STCP13-2 Issue 000.1 SIF & LARF Methodology

STC Procedure Document Authorisation

Company	Name of Party Representative	Signature	Date
National Grid Electricity Transmission plc			
SP Transmission Ltd			
Scottish Hydro-Electric Transmission			
Offshore Transmission Owner			

STC Procedure Change Control History

Issue 001.1	26/09/2017	First Draft
001.2	31/01/2018	Final for issue
001.3	31/1/2018	Minor amendments following legal comments

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1 Introduction

1.1 Scope

1.1.1 This document defines the requirements associated with the calculation and provision of Local Asset Replacement Factors (LARF) and Secured Capability (for the calculation of Strategic Investment Factor (SIF)) between the Transmission Owners (TOs) and NGET.

1.1.2 For the purposes of this document, the TOs are:

- NGET; and
- SPT; and
- SHET and
- Offshore Transmission Owners

1.2 Objectives

1.2.1 The objective of this procedure is to detail:

- The requirements in terms of format and frequency for the exchange of information relating to LARF;
- The requirements in terms of format and frequency for the exchange of information relating to Secured Capability;
- How LARF should be calculated to ensure consistency across all TOs;
- How s~~S~~ecured c~~C~~apability should be calculated to ensure consistency across all TOs; and
- the lines of communication to be used.

1.3 Background

1.3.1 CUSC Section 15 details the User Commitment methodology that NGET shall use in connection offers to Users. The section covers both Securities and Liabilities. In order to calculate a User's Securities and Liabilities NGET required certain information to be provided by the appropriate TO.

1.3.2 Under schedule 9 para 12.1 (a)(iii)of the STC a TO is obliged to provide 'an assessment of the actual or potential for reuse and any strategic benefits provided as a percentage of the estimate provided' in relation to the Attributable Works carried out by the TO under a construction agreement. This procedure standardises how that assessment is undertaken.

~~1.3.2~~1.3.3 The information from a TO is required to calculate Attributable Liabilities and Securities. A User may choose to either Fix their Attributable Securities and Liabilities, or remain on Actual.

~~1.3.3~~1.3.4 To calculate Attributable Securities and Liabilities, ~~the following~~ information including the following is required from a TO:~~.~~

- Local Asset Replacement Factor (LARF); and

Secured c~~C~~apability ~~–~~ to calculate Strategic Investment Factor (SIF). Calculation of secured capability by TOs is defined in section 3.4 below.~~.~~

Comment [NG1]: Reference added to clarify the source of the requirement in the STC

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Comment [NG2]: Secured capability is not a defined term

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~~1.3.4~~1.3.5 The LARF is the factor representing the potential for reuse of each component within the Attributable Works as set out in the Notification of Fixed Cancellation Charge within an offer made by NGET as the GB SO to a User. It is also taken into account in the Actual Attributable Works Cancellation Charge at the time of cancellation.

~~1.3.5~~1.3.6 The SIF is intended to reflect the situation where a TO invests in assets larger than required for a single User in isolation and those assets may be shared either now, or in the future.

~~1.3.6~~1.3.7 CUSC defines the SIF as a factor calculated for each component within the Attributable Works as a ratio of the Transmission Entry Capacity and/or Developer Capacity and/or Interconnector User Commitment Capacity (as set out in CUSC section 15 paragraph 3.6.2) sharing those Attributable Works against the secured capacity of the Transmission assets.

Comment [NG3]: Reference added

~~1.3.7~~1.3.8 Transmission Entry Capacity is within the Users contract, so to calculate the SIF, the TO should provide the secured capability of the assets.

2 Key Definitions

2.1 For the purposes of STCP 13-2 SIF & LARF Methodology:

2.1.1 **Local Asset Reuse Factor (LARF)**. As defined in CUSC section 15

2.1.2 **Strategic Investment Factor (SIF):** As defined in CUSC section 15

~~2.1.2~~2.1.3 **Attributable Works:** As defined in the CUSC and STC; and then also used in the STC Schedule 9 'TO Construction Terms' which provides proformas for construction agreements between the System Operator and the Transmission Owners and which may be in relation to connection sites.

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~~2.1.3 **Secured Capability:** As defined in CUSC section 15~~

3 Procedure

3.1 LARF TO Data Requirements to the ESO

3.1.1 The LARF is provided by each TO for each component of the Attributable Works, where a ~~. A~~ such a component is the construction of an asset or group of assets forming part of the works detailed~~will be a scheme~~ in relation to a construction agreement~~of the TO~~. ~~However, w~~Where a construction agreement~~scheme~~ covers both Attributable and Wider Works, these~~is~~ should be split into two or more components to provide the System Operator~~NGESO~~ with a LARF for each set of attributable works relating to each User offer.

3.1.2 The LARF is provided at the time of the original application. It will only be reviewed and revised if necessary at the time a new construction agreement is agreed (e.g. via a Modification Application). The TO will also review and revise if necessary the LARF when components are changed within a scheme due to either additional contracted Users or termination of Users to that scheme, or where there is a significant change in forecast expenditure. Each LARF is a single figure to cover the life of a scheme from acceptance to completion. In addition at the time of cancellation reconciliation will be provided to reflect the actual value of assets able to be reused.

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3.2 TO Methodology for Calculation of LARF

3.2.1 To calculate the LARF, for each 6 monthly period of a scheme, the Reusable Asset Value and Cumulative Scheme Cost are forecast and the LARF is calculated as the sum of the Reusable Asset Values across the life of the scheme divided by the sum of the Cumulative Scheme Cost across the life of the scheme.

