirements set out by ESO via the Tender Process[24].

A3.4 Reactive Power and Stability Commercial Service Providers

1. Reactive Power and Stability Commercial Service Providers will be invited to respond to any Request for Information and/or participate in any Tender Process. They can propose options which meet requirements set out by ESO via the Tender Process.

A3.5 Constraint Commercial Service Providers

1. Constraint Commercial Service Providers will be invited to respond to any consultation and Expression of Interest and/or participate in any Tender Process of the Constraint Management Pathfinder projects. They can propose options which meet requirements set out by the ESO during the Consultation phase.

Appendix B

Potential Transmission Solutions

Appendix B: Potential Transmission Solutions

Table B1: Potential transmission solutions

Category		TCSNP option	Nature of constraint			
			Thermal	Voltage	Stability	Fault Levels
Alternative Options	Operational Options	Availability contract *(contract to make generation available, capped, more flexible and so on to suit constraint management)*	✓	✓	✓	
		Reactive demand reduction *(this could ease voltage constraints)*		✓		
		Enhanced generator reactive range through reactive markets *(generators contracted to provide reactive capability beyond the range obliged under the codes)*		✓	✓	
		Automatic MW redistribution *(Contracted for certain boundary transfers and faults). For example, contracted services from Demand side, generation deload/ intertrip, energy storage charge/ import and discharge/ export*	✓	✓	✓	
		Generation advanced control systems *(such as faster exciters which improves transient stability)*		✓	✓	
	Reduced-build Options	Co-ordinated Quadrature Booster (QB) Schemes *(automatic schemes to optimise existing QBs)*	✓	✓		
		Automatic switching schemes for alternative running arrangements *(automatic schemes that open or close selected circuit breakers to reconfigure substations on a planned basis for recognised faults)*	✓	✓	✓	✓
		Dynamic ratings *(circuits monitored automatically for their thermal and hence rating capability)*	✓			
		Addition to existing assets of fast switching equipment for reactive compensation *(a scheme that switches in/out compensation in response to voltage levels which are likely to change post-fault)*		✓	✓	
		Protection changes *(faster protection can help stability limits while thermal capabilities might be raised by replacing protection apparatus such as current transformers (CTs))*	✓		✓	
		HVDC de-load Scheme *(reduces the transfer of an HVDC Intralink either automatically following trips or as per control room instruction)*	✓	✓	✓	
		'Hot-wiring' overhead lines *(re-tensioning OHLs so that they sag less, insulator adjustment and ground works to allow greater loading which in effect increases their ratings)*	✓			
Build Options		Overhead line re-conductoring or cable replacement *(replacing the conductors on existing routes with ones with a higher rating)*	✓			
		Reactive compensation in shunt or series arrangements (MSC, SVC, reactors). *Shunt compensation improves voltage performance and relieves that type of constraint. Series compensation lowers series impedance which improves stability and reduces voltage drop.*		✓	✓	
		Switchgear replacement *(to improve thermal capability or fault level rating which in turn provides more flexibility in system operation and configuration. This would be used to optimise flows and hence boundary transfer capability).*	✓			✓
		OHL reconfiguration *(turn-in works at substations)*	✓	✓	✓	
		Uprating of circuits *(for higher voltage levels)*	✓	✓	✓	
		Power flow control devices *(a type of Flexible AC Transmission System device that can be used to alter power flows over a circuit)*	✓	✓	✓	
		New build (HVAC/HVDC) – *new plant on existing or new routes.*	✓	✓	✓	✓

Appendix C

System Requirement Form

Appendix C: System Requirement Form

2.1 Overview

1. The System Requirements Form template is in an electronic form for parts B, C, E and F using a dedicated data room. The table below gives an overview of the SRF parts and a summary of the data content.

Table C1: SRF Parts and Summary of the Data Content

SRF Part	SOFI Content?	Description	Data content
Part A – Boundary requirement and Capability	Yes	ESO sends out a requirement level for each boundary which triggers the TO's response in providing options to meet the capability requirement level for that boundary. The form includes the BID3 unconstrained boundary transfers. Each boundary will have its own Part A.	The requirements listed are the transfer capabilities for each energy scenario for each of economy and security criterion in tabulated and chart form. An example is later in this appendix.
Part B – TO Proposed Options	Yes	TO responds with an option that may partially or wholly meet the requirements set out by Part A. Each option will have its own Part B	Technical description of the option including: • physical works • summary of included assets • diagram. • what requirement the option solves and how. • earliest in-service date. • any environmental impacts • other reference information including option name, status, reference number.
Part C – Outage Requirements	Yes	TO responds with outage requirements for that option. Each option will have its own row in Part C.	Outage requirements to deliver the option: • The circuit or apparatus that need to be on outage and the required duration of outage (in weeks) in each calendar year if the option is to be delivered on its EISD The number of distinct calendar years that works take place in The circuit or apparatus that need to be on outage and the required duration of outage (in weeks) in each calendar year if the option is to be delivered on its EISD The circuit or apparatus that need to be on outage and the required duration of outage (in weeks) in each

