

# Business Process

## BP\_SO\_13.1 Interim Long-Term Coordinated Capacity Calculation

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## 1 ASSUMPTIONS

Assumptions made during the design of this process include:

- This is an all-island process, meaning the same process will be used across both jurisdictions on the island, Ireland and Northern Ireland. It will be executable from both Dublin and Belfast;
- This process will be required until the Coreso Regional Security Coordinator (RSC) solution is in place. Coreso is the regional transmission system security co-ordinator for much of Western Europe. The objective of Coreso is to assist TSOs to maintain optimal security of supply in Europe by providing regional coordination services. One of the key Coreso tasks would be to perform the calculation of cross-zonal capacity for the Ireland - United Kingdom (IU) coordinated capacity region;
- The proposed solution as outlined in the ‘SEM-GB Joint Implementation Group JIG023 – Interim Cross Zonal TSO Arrangements for GB-ISEM go-live’ is the approved approach for managing coordinated capacity calculation in the interim; and
- The existing EirGrid Interconnector DAC (EIDAC), Moyle Interconnector Limited (MIL), National Grid Electricity Transmission plc (NGET), EirGrid/SONI Planned Outage Coordination process (as per the Interconnector Operation Protocol (IOP)) will as far as possible be used to set the level of NTC (separately for both directions of transfer across EWIC and Moyle Interconnector).

## 2 PROCESS REFERENCES

### 2.1 RELATED RULES REFERENCES

The following table provides references to the documents that govern the design of this business process.

Document Title	Relevant Section	Description
Commission Regulation (EU) 2015/1222 of 24 July 2015 on establishing a guideline on capacity allocation and congestion management (CACM)	All	The Regulation establishing a guideline on Capacity Allocation and Congestion Management (CACM) entered into force on 15 August 2015. The provisions of CACM govern the establishment of cross-border EU electricity markets in the day-ahead and intraday timeframes, as well as methods for the calculation of interconnection capacity.
Commission Regulation (EU) 2016/1719 of 26 September 2016 on establishing a guideline on forward capacity allocation (FCA)	All	The Regulation establishing a guideline on forward capacity allocation (FCA) entered into force on 17 October 2016. The provisions of FCA establish a framework for the calculation and allocation of interconnection capacity, and for cross-border trading, in forward markets (i.e. timeframes longer than day-ahead).
SEM-GB Joint Implementation Group JIG023 – Interim Cross Zonal TSO Arrangements for GB-ISEM go-live	All	This document is a common proposal developed by all Transmission System Operators (hereafter referred to as “TSOs”) within the IU <sup>1</sup> Capacity Calculation Region <sup>2</sup> regarding the requirement to develop interim TSO cross zonal arrangements for ISEM go-live. This proposal is for the IU Capacity Calculation Region and has been developed as an all TSO proposal for submission to the SEM-GB Joint Implementation Group <sup>3</sup>

<sup>1</sup> The IU Capacity Calculation Region refers to the bidding zone border SEM-GB as described in ENTSO-E’s all TSOs draft proposal for Capacity Calculation Regions in accordance with Article 15 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management.

<sup>2</sup> Decision of ACER No 06/2016 of 17 November 2016 on the Electricity System Operator’s proposal for the determination of capacity calculation regions.

<sup>3</sup> The GB/ISEM Joint Implementation Group (JIG) is a meeting between the Northern Irish, the Irish and GB Regulatory Authorities (and ministries on an ad-hoc basis), as well as the TSOs (EirGrid plc, SONI Limited, EirGrid Interconnector DAC, Moyle Interconnector

Process for determining Transfