March 2025 / Issue 10.2

Appendix C

System Requirement Form

Appendix C: System Requirement Form

I. Overview

1. The System Requirements Form template is in an electronic form for parts B to F using a dedicated online portal. 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	NESO 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 unconstrained boundary transfers from the market model. 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. The template in Appendix C is used to carry any diagrams and necessary information for submission via the portal. This data reflects the maturity level and whether it meets the design requirements to enter the delivery pipeline.	Technical description of the option including: • physical works. • summary of included assets. • diagram. • what requirement the option solves and how. • earliest in-service date. • Overview of any environmental aspects. • Geolocational data. • High level construction programme including acceleration measures and their effectiveness. • other reference information including option name, status, reference number.

SRF Part	SOFI Content?	Description	Data content
Part C – Outage Requirements	Yes	TO responds where possible with multiple approach with corresponding outages for each approach. Each variation will have its own row in Part C in the online portal.	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. • Restrictions on sequence of works.
Part D – Studied Option combinations	Yes	TO and NESO supply how the options' capabilities have been studied to ensure that NESO accurately reproduces the options' order and capabilities in the economic analysis. Part D is via a separate online form. Each boundary will have its own Part D.	Boundary benefit data: • 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 • Acceleration sensitivities and corresponding path details where applicable
Part E – Options' Costs	Yes	TOs supply asset and cost information to allow the NESO to proceed with 'cost reasonableness' check (See QA Check, Annex 4). 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.

SRF Part	SOFI Content?	Description	Data content
		populated via the online portal.	• Delay, remobilisation and cancellation costs. • Date of last update of these costs. • Acceleration costs if applicable.
Part F – Publication Information	No	TOs supply names and descriptions of options for publication use. Each option will have its own row in Part F but only if it has featured in Part D.	The information includes: • The code agreed with NESO. • The option name to appear in the report. • The description of the option to appear in the report.

SOFI stands for System Operator Functions Information.
WACC stands for Weighted Average Cost of Capital.

II. Non-TO developers

1. The SRF template for non-TO developers will be publicly available on the NESO 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 NESO and incumbent TO as required.

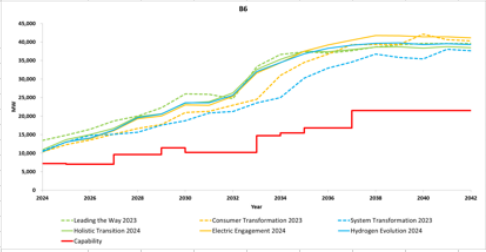
Figure C1: SRF Part A: Boundary Requirement and Capability

NESO Required Transfer

Boundary under Analysis: **B6**

Winter Peak Boundary Required Transfer Summary:

Year 1 Winter Peak Base Capability from previous year (2023): **6300MW**

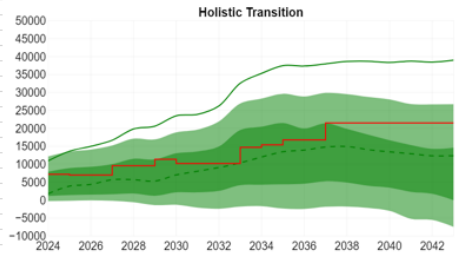


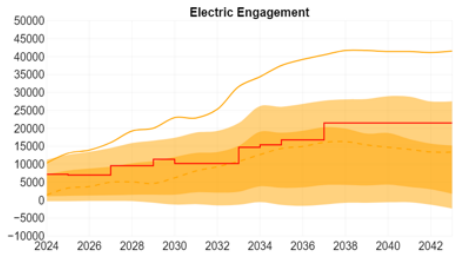
Winter Peak Required Transfers in accordance with NETS SQSS Chapter 4 Economy Background (in MW)	**Economy**	Secured Event	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40
	Holistic Transition 2024	N-D	10,947	13,641	14,999	16,684	19,843	20,622	23,499	23,901	26,226	32,573	35,323	37496	37385	37975	38639	38707
	Electric Engagement 2024	N-D	10,327	13,064	13,947	16,047	19,276	20,046	23,024	22,894	25,336	31,643	34,388	37526	39213	40487	41721	41703
	Hydrogen Evolution 2024	N-D	10,429	13,011	14,108	16,224	19,585	20,534	23,575	23,596	25,645	32,034	34,459	36803	38283	39175	39668	39767