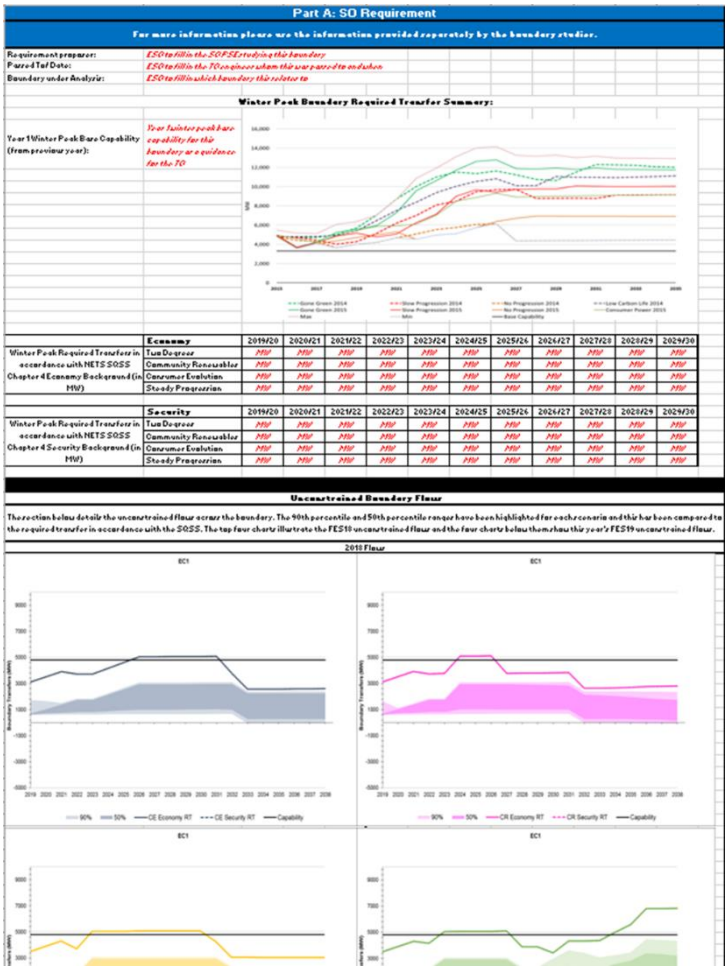
SRF Part	SOFI Content?	Description	Data content
			calendar year if the option is to be delivered on its EISD The number of distinct calendar years that works take place in • The number of distinct calendar years that works take place in • The number of distinct calendar years that works take place in • The number of distinct calendar years that works take place in • Restriction on sequence of works.
Part D – Studied Option combinations	Yes	TO and ESO supply how the options' capabilities have been studied to ensure that the ESO accurately and faithfully reproduces the options' order and capabilities in the economic analysis. Part D is a separate online form. Each boundary will have its own Part D.	Boundary benefit data is captured in the handover tool: • The options that provide boundary benefit on their own or together with other options and the combinations they can be used in. • The sequence of the reinforcements in each combination. This includes alternative sequences for the same combination. • The resulting absolute boundary capability in MW in each stage of each sequence. • Whether an option must follow or is an alternative to certain reinforcements
Part E – Options' Costs	Yes	TOs supply asset and cost information to allow the ESO to proceed with 'cost reasonableness' check (See Appendix C). Each option will have its own Part E.	The data recorded includes: • WACC used. • A limited break down of costs. • The cost profile for the option. • Delay, remobilisation and cancellation costs.
Part F – Publication Information	No	TOs supply names and descriptions of options for publication use. Each option will have its own row in Part E but only if it has featured in Part D.	The information includes: • The NOA code agreed with the ESO. • The option name to appear in the NOA report. • The description of the option to appear in the NOA report.

SOFI stands for System Operator Functions Information.

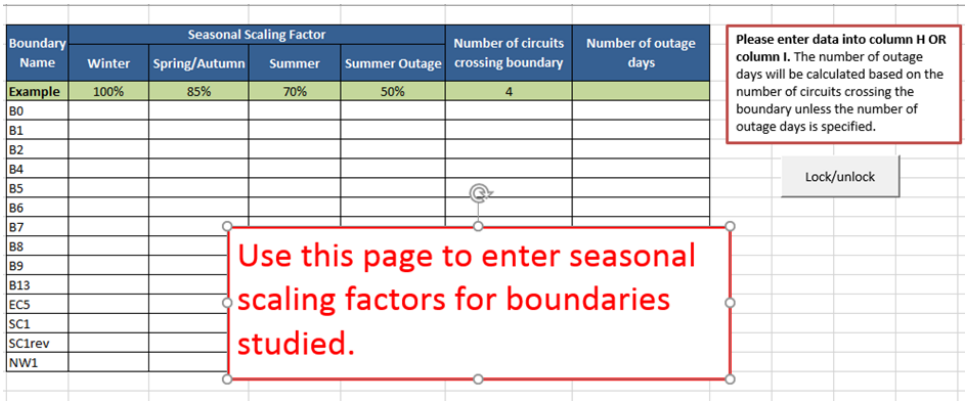
2.2 Interested Persons

1. The SRF template for Interested Persons' will be publicly available on the ESO website. The template will include sections for parts B, E and F of the SRF. Parts C and D will be determined in collaboration with the ESO and incumbent TO as required. In future cycles this may be superseded by an online portal as per the TO submission data room.

Figure C1: SRF Part A: Boundary Requirement and Capability



Seasonal scaling factors can be submitted using the following template. Otherwise, default ones mentioned in Section 2 will be used or actual seasonal boundary capabilities can also be submitted separately.



Appendix D

TCSNP Key Dates for 2023

Appendix D: TCSNP Key Dates for 2023

This table describes the key dates for the TCSNP in the relevant year.

Reference, number or part	Description	General timing	Specific timing for TCSNP 2023
N/A	Agree the *Basis for the cost estimate provided for each option*	Early July	07/07/2023
SRF Part A	Boundary requirement and capability	Mid-August (draft) Mid-September (final)	 14/09/2023
SRF Part B	TO proposed options	Mid-August (draft) Mid-September (final)	 14/09/2023
SRF Part C	Outage requirements	Mid-August (draft) Mid-September (final)	 14/09/2023
SRF Part D	Studied option combinations and their impacts on the network	Mid-September	14/09/2023
SRF Part E	Options' costs	Mid-September	14/09/2023
SRF Part F	Publication information	Late October	20/10/2023
N/A	Governance Committee meeting – system requirements and options overview	October	24/10/2023
N/A	Governance Committee meeting: results part 1	November	14/11/2023
N/A	Governance Committee meeting: results part 2	November	24/11/2023
N/A	Publication launched	December	13/12/2023

Appendix E

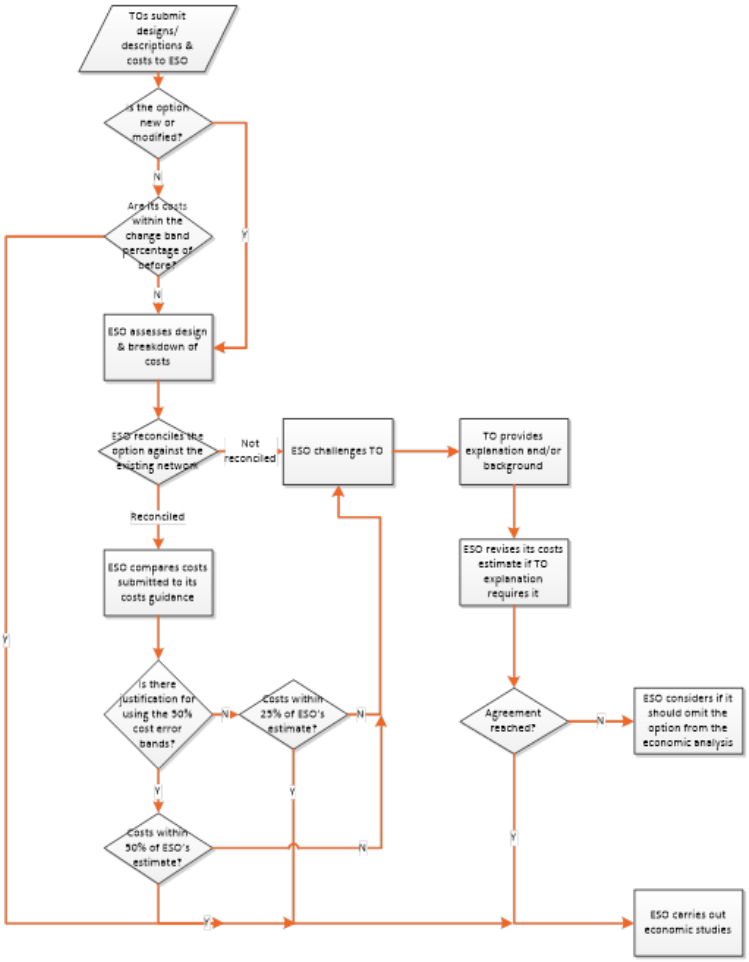
Process for Checking NOA Option Cost Reasonableness

