

## **STCP21-2 Issue 001 Network Asset Risk Metric (NARM) Data Exchange**

### **STC Procedure Document Authorisation**

<b>Company</b>	<b>Name of Party Representative</b>	<b>Signature</b>	<b>Date</b>
National Grid Electricity System Operator plc			
National Grid Electricity Transmission plc			
SP Transmission plc			
Scottish Hydro Electric Transmission plc			
Offshore Transmission Owners (OFTO)			

### **STC Procedure Change Control History**

Issue 001	31/01/2020	New procedure
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# 1 Introduction

## 1.1 Scope

1.1.1 This procedure describes the process for the exchange of data between the Onshore TOs and the Electricity System Operator (NG ESO) to enable each Onshore TO to carry out their Network Asset Risk Metric (NARM), part of the Network Output Measures (NOMs) Methodology.

1.1.2 This procedure applies to NG ESO and each Onshore TO. For the purposes of this document, Onshore TOs are:

- National Grid Electricity Transmission plc;
- SP Transmission plc;
- SHE Transmission plc.

This procedure does not include Offshore Transmission Owners because they do not report a Network Asset Risk Metric to The Authority.

1.1.3 This procedure defines the tasks, formal documentation, interface requirements, timescales and responsibilities that apply to NG ESO, and the Onshore TOs.

1.1.4 NG ESO shall be responsible for collecting information and carrying out analysis to provide the Onshore TOs with data specified in this STCP.

1.1.5 Some of this data is produced as part of existing NG ESO activities. This STC Procedure assumes NG ESO continues to provide these data outputs. Any changes to these data outputs that would affect the System Consequence methodology shall be raised at a working group of the signatories of this STCP in accordance with section 3.1 of this document.

1.1.6 Where NG ESO is responsible for additional data provision, guidance on these processes is defined in the appendices to this STCP, along with the data exchange forms to be used.

The data provision required by the NARM includes:

System Consequence	Data	Source	Responsibility	Data Exchange Process Applies
Customer Disconnection	Annual average system buy price (SBP) in £MWh	<p>The historical system buy price information is available to be downloaded from 2016 onwards on the Elexon website:</p> <p><a href="https://www.elexonportal.co.uk/article/view/250?cachebust=sqh7upei1">https://www.elexonportal.co.uk/article/view/250?cachebust=sqh7upei1</a></p> <p>The past calendar year average should be used in the system consequence model for the System Buy Price.</p>	TO sources independently from current Elexon reporting	No – already available in public domain
		The System Marginal Price is the term referred to in the		

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	Annual average system marginal price (SMP)/ Market Index Price in £MWh <sup>-1</sup>	NARM Methodology. However, on Elexon it is referred to as the Market Index Price.  The historical Market Index Price information can be accessed for every year, from 2003 to present. The past calendar year average should be used in the system consequence model for the System Marginal Price.  <a href="https://www.elexonportal.co.uk/article/view/188?cachebust=tc4cvv3kv3">https://www.elexonportal.co.uk/article/view/188?cachebust=tc4cvv3kv3</a>		No – already available in public domain
	Transmission Network Use of System refund cost per MW per hour (TNUoS)	The Transmission Entry Capacity (TEC) register (public domain).  <a href="https://www.nationalgrideso.com/connections/registers-reports-and-guidance">https://www.nationalgrideso.com/connections/registers-reports-and-guidance</a>  Total annual charges <a href="https://www.nationalgrideso.com/charging/transmission-network-use-system-tnuos-charges">https://www.nationalgrideso.com/charging/transmission-network-use-system-tnuos-charges</a>  This STC Procedure assumes NGESO continues to provide this data.	TO sources independently from current NGESO reporting	No – already available in public domain
	Vital Infrastructure sites	TO	TO sources independently from respective Transmission Network Control Centre (TNCC)	No – available within TOs
Boundary Risk Cost (see guidance document)	Boundary constraint costs	Output of bespoke power system economic model runs	ESO to provide TO with this additional output in line with STCP guidance and data exchange forms	<b>Data Exchange Process Applies</b>
Reactive Compensation (see guidance document)	Reactive compensation requirement factor	Operational history and System Study		<b>Data Exchange Process Applies</b>
	Cost of procuring MVAR from generation	The cost of procuring MVAR from generation is currently published by NG ESO. The STC Procedure requires NG ESO to continue to provide this data.		<b>Data Exchange Process Applies</b>