3.2.2 **Cumulative Scheme Costs:** This is based on the forecast cumulative spend, including any committed spend, made up to and including ~~in~~ any six month period (noting that~~e.g.~~ assets are included once a contract has been placed with a manufacturer)

3.2.3 **Reusable Asset Value:** This is calculated for each six month period. It is the sum of the Reusable Asset Value of each individual Asset, or Asset Type making up a scheme. Each Reusable Asset Value is calculated as follow: -

ReAV = GCA x PACF x ReF - (Rm + Tr + St + Mt)

3.2.4 Where:

ReAV ReUsable Asset Value
GCA Gross Cost of Asset
PACF Physical Asset Cost Factor
ReF Reusability Factor
St Storage Costs
Mt Maintenance Costs
Rm Removal Costs
Tr Transport Costs

3.2.5 The calculation of each component shall be on the following basis

3.2.6 **Physical Asset Cost Factor:** This factor is intended to remove any costs associated with the procurement and installation of an asset and leave just the cost of the physical asset. To calculate this factor a TO will remove from cost items including (but not limited to): -

- Design Costs
- Overheads
- Planning & Consent Costs
- Procurement Costs
- Transportation Costs
- Installation Costs

3.2.7 **Note 1:** The factor may vary over the life of a project e.g. once installed additional costs may have been added to the book cost resulting in a lower factor.

3.2.8 **Note 2:** Depending on a TOs procurement policy some items (e.g. planning and consenting) may not be included in the cost of an individual Asset, instead appearing as a separate line in a scheme. Costs should only be included in this factor where they have been included in the costs of that Asset.

3.2.9 **Reusability Factor:** This is either 1 or 0 and is to reflect if it is economically possible to reuse an asset or not. As above it may vary pre/post installation e.g. some assets are easily reusable if unused, so would be 1, but once used, recovery costs make them uneconomic to reuse, so would be zero. In considering whether an asset can be re-used the following may be taken into account: -

- Can an asset be economically be recovered (e.g. is the cost of removal, transport and storage in excess of the asset value)
- How often does a TO use this asset (e.g. if put in store would be uneconomic, or if three is not likely to be demand for that asset type in the foreseeable future)

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- What is the obsolescence of the asset (e.g. if a similar asset was ordered today, it is compatible with the asset)
- Is the asset of a unique design for a specific project/location

3.2.10 **Note:** The Reusable Asset Value shall not be less than zero. In some cases it will not be initially clear that it is uneconomic to re-use and asset and the calculation of Reusable Asset Value as above with a Reusability factor of 1 will result in a negative figure. In such cases, the Reusability factor shall be deemed to be zero.

3.2.11 The following costs are only needed where the reuse factor is 1.

3.2.12 **Removal Costs:** If an asset has been installed, its estimated removal costs. These will be site specific.

3.2.13 **Transport Costs:** If an asset cannot be stored where it is located (either onsite, or at the manufacturers) then costs of transport to the storage site are included. These will be site specific. Transport costs from the storage site should be included in the scheme for re-use.

3.2.14 **Storage Costs:** The estimated costs of storing an asset. These costs will include any costs in preparing and removing an asset for storage (e.g. sealing vents etc). For forecasting the storage period should be the higher of: -

- Average procurement timeframe
- Average period between assets being installed

3.2.15 **Maintenance Costs:** If the storage period exceeds the maintenance cycle for an asset, then include maintenance costs.

3.2.16 Revision of ReAV

~~3.2.17~~ It is anticipated that each TO will maintain its own list of ReAV by asset, or asset type, which will then be used in each LARF calculation. It is expected that these factors will vary across each TO to reflect different procurement policy and also the likelihood of assets being reused.

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3.3 SIF TO Data Requirements to ESO (Secured Capability)

3.3.1 The secured capability is provided by each TO for each component of the Attributable Works. Generally substation works will be considered one component and a circuit route another.

3.3.2 The Secured Capability is provided at the time of the original application and will be reviewed and revised either when the TO deems it necessary due to economic and efficient procurement of components or, if applicable, at the time of a Modification Application. In addition, at the time of cancellation reconciliation will be provided to reflect the actual assets built or under construction.

3.4 Calculation of Secured Capability

3.4.1 Assets are provided on the system to allow for security against faults as well as permit outages to be arranged. To evaluate the secured capability, the TO should: -

3.4.2 Where a system is designed to n-0 security, the continuous rating of the circuit should be used.

3.4.3 Where a system is designed to n-1 security, the rating used should allow for a single fault e.g. use the summer continuous rating for the remaining circuit.

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3.4.4 Where the system is designed to n-2 security, the rating used should allow for a fault during an arranged outage. E.g. the 24 hour summer rating of the rating of the remaining circuit should be used. It is assumed that the circuit on outage can be returned to service in emergency conditions within this time and loads reduced to within continuous ratings within this period. Where it is known at the planning stage that an emergency return to service is not possible in 24 hours, this should be taken into account.

3.4.5 Whilst the secured capability will be distinct to each scheme in most cases, it is recognised that in limited cases, the secured capability of the system may relate to a combination of schemes, or a scheme combined with existing assets. Where schemes do not fall within the above cases, an individual assessment will take place involving the SO and TO.

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