Appendix E: Process for Checking NOA Option Cost Reasonableness

This appendix describes the process that the ESO uses to check the NOA option cost data that the TOs provide. This cost data will be used as an input to the NOA economic assessment process, the costs are also used for the suitability for third party delivery and tendering assessment process.

Figure E1 shows the process map for the cost reasonableness checking process.

Figure E1: cost reasonableness checking process map



The input to the above process is the costs that the TOs submit for their NOA options. The output of the process is the TOs' cost submissions to be deemed valid and act as an input into the NOA economic process. The TOs may modify their costs following discussions with the ESO as part of this process. If following discussions, the ESO still believes that the costs are outside of their expected range and will consequently unduly affect the economic analysis, the ESO may omit the option from the economic analysis.

The ESO maintains independent cost guidelines which are derived from RIIO unit costs and external public domain market intelligence. Depending on the type of equipment/technology, the ESO either compares the costs of each option against previous years (allowing for inflation) or against its cost guidelines.

The headings below match the stages in the process map.

TOs submit designs/descriptions & costs to ESO

Having received the SRFs that the TOs submitted, the ESO gathers the following information from Part B – work description and Part E – cost information from the SRF:

- Detailed technical breakdown of the reinforcement option
- Cost data for the option.

Is the option new or modified?

Are its costs within the change band percentage of before?

The first step is for the ESO to identify which options should proceed through the full cost reasonableness process. New or modified options always proceed through the full process. Options where the designs are unchanged from previous years' submissions, as they have already had their costs approved through previous years' cost checks, may be exempt from the rest of the checking process provided any increase in costs falls within an expected range, i.e. if the increase of the costs value is within the band of ±5% of previous submissions, then the cost checking process for such an option ends here. Options where the costs have changed outside this range, or options that have been modified or evolved with new designs, should be taken through the process as normal.

ESO assesses design & breakdown of costs

The aim of this step is for the ESO to understand the option, how it is intended to deliver the benefit and the components of the option. The ESO analyses the technical breakdown from the descriptions of the option and builds up their understanding of the reinforcement option:

The ESO checks the descriptive text with or without any diagrams that the TO has provided.

The ESO checks that equipment requirements are consistent and complete. For instance, where a new circuit is proposed, does the SRF explain how it will connect to the existing transmission system – are new bays proposed and how many, or will it reuse existing bays?

The ESO checks environmental factors. For example, whether the option needs consents and whether the option is in a mainly urban or rural setting.

It is expected that the level of details of each option and the accuracy of its costs will vary with the maturity level of the option, i.e. Options that have been developed over several years will have more accurately estimated costs as they can usually be broken down into more detailed aggregate components , while for options that are still in their initial stages of conception, the design and costs are more approximate.

The ESO reconciles the option against the existing network

Having built up its understanding of the option, the ESO checks the existing part of the network that the option affects. This is to identify any parts of the option that might have been omitted and which may affect the cost estimate. The ESO notes any omissions or discrepancies in the SRF and seeks clarification from the TO. An example might be that the SRF describes using a spare bay, so the ESO compares against the latest system diagram to confirm the availability of the bay and its details. For detailed explanation, go to the **ESO challenges TO** stage.

ESO compares costs submitted to range of costs in its guidelines

The ESO performs the checks by the following two ways for each option at this stage as applicable.

1. Having developed its understanding of the option, the ESO compares the option's costs against the ESO's cost guidelines.
2. The ESO identifies similar options within a TO's portfolio and checks the cost consistency between them. For instance, where the option includes similar reconductoring work (e.g., same voltage level of the circuits), the ESO estimates the unit costs based on the existing TO's data and compares with the submitted data, to see if the cost is consistent.

Is there justification for using the 50% cost error bands?

Some aspects of options add a lot of uncertainty to the forecast cost of a project and so it allowed a larger cost error. For this reason, the ESO measures against a 50% cost error band for any option affected by the following:

- consents
- new technology with high uncertainty.

Costs within 25% of ESO's estimate?

For options the wider cost error bands are not applicable, the ESO conducts the check via the following steps:

- If the TO's submitted costs, are within 25% difference when compared against the ESO's estimated costs based on its own guidelines, the ESO will then
- check that a TO's costs are consistent with other similar options' costs across its portfolio. If this is the case, then the ESO sets the option costs as 'agreed' and the costs are used in the economic process.

If the costs are outside of the 25% band and/or the costs are not consistent, the ESO asks the TO for justification. For more detailed explanation, refer to the process map from **ESO challenges TO** stage.

Costs within 50% of ESO's estimate?

This step applies **only** to options where there is justification for wider cost error bands and is a similar two stage approach.

Firstly, the ESO takes the TO's submission and compares it with its own estimate of costs. If the differences are within 50%, the ESO progresses to the cost consistency check against the TO's portfolio.

If the costs are consistent with other similar options' costs in the TO portfolio, then the ESO sets the option costs as 'agreed' and the costs are used in the economic process.

If the costs are outside of the 50% band and/or the costs are not consistent, the ESO asks the TO for justification. For more detailed explanation, refer to the process map from the **ESO challenges TO** stage.

ESO challenges TO

If the ESO finds that an option's costs lie outside of the range that it estimates, it approaches the TO for a more detailed understanding.