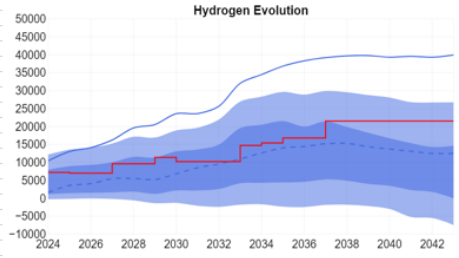
Winter Peak Required Transfers in accordance with NETS SQSS Chapter 4 Security Background (in MW)	**Security**	Secured Event	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40
	Holistic Transition 2024	N-D	1,795	3,898	4,403	5,706	5,690	5,327	7,018	8,063	9,080	10,387	12,016	13481	13929	14813	14939	14056
	Electric Engagement 2024	N-D	1,429	3,362	3,781	5,000	5,072	4,640	6,232	8,130	9,299	10,801	12,691	14390	14978	16076	16319	15385
	Hydrogen Evolution 2024	N-D	1,628	3,562	4,056	5,456	5,522	5,228	6,814	8,497	9,576	10,941	12,594	14044	14381	15199	15277	14335

Unconstrained Boundary Flows

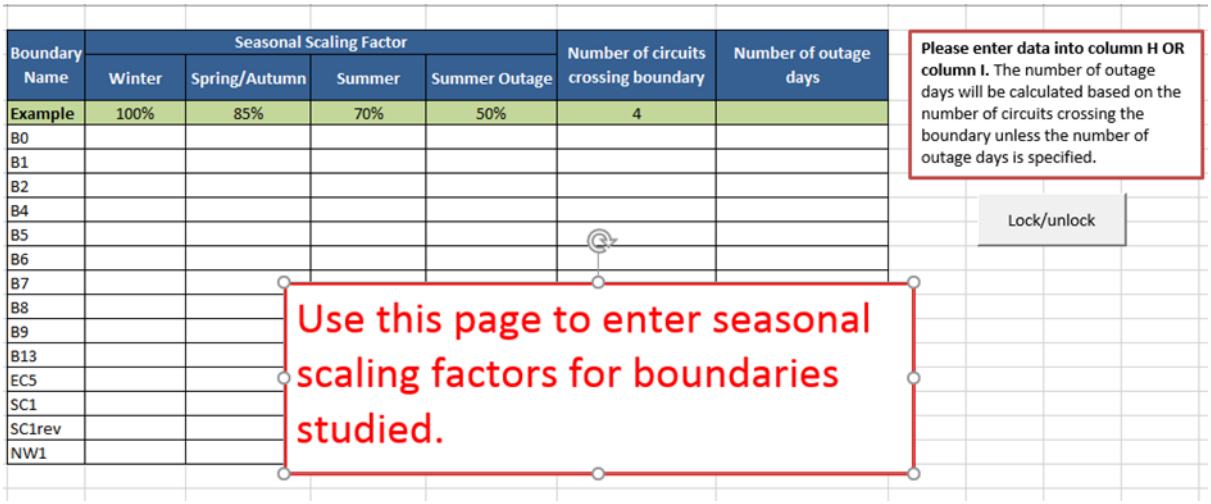
The section below details the unconstrained flows across the boundary. The 90th percentile and 50th percentile ranges have been highlighted for each scenario, and this has been shown together with the NETS SQSS required transfers and 2023 base boundary capability.







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.



Boundary Name	Seasonal Scaling Factor				Number of circuits crossing boundary	Number of outage days
	Winter	Spring/Autumn	Summer	Summer Outage		
Example	100%	85%	70%	50%	4	
B0						
B1						
B2						
B4						
B5						
B6						
B7						
B8						
B9						
B13						
EC5						
SC1						
SC1rev						
NW1						

Please enter data into column H OR column I. The number of outage days will be calculated based on the number of circuits crossing the boundary unless the number of outage days is specified.

Lock/unlock

Use this page to enter seasonal scaling factors for boundaries studied.

Appendix C: SRF Part B - Physical Description & Diagram form

Reinforcement Details

NOA ref	
TO ref	
Option Name	

Physical Description

Provide a description of the physical nature of the reinforcement sufficient to allow power system modelling. Please thoroughly list the all assets and works by type, number (for cable and OHL provide the length in km), voltage level and size. Please highlight any new assets in bold.

Diagram

Put a before and after diagram of how the configuration will look including circuits and substation layouts. This applies to the options which will introduce variations to the network topology and equipment layouts. For refurbishment options (e.g. re-tensioning / reprofiling lines, replacement of equipment), please put one diagram and highlight the alterations.

What problem does the reinforcement solve?

Describe how the proposed solution will increase capability for each boundary in turn with reference to Part A or information supplied by boundary studier

Instructions for filling in

This form is a complement of the SRF Part B and should be attached to the field "Physical Description" of the SRF of the corresponding reinforcement in the SRF online portal.

Please use a separate form for each reinforcement.

If the reinforcement has been submitted for previous NOA or tCSNP analysis:

- **A form with the existing data should be filled in for you**
- **Please review and update the fields "Physical Description", "Diagram", "What problem does the reinforcement solve?".**
- **Upload the form back to the SRF online portal.**

If the reinforcement is new:

- **Fill in all the fields in the form and upload it to the SRF online portal.**
- **Please use the following naming conversion: "NOA ref_tCSNP2Ref_PartB_attachment"**

Note that "NOA ref", "TO ref" and "Option Name" are provided in this form for reference only.