1.1.7 Each Onshore TO shall be responsible for providing NG ESO with the information they require to undertake their work and to review and accept the data provided by NG ESO. This will include:

- Boundary Risk Cost
  - Agreeing boundaries of interest, with NG ESO, to be studied by the economic analysis
  - Providing intact and post-fault boundary capabilities for all boundaries of interest to the NG ESO
- Reactive Compensation
  - Proposing and agreeing requirement factors for reactive compensation equipment with NG ESO

## **1.2 Objective**

- 1.2.1 The objective of this procedure is to detail how and when data is exchanged to enable the Onshore TOs to complete their Network Asset Risk Metric (NARM). This metric is reported to The Authority and enables an understanding of asset risk of failure on each Onshore TO's network.

## **2 Key Definitions**

### **2.1 For the purposes of STCP 21-2:**

- 2.1.1 **System Consequence Annual Review** refers to the process by which the TOs and NG ESO agree and exchange data to update the system consequence inputs to the NARM.
- 2.1.2 **Initial TO\_NG ESO Data Consultation Period** means the time in which the TOs and NG ESO agree on the data points to be provided by the TOs for study by NG ESO.
- 2.1.3 **TO Data Provision Date** means the date at which data is provided to NG ESO by the TOs. This is the end of Week 8 (Third Week of February).
- 2.1.4 **NG ESO Data Provision Date** means the date at which data is provided to the TOs by NG ESO. This is the end of Week 15 (Second Week of April).
- 2.1.5 **Network Asset Risk Metric (NARM)** refers to the process by which the TOs calculate Network Risk.
- 2.1.6 **Data Exchange Analysis Guidance** is a document that specifies how NG ESO and TOs undertake analysis to achieve the outputs sought by this data exchange.
- 2.1.7 **Data Exchange Form** means a template used for exchanging data between onshore TOs and NG ESO, to enable the outputs sought by this exercise. These forms are appended to the Data Exchange Analysis Guidance Document.

## **3 Procedure**

### **3.1 Review and Continuous Improvement**

- 3.1.1 The Onshore TOs have a responsibility to review and improve their Network Asset Risk Metric, which may in turn affect their requirements for data from NG ESO. NG ESO has a responsibility to feedback on the practicability of the data provision required by this STCP and any change in data process or data outputs that may affect the system consequence methodology.
- 3.1.2 The frequency of any meetings to review the STCP and its guidance is to be decided by the signatories of this STCP as necessary.
- 3.1.3 Any review and/or modification of this STCP shall include all Onshore TOs and NG ESO. Any modification proposal shall be formally agreed through the STCP governance process.
- 3.1.3 Any guidance or data exchange forms may be amended with agreement of the signatories of this STCP only. Agreement through the STCP governance process is not required

### **3.2 Disputes**

- 3.2.1 Any disputes arising amongst the parties and unresolved within 20 Business Days to be referred to The Authority.

### **3.3 System Consequence Annual Review**

3.3.1 The Onshore TOs and NG ESO shall begin the System Consequence Annual Review by Week 6 of the Calendar Year (First Week of February).

3.3.2 The Onshore TOs and NG ESO shall complete the System Consequence Annual Review by Week 18 of the Calendar Year (Fourth Week of April).

3.3.3 A timeline of the different phases of this review period is available in Appendix B.

### 3.4 Data Exchange Requirements

3.4.1 The scope of the data required in this review period is captured in 1.1.6. The guidance and data exchange forms associated with this STCP include:

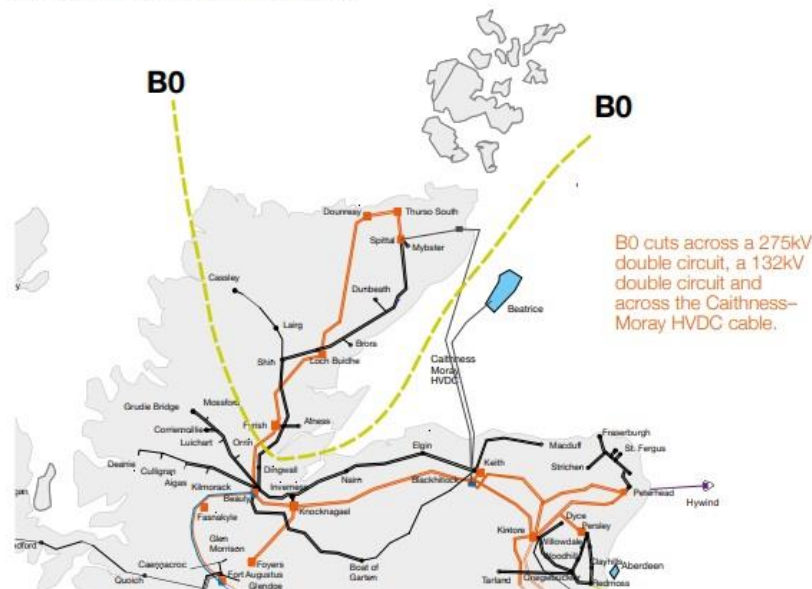
- Boundary Risk Cost
- Requirement Factors for Reactive Compensation