TO provides explanation and/or background

In response to the ESO's challenge, the TO provides more information to resolve the query. This information might be:

- adding information, for instance including the details of cable section lengths
- correcting assumptions about assets, for instance the amount of plant involved in work on a substation bay
- clarifying the detailed works involved, if necessary, this may require send a clear list of components being costed and the costs breakdown. This is to allow the ESO to compare with their original estimates and review the reasonableness.
- amending a cost submission due to an error

If the TO provides more information to the ESO, the ESO will revise its cost estimation accordingly to check if the costs are within the 25% bracket or 50% bracket as applicable. If the cost falls within

these brackets, the ESO sets the option costs as ‘agreed’ and the TO’s costs are used in the economic process. If the TO provides more information to the ESO, the ESO will revise its cost estimation accordingly to check if the costs are within the 25% bracket or 50% bracket as applicable. If the cost falls within these brackets, the ESO sets the option costs as ‘agreed’ and the TO’s costs are used in the economic process. If the TO’s response does not resolve the ESO’s concerns, the ESO will reviews its concern, clarify if necessary, and refer it back to the TO.

If ESO cannot agree to the costs and explanations that the TO provided, the ESO engineer escalates the matter within ESO management. The ESO management decides whether to include the costs for the option in question at this stage or to omit it from the economic analysis.

ESO revises its costs estimate if TO explanation requires it

The discussion between the ESO and the TO might mean that the ESO has to recalculate its estimate of the costs. The ESO notes the revised costs.

Agreement reached?

The ESO engineer conducting the checking process passes the ‘agreed’ TO costs for use in the NOA economic process.

General points

The ESO keeps the cost information for all options submitted by each TO and uses them to do consistency checks of similar options in future years. In the consistency check, the ESO will only compare options submitted by same TO.

In general, the ESO assumes that the TO cost submissions include the project development costs. There might be occasions where this part of the cost is not included, in which case the TO and ESO will discuss further to decide how to treat this option in its economic analysis.

Appendix F

Form of Report

Appendix F: Form of Report

The Electricity System Operator (ESO) will produce the main NOA report which will be public and produce appendices where there is confidential information. The confidential appendices will contain full cost details of options and will have very limited circulation that will include Ofgem. Extracts of this report will go to the relevant Transmission Owners (TOs). The main NOA report will omit commercially confidential information. We will provide Ofgem with justification for the redactions. This appendix describes the contents and chapters of the report. The ESO reserves the right to add or change chapters to better represent the NOA information.

Foreword

Contents Page

Executive Summary

The executive summary will include headline information on options listing those that meet LOTI or SWW criteria.

Introduction

This chapter will describe the aim of the NOA report, provide the reader with clear guidance on its relationship with the Electricity Ten Year Statement (ETYS) and give guidance on how to navigate the NOA report.

Methodology

This chapter will describe the assessment methodology used at a high level and refer the reader to the NOA Methodology statement published on National Grid ESO's public website.

The chapter will also include the definition of and commentary on Major National Electricity Transmission System Reinforcement options.

We expect options to improve boundary capabilities and will fall broadly into three categories:

- LOTI/SWW that have Ofgem's approval. The NOA report will refer to these options which will be included in the baseline while presenting no analysis. The Report will justify why these options are treated as such.
- Options that have LOTI/MSIP/SWW analysis underway. This analysis and available results will be used in the NOA report.
- Options analysed using the Single Year Least Worst Regret cost-benefit analysis. This analysis will appear in the NOA report.

Should any options fall outside of these three categories, the chapter will list them with an explanation as to how and why they are treated differently.

Proposed options

This chapter is to give an overview of the options that the ESO has assessed. The overview will group options by their technical type including whether it is "build" or "reduced build". More detailed information on each option that will include status will be listed in an appendix. It will also include a commentary on "reduced build" or "non-transmission" ones, where applicable. The chapter will also include a short summary of the boundaries that make up the GB electricity network.

We will cover OWW options here or in a dedicated chapter appropriate with brief descriptions of reinforcement options and our analysis.

Investment recommendations

This chapter will cover the economic benefits of each option. The data will be tabulated and to support the comparison include earliest in service (EISD) and optimum delivery dates. An explanation of the regrets for the options and combinations of options where the options are critical will be included as an appendix of the report, i.e., those that need a decision to proceed (or otherwise) imminently. The chapter will detail the ESO's recommendation, whether to proceed with each option. In some instances, there might be a recommendation to proceed with more than one option. Such an instance could be at an early stage when two options are closely ranked but there is uncertainty about key factors for example deliverability.

The chapter will indicate options that are likely to meet the competition criteria.

The chapter will finish with a summary of the options for the boundary. It will provide:

- Any differences in preferred options between annual NOA reports where the ESO has carried out similar analysis in the past.
- How the scenarios have different requirements and how they affect the options.
- A comparative view as appropriate of each option's deliverability and how it affects the choice of the preferred options.

The chapter will meet the ESO obligation to produce the recommendations for the Network Development Policy for Incremental Wider Works.

Certain details will be in the appendices and that will include the cost bands for options as appropriate.

Interconnector analysis

This section of the report will introduce the method of analysing GB's potential for interconnectors to other markets and publish the analysis.

Stakeholder engagement Stakeholder engagement

To help our understanding of stakeholder views, through the document we will include feedback questions. We will use this feedback to refine the NOA process and methodology for the next report.

Onshore TOs have engaged with us and assisted in developing this NOA methodology. We want to extend our engagement further and will use our NOA email circulation lists.

Glossary

Appendix G

Summary of Stakeholder Feedback

Appendix G Summary of Stakeholder Feedback

This appendix summarises the views the ESO has on the comments we've received. We would like to thank the organisations for their feedback and contribution.

Area of feedback	Feedback	ESO response
Competition	What factors are considered when deciding about bundling or splitting and how does it consider deliverability and attractiveness to the supply chain?	Paragraph 4.4 onwards lists typical considerations for bundling and splitting. Any concerns about deliverability and attractiveness to the supply chain should come out of the associated discussions with the relevant TOs. The criteria are described in the methodology on page 35.
Competition	How will TCSNP determine which projects should undergo early competition?	The ESO distil the eligible project list based on tCSNP signal (Proceed-critical, Proceed-maintain and Hold) and run the competition CBA which is a separate process. This is then subject to further discussion with Ofgem. You can find more information on page 37 of the methodology.
Competition	The time taken for tendering could add 2.5 - 3 years to transmission project delivery dates and could have implications for connections offers.	Para 4.2.3 of the chapter covering eligibility for tendering assessments says that the time for tendering has not been allowed in the EISD. We recognise that the competition process would affect delivery timescales, and this might cause a change to the recommendation as to whether to compete or not.
Competition	The changed policy landscape and need to increase domestic supply of renewable generation will require accelerated network infrastructure which can only be achieved through increased coordination across the energy sector. Recent developments such as the ASTI framework and HND have been positive.	The ESO's approach recognises the benefits of competition to end consumers so we'll push for this where appropriate. As the feedback indicates, there are occasions such as the ASTI framework where reinforcements should be exempt from competition if there are suitable drivers, for instance the timing of connections that support net zero.
Competition	We're concerned that competition could lead to additional, unacceptable risks that lead to consumer detriment in the form of asset failure or interruptions to supply. Any risk to reliability or security of supply will have a significant impact on the GB transmission system and these risks must be considered carefully.	Any competitively appointed TO (or CATO) would be obliged to follow any technical obligations stipulated in SQSS, STC, STCP and other relevant codes and compliance, and be underpinned with an availability incentive and penalty mechanism during the operational phase.

Area of feedback	Feedback	ESO response
Competition	Referring to the definitions for "new" and "separable": We suggest "new" should be "A new electricity solution that delivers capacity or capability for the transmission system that is not serviced in whole or part by the existing transmission system". For separable, there must be clear separation of delivery, ownership and control between existing assets and the proposed new asset to be delivered through competition.	We've followed the definitions for new and separable that Ofgem consulted on and published in their guidance (get link from column H). We believe that these definitions are clear and have worked with them for "late" competition assessments for the last five years. Where there have nee ambiguous points, we've sought input from the TOs.
Competition	For a reinforcement to pass the competition CBA and be tendered, there must be a "material" benefit to consumers.	Our process is designed to maximise consumer value by taking account the benefits of competition while evaluating downsides such as the cost of time associated with the tendering process. We believe that this is the best method.
Competition	Why do you separate the reinforcement options into cost bands?	We categorise the reinforcement options by value so that the wider industry and prospective investors can gain a feel for the value of reinforcements. The cost bands provide a level of confidentiality for the reinforcement option owner's data and was agreed in discussions between the TOs, Ofgem and ESO. We have amended the methodology text to make this clearer.
Competition	Why doesn't the consumer benefit criterion apply to late competition?	The late competition criteria were developed before the early ones. When the ESO consulted for early competition, it led to using a CBA approach instead of the "late" high value criterion.
Competition	Is the purpose of bundling and splitting to increase the likelihood of competition being applied? There is a risk of inefficient bundling/splitting which then leads to consumer detriment.	Bundling and splitting is intended to help increase the likelihood of competition. We believe that any risk from bundling/splitting will be identified and managed in the discussions between the ESO and TOs when we identify such reinforcements.
Competition	In terms of tendering bundling and splitting, what is meant by "in the interests of consumers"? In terms of tendering bundling and splitting, how "common needs, drivers" and "it makes technical or commercial sense" be assessed?	We work to optimise consumer value overall. Stage 1 details (in section 4.7) give more insight into what we'd consider. For common needs and drivers, it might be in response to customer connections.
Competition	When splitting a project that includes new assets and refurbishment, how will the ESO assess the impact on project delivery?	The ESO splits projects having raised any such concerns with the relevant TOs to understand the effect of splitting.

Area of feedback	Feedback	ESO response
Competition	There would be significant implications for the supply chain if there is a change in position annually between competition and TO delivery. Delivery parties need certainty that they are delivering it or else the supply chain will not commit.	The early competition framework uses certainty as a criterion for identifying projects that are eligible for tendering. This is to stop projects awarded to tender being subject to changes in NOA recommendations and give the supply chain reassurance. This was a result of feedback in the early competition consultation stages. While the certainty criterion doesn't apply to late competition, the value threshold does which means that few schemes would be affected and so allow us to focus on them more closely to avoid the situation mentioned.
Competition	Under Criteria for whether the new assets are separable, it's not clear what the definition of 'clearly identified' is and how it will be assessed.	Ofgem's guidance doc https://www.ofgem.gov.uk/sites/default/files/docs/2019/02/criteria_guidance.pdf defines the term "clearly delineated" which we consider as being identifiable and say where a change in ownership occurs. This might be an isolator that can be named. Many boundaries are described as "the busbar clamps on the busbar side of busbar selector isolator X104" for example and we envisage the same or similar approach.
Competition	On assessing the benefits of running a competitive tender, we believe this difference should be material to reflect that the CBA outcome may not take account of all factors / risks to consumers and that there must be a clear and material benefit to consumers.	Our competition CBA process weighs the benefits of competition against the disbenefits which will mainly be the time taken to run the tender exercise. We believe that this gives a very indication of benefit or disbenefit to consumers.
EISD / delivery risk	Our view is that a range or window of delivery date would be more appropriate for reinforcement projects, considering the significant nature of the scale of reinforcement being considered, and new challenges which are outside of TO control, such as increased pressure on the supply chain and difficulties within the planning process.	We understand and appreciate the challenges faced to deliver the scale reinforcement projects required and therefore by extension the challenge of proposing an EISD. For the TCSNP2 we will only use a single EISD and not a range of EISDs. However, we are proposing a change to the to the Proceed - Maintain recommendation which will allow projects to gain this recommendation when they are required up to three years after their EISD, instead of a single year after their EISD. We believe this is a suitable compromise for the TCSNP as it reduces the dependence on the EISD for an option to be given a proceed.

Area of feedback	Feedback	ESO response
Energy scenario alignment	a) Can you provide more information on how the recommended HND and HND FUE offshore network designs align with the FES generation background? b) How confident is ESO that the HND FUE Links chosen will not change when assessed against the new FES? Like ASTI, shouldn't each links be reviewed individually again? c) We believe that the FES scenarios should diverge more to enable the consideration of a more diverse range of generation locations.	a) The FES background will reflect the generation background in the HND and HNDFUE terms of reference. For example, for HND, the ESO was tasked with designing a network that could facilitate 50GW of offshore wind and the FES backgrounds reflected the range of offshore wind in generation background. b) The NOA process is a bulk power transfer analysis. In that we assess how much power needs to be transferred from one part of the network to another. The NOA process considers the number of options needed to meet this need on a project-by-project basis. C) If you have any feedback for on the Future Energy Scenarios please contact them by going to https://www.nationalgrideso.com/future-energy/future-energy-scenarios/be-involved-stay-connected-fes
Energy scenario alignment	We are interested in understanding how the TCSNP2 recommendations will relate to CSNP in the context of defining the necessary strategic direction for the period beyond 2030. How will projects identified as being required within tCSNP2 be treated within the subsequent CSNP? Is the current ESO intention that TCSNP2 identified projects will be baselined within CSNP? Given the need for clear strategic direction, we question the value of the distinct recommendations "Proceed – Critical", "Proceed – Maintain" and "Hold" for options identified within the NOA 2023 critical path.	The TCSNP2 will lay the foundations for CSNP through its holistic network design follow up exercise and NOA recommendations. How these recommendations will be treated within the CSNP is still under discussion. We believe that the existing NOA recommendations provide sufficient industry signals for the TCSNP2.
Energy scenario alignment	Focusing on the post-2030 reinforcements seems a pragmatic approach that will allow a greater focus on longer term needs. However, we would expect the TCSNP2/ NOA 2023 to consider whether the need for any of the pre-2030 projects has further increased and if so, signal the urgency of regulatory decisions.	We believe that our analysis will be able to consider this by assessing the system constraints in the early 2030s, and by extension, the urgency for delivering the pre-2030 options. We regularly engage with industry partners and communicate the need for swift action, and the cost of project delays.