### 3.5 Initial TO\_NG ESO Data Consultation Period

3.5.1 The Initial TO\_ESO Data Consultation Period begins in Week 6 (beginning of Monday) and ends in Week 8 (end of Friday).

3.5.2 The Onshore TOs and NG ESO shall agree on a list of relevant boundaries to be considered. These boundaries will be consistent with those identified by the 'Network Options Assessment' (NOA) process each year, as in the example below from NOA 2018/19. It is possible that a shorter list of boundaries for study will be agreed between the Onshore TO and NG ESO based on their relevance to system consequence. These shall be a subset of the boundaries identified by NOA.

Geographic representation of boundary B0



Boundary B0 separates the area north of Beaulieu, comprising the north of the Highlands, Caithness, Sutherland and Orkney. The Caithness-Moray HVDC subsea cable, and associated onshore works, were completed in December 2018, and significantly strengthen the transmission network north of Beaulieu. Orkney is connected via a 33kV subsea link from Thurso. High renewables output causes high transfers across this boundary.

- 3.5.3 The Onshore TOs and NG ESO shall agree a list of reactive compensation equipment to be considered. Nomenclature identifying equipment must be consistent between both parties (NG ESO and the relevant TO, not required between TOs).

### **3.6 Onshore TO provision of data to NG ESO**

- 3.6.1 The Onshore TOs shall provide all required data in the NARM Data Exchange Form to NG ESO on or before the TO Data Provision Date (End of Week 9).
- 3.6.2 NG ESO will either confirm acceptance of each Onshore TOs' NARM Data Exchange Form submission or provide feedback or queries to each TO within 5 Business Days of the TO Data Provision Date (End of Week 10).
- 3.6.3 If not initially accepted each Onshore TO will submit an updated NARM Data Exchange Form within 10 Business Days of the TO Provision Date (End of Week 11).
- 3.6.4 If rejected a second time, the time to resolve (rounded up to the full day) is added to the end of the System Consequence Annual Review Period for that respective Onshore TO and NG ESO.
- 3.6.5 Disputes are dealt with in line with 3.2.1.

### **3.7 NG ESO provision of data to Onshore TOs**

- 3.7.1 NG ESO shall undertake data collection and analysis in accordance with the NARM Data Exchange Analysis Guidance.
- 3.7.2 NG ESO shall then provide all required data in the NARM Data Exchange Form (see guidance document) to the Onshore TOs on or before the NG ESO Data Provision Date (End of Week 15).
- 3.7.3 The Onshore TOs will either confirm acceptance of NG ESO's NARM Data Exchange Form submission or provide feedback or queries to NG ESO within 5 Business Days of the NG ESO Data Provision Date (End of Week 15).
- 3.7.4 If not initially accepted NG ESO will submit an updated NARM Data Exchange Form within 15 Business Days after the NG ESO Provision Date (End of Week 18).
- 3.7.5 If rejected a second time, the time to resolve (rounded up to the full day) is added to the end of the System Consequence Annual Review Period for that respective Onshore TO and NG ESO.
- 3.7.6 Disputes are dealt with in line with 3.2.1.
- 3.7.7 This concludes the System Consequence Annual Review.

## ***Appendix A: Abbreviations & Definitions***

### ***Abbreviations***

ESO/ NG ESO	National Grid Electricity System Operator plc
NARM	Network Asset Risk Metric
NGET	National Grid Electricity Transmission plc
SHE Transmission	Scottish Hydro Electric Transmission plc
SPT	SP Transmission plc
STC	System Operator – Transmission Owner Code
TO	Transmission Owner

### ***Definitions***

#### **STC definitions used:**

Business Days

The Authority

Offshore Transmission Owner

Onshore Transmission Owner

Electricity System Operator