Area of feedback	Feedback	ESO response
Energy scenario alignment	The NOA process should consider reality checks to determine the extent to which diagnostic outputs are consistent with reality such as: network supply chain and generation; detrimental impacts of stop-start network investments; impacts on investor cost of capital due to dysfunctional market equilibriums; how resulting commercial risks may impact international competitiveness of GB market for investments in low carbon generation, etc.	As we develop our four design criteria further in the future, we will consider how we can integrate these additional factors.
Energy scenario alignment	It would be helpful for all the transparent assumptions, methodology, diagnostic outputs and reality checks to be subject to peer review by industry participants. The scale of the impact of decisions made on the back of the NOA process are so large that ESO should use every resource available to improve the modelling and insights as much as possible. Industry has a wealth of expertise and resource that can provide an excellent constructive challenge to the NOA process to enable it to deliver better value for customers and the wider energy system. We believe that this iterative process would be more suitable than the yearly FES-NOA cycle that is currently in place. Transparency of the peer feedback and any following changes to assumptions, modelling, and recommendations would also be desirable.	The ESO will review its confidentiality restrictions to see which parts of the process can be made more transparent with the industry. As part of the CSNP we are considering the interactions between the different ESOs assessments and what is in GB's best interest.
Energy scenario alignment	The NOA process can result in a wealth of valuable insight that could inform more effective developments of other industry changes. This could include charging reforms, REMA issues, low carbon support schemes and ESO contracting for ancillary services. We think that policy, regulatory and investment decisions could be substantially enhanced if the NOA team and insights from the NOA process were offered more widely as part of a broader two-way engagement with industry.	The ESO will review its confidentiality restrictions to see which parts of the process can be made more transparent with the industry. The team who produces the NOA welcome discussion and meetings with all stakeholders and we regularly engage with Ofgem, DESNZ and interested parties. If you would like to get in touch to arrange a meeting, please contact us at NOA@nationalgrideso.com.
Environment	How will the TO ensure that appropriate environmental aspects are considered during the investment process?	We are using the environmental and community appraisals methodology used for the HNDFUE which was developed with the TOs.
Environment	What criteria determine whether a reinforcement is excluded due to high certainty of environmental and community challenges?	The methodology provides a framework for identifying reinforcements with high consenting risks and these will be discussed with the affected TOs.

Area of feedback	Feedback	ESO response
Environment	The consenting process needs ESO support to justify decisions for reinforcements as part of being transparent.	We agree that the analysis we do must demonstrate system need to justify reinforcement work. This methodology is a key part of providing as much transparency as possible by describing our process in a full and accessible way while allowing us to meet our confidentiality requirements.
Network Planning Review	How often does the ESO intend to run the NOA element of the TCSNP?	The current proposal which is still being discussed with Ofgem and so might yet change is that under CSNP, there'll be a longer-term plan looking ten years ahead and published every three years. This will be supplemented with an annual assessment of system requirements which will look at the period two to ten years.
Network Planning Review	The market dispatch modelling used on the NOA process is an excellent tool that could be used for assessing whether the FES scenarios are reasonable and internally consistent, as well as informing efficient decisions regarding the Connect and Manage policy and other connection decisions. We believe this potential inconsistency could have a number of implications such as distorting the perceived benefit of flexibility solutions, such as long duration storage, electrolysis and new low carbon demand, as well as creating a distorted perception of future congestion costs and required network reinforcement.	We regularly communicate internally between the teams which produce the NOA and FES publications. We will continue to liaise with the FES team throughout the upcoming FES cycles and provide support where possible.
Network Planning Review	Connections policy and Locational Marginal Pricing (LMP) policies seem to oppose each other due to an apparent insufficiently joined up process. How will the NOA process provide evidence and transparency to ensure more internally consistent policy making about Connect and Manage and the impacts on generator revenues of potential Locational Marginal Pricing?	Locational Marginal Pricing (LMP) and its implications are being explored in the Future Markets teams we will continue to engage on these discussions as the NOA is a key input and ensure these concerns are addressed.
Network Planning Review	The NOA CBA should also include assessment of asymmetric risks and consider total system benefits/ costs rather than just avoided congestion costs. It would be valuable to include analysis of the impacts of network under-build/ over-build and higher than expected gas prices in the NOA CBA rather than just a central market view of constraint costs.	The TCSNP2 will assess reinforcements across multiple FES scenarios in order to capture the uncertainty we have when planning for the future. We require options to be 'critical' in one scenario or 'optimal' in at least two scenarios which provides more certainty to our recommendation.

Area of feedback	Feedback	ESO response
Network Planning Review	We would like the ESO to make the NOA process as transparent as possible. This can be done by providing information on assumptions, methodology, diagnostic outputs, reality checks and the logic process used to convert model results into network recommendations, to industry. This may require the ESO to review the commercial confidentiality criteria.	The ESO will review its confidentiality restrictions to see which parts of the process can be made more transparent with the industry.
Network Planning Review	We would like the ESO to publicly share the assumptions for the NOA process, such as price assumptions and generation load factors.	The ESO will review its confidentiality restrictions to see which parts of the process can be made more transparent with the industry.
Network Planning Review	We would like the NOA methodology to detail how relevant models work. In particular, how the bid-offer tool is used to calculate constraint costs.	As part of our transition to our new pan-European model, Plexos, we will review whether we can add further detail for how our modelling tools work.
Network Planning Review	Provide diagnostic outputs to give industry a window into the black box of the NOA process. This would reassure industry whether the models used in the NOA process are behaving as expected and results are consistent with the modelling assumptions.	The ESO will review its confidentiality restrictions to see which parts of the process can be made more transparent with the industry.
NOA process	We would like more information on the timeline especially with the change to the TCSNP to ensure we are fully aligned.	The core NOA economic process remains broadly unchanged for TCSNP in 2023. We are continuing to engage with our key stakeholders on the TCSNP including its timeline and for the wider industry we are ramping up providing information, for instance in our monthly Strategic Network Development newsletter. Furthermore, we continue to engage via the fortnightly calls with the TOs where we present timelines and have more detailed discussions on purpose, scope and analysis of TCSNP along with 1-2-1 interactions. If anyone would like more engagement, we are happy to hold bilateral meetings.
NOA process	1. We believe that the HND FUE and TCSNP 2023 could represent another very positive step towards defining the needs of the network that can deliver decarbonised power from its source to the point of consumption through upgrade of bulk power transfer routes based on a set of scenarios. 2. We also believe that this output requires coordination with all other network drivers, such as asset replacement and SQSS compliance. 3. We would be concerned with a TCSNP2 publication which claims a definitive strategic network design, without appropriate caveats.	The ESO is investigating asset replacement analysis and how we can integrate that. Also, the HNDFUE has required options to be assessed for compliance by the TOs who submit them. Many of these options will form part of the NOA options analysis later this year. In future, it would be ideal for all options to be assessed against compliance, but we recognise the additional workload this can place on the TOs.

Area of feedback	Feedback	ESO response
NOA process	More context on defined outcomes is now needed for this year's process and publication that allow us to ascertain what our contribution is and the timescales available to contribute these elements.	We have and will continue to engage with key stakeholders on the analysis time plan and help you to understand how they come together for the TCSNP report. Timescales are also discussed on a regular basis in the fortnightly telecons where we engage with TOs on a regular basis. We encourage any resource concerns be raised in such forums where such planning occurs.
NOA process	How robust are the TCSNP outputs and to what extent are caveats needed on the finality of the analysis' recommendations?	We are confident that our processes are robust to demonstrate system need where appropriate. We recognise that timescales are tight, but this year's analysis is the same process as used in previous NOAs while we expect the volume of reinforcements to analysis to be smaller as more reinforcements have been baselined because of HND in 2022. This creates the space for us to publish a few weeks earlier than usual and to include environment and community aspects.
NOA process	To what extent has the NOA methodology been reviewed/modified to reflect the ambitions of the Transitional Centralised Strategic Network Plan (TCSNP) and the longer-term goals of the CNSP?	The NOA Methodology changes have been summarised in section 1.6
NOA process	How will the methodology and resulting process balance the ESO's commitment to deliver by December 2023 on TCSNP2 with the need to now further develop initial solutions out of the 2-year HND/ NOA refresh/HNDFUE cycle sufficiently such that they can be presented with credibility and in harmony with other network drivers not covered by the TCSNP process?	Every year, the ESO consults on the NOA methodology so we can gather feedback from stakeholders, so we cover additional aspects ensuring credibility and harmony with other network drivers. In doing so, we have evolved NOA to consider other factors beyond the economic analysis such as deliverability, operability, environment and community impacts. If there are additional areas that are not covered by the NOA process, we welcome your views on how the NOA could be evolved.
NOA process	1. What will be published in the TCSNP2? 2. How will the ESO work with the TO ensure that the publications do not overstate the maturity of this process and it's assessed options?	1. The TCSNP publication will detail the ESO's reinforcement recommendations as per our licensee conditions. It will also include the HNDFUE design and other analysis. 2. We will continue to work with the TOs to ensure that option maturity is communicated within our recommendations.
NOA process	Given the short timescales to deliver a complex TCSNP2, how will the programme be managed such that sufficient time is afforded to the design and development of suitable network solutions?	We have developed and shared our plans with our stakeholders and are actively managing them with stakeholders to keep them on track. If there are aspects that cause concern, we ask that you raise this with us so we can review those areas.

Area of feedback	Feedback	ESO response
NOA process	With pre-2030 solutions not revisited under the methodology, how will FES background changes that constitute significant shifts in non-ASTI, pre-2030 network requirements (existing or new) be accounted for in TCSNP2? How will pre-2030 network options that are better understood in the context of long-term network needs via the TCSNP2 be formally modified (where this is possible without delay to critical works, directly or through project interactivity)?	TCSNP's scope is to look beyond 2030 focusing on the long-term strategic projects needed to facilitate the requirements of HNDFUE. As a result, this will be visited in the next iteration of the operation assessment which will look at the shorter term and confirm the changes in requirements in the nearer term.
NOA process	a) The methodology mentions the need for alteration to the generation and demand dispatch conditions to identify the maximum boundary capability across the boundary. This includes applying different interconnector flows. It would be beneficial to specify the boundaries and methodology of assessing this. b) To ensure a comprehensive analysis, it would be beneficial to outline if there are any benefits of conducting studies for different reasons other than Winter Peak. c) With regards to demand, we have some highly technical and specific questions regarding embedded generation at peak, which would require discussions with subject matter experts (SMEs) before commencing the study. Our concern is about risk of under stating network requirements. d) For all pre-2030 reinforcements (HND Essentials), we expect a signal/letter from ESO that supports TOs to build to its optimal delivery year from previous NOA 2021/22 and NOA 2021/22 Refresh Hold recommendation.	a) This is already undertaken in the analysis where various interconnector conditions and combinations are studied in the ETYS analysis and captured in the ETYS study guidelines b) This are currently developing our capability to assess year-round requirements. We plan to provide some information in the ETYS publication later in the year. Additionally, we also produce the GB Voltage Screening report which includes voltage issues at times other than winter peak. You can find this here - https://www.nationalgrideso.com/document/262316/download. c) Please contact us and raise these concerns through our usual channels such as by email – NOA@nationalgrideso.com d) We are working with the TOs to understand what is needed in more detail.
NOA process	Why are ASTI projects being reviewed on a project-by-project basis for the 2023 analysis and by what methodology?	The ESO has conducted several consultation meetings with TOs and Ofgem to discuss the treatment of ASTI projects. Within those meetings NGET proposed that ASTI projects should be considered on an individual basis due to the varying level of project maturity. Following that recommendation, certain projects that only have pre-construction funding were agreed to be reassessed along with any other projects that have their EISDs beyond 2030.

Area of feedback	Feedback	ESO response
NOA process	a) How should the potential cost impacts of delays in ASTI projects be considered? b) How should we deal with a change of scope for pre-2030 reinforcements?	a) PSNC and LRN4, which are being assessed within our analysis, will have their delay cost quantified and considered. If there are any other projects that can't meet their EISD that was submitted in HND, then they should be reassessed within the TCSNP process. We expect they will be submitted with updated EISDs in the SRF submission. b) Same as a)
NOA process	How will the ESO assess deliverability and operability and what does it think the impact will be? What does the ESO mean by "concepts" to create new options?	We plan to employ the same assessment methodology for assessing deliverability and operability as used for the HNDFUE. This assesses against several criteria like the technological readiness level, project complexity and design operability. Para 2.4.3.4 reflects that the ESO might propose a reinforcement in broad terms between two points on the network. This is often referred to as a 'notional' reinforcement.
NOA process	a) How are outages prioritised for HND/ASTI projects? b) Are HND/ASTI projects considered part of the NOA process? c) Can you clarify the default priority order during the assessment, i.e., customer connection works, NOA works, asset maintenance, or other works?	a) Where outage programmes and boundary profiles are provided for options, they will be included in the analysis. Since most options have an EISD beyond 2030, they are unlikely to have an outage plan. Additionally, as the NOA is a bulk power transfer analysis, in the longer term the analysis, it will focus on identifying any strategic network investments needed. b) HND and ASTI options that have an EISD beyond 2030 will be studied within the TCSNP2 analysis. Options like LRN4 and PSNC only have approval for pre-construction funding and will need to be reassessed. c) we do not prioritise works within the NOA process, except by their performance against our four design criteria.

Area of feedback	Feedback	ESO response
NOA process	How can realistic timelines be established to achieve cost and EISD advancement benefits within the NOA timetable? How does the ESO expect TOs to achieve cost and EISD advancement within the existing framework?	We can only do this analysis once we have done enough NOA economic analysis to be able to identify constraints where there are such costs that advancement might be particularly worthwhile and in discussion with the relevant TO. We describe the process in part 2.5.8 of the methodology. We would aim to complete the analysis in time for the Governance Committee meeting that reviews the economic results. It's important to note that this process demonstrates cases where it's worthwhile to investigate advancement and seek to justify further action such as either advancing a reinforcement EISD or prioritising it should there be competing issues in the EISD year. We believe that the existing framework allows for these analysis and related discussions.
NOA process	a) What challenges do you perceive from the potential for unclear accountabilities between pathfinder solutions and NGET's development of solutions for SQSS compliance through a price control agreement with Ofgem? b) How will a NOA process for incremental economic investment be evolved in the future to assess technical network compliance (e.g., Voltage, stability) in line with SQSS standards? What engagement will be undertaken with TOs to ensure this process is understood and agreed? c) In 2022 and 2023 the ESO and NGET have pursued reactive solutions for both technical network compliance and on an economic basis to reduce cost exposure to consumers as the fastest route to market. For technical drivers there have been differences of opinion in the assessments – what is the process for ensuring consistency with the standard in studies the ESO propose? d) How does the annual process for pathfinders work with HND and HNDFUE links? How will it be re-assessed?	a) We would like clarity on the unclear responsibilities and the ESO will explore how this can be resolved in the scope of the NOA process. As such the NOA's role it to facilitate bulk power transfer and provide recommendations on which projects should receive investment and by when. The pathfinders are run separate to the NOA process while providing clarity on the interactions in terms of how the requirements are identified and progressing within this methodology. b) This is currently being explored under various discussions within the Centralised Strategic Network plan. The NOA methodology provided here addresses how the NOA part of the analysis will be conducted in TCSNP2. c) We encourage further discussions to understand the difference in opinions on these assessments and we can see how best to align them. d) The annual process for pathfinders is determined in their respective methodologies. A pathfinder maybe identified through the NOA process but is then handed over to the pathfinder to further develop the specific needs and solutions. The result is then fed back into the back into the NOA process. Pathfinders tend to address shorter/medium term needs however, TCSNP2 is focusing on the longer term needs beyond 2030.

Area of feedback	Feedback	ESO response
NOA process	While accepting that options previously and classed as required for 2030 should not be re-assessed, the CBA should consider new options with relatively short lead times.	The scope of TCSNP is to look more strategically at the system need arising from factors beyond 2030 such as the additional Scotwind leasing and signal projects that might be needed for this. Going forward, we are reviewing how we validate the tactical plan in the short term under the network planning review and within the scope for the Centralised Strategic Network Plan
NOA process	The NOA process should apply appropriate weighting, in costing and evaluation, of technology that mitigates the risk of redundancy with attributes such as modularity which would allow options to be expanded or redeployed.	Our economic analysis process assesses costs and benefits of reinforcements versus constraint costs. For an option that could be redeployed after a period, the option's costs could be adjusted to reflect how those costs can be spread over longer timescales associated with redeploying the asset.
NOA process	We believe that the innovation project work we're involved in is relevant to the TCSNP methodology development work.	As our TCSNP methodology is the bridge from the existing NOA to the future CSNP, we do envisage it accommodating as broad a range of solutions as possible including those developed through innovation routes.
NOA process	Despite being recommended in last year's report, projects such as those falling in the MSIP category need continued NOA recommendations for the funding framework. We'd like continued discussion with the ESO to progress such cases.	We will continue to work with the respondent on this area to find a workable solution.
NOA process	We would encourage ESO to consider how best to ensure that the NOA analysis and recommendations can remain appropriate and helpful during the ongoing connection reform work and the impact this may have on the speed of generation connection in GB.	We will continue to consider the connection reform work within our Centralised Strategic Network Plan.
NOA process	We believe that producing the demand forecast and the following system analysis would allow for a more coordinated approach.	We have passed this feedback on internally and will consider it for the Centralised Strategic Network Plan.
NOA process	We would like to agree the treatment of ASTI schemes within the TCSNP options assessment as soon as possible.	We recognise the requirement for this and continue to work resolve the outstanding areas with the industry and Ofgem.
NOA process	We would like to agree the treatment of ASTI schemes within the TCSNP options assessment as soon as possible.	We recognise the requirement for this and continue to work resolve the outstanding areas with the industry and Ofgem.

Area of feedback	Feedback	ESO response
NOA process	We believe it would be helpful if the ESO, or some other independent third party, were to carry out a detailed post implementation review of all the assumptions, forecasts and recommendations relating to the NOA process. Assessing outturn performance is one of the very best ways of learning as part of a process of continuous improvement. It is important that the purpose of a post-implementation review is not to attribute blame, or penalties, but to make the process better for next time for benefit of customers and the whole energy system.	The ESO will consider how we can implement a post analysis review into our process, in addition to our current quality assurance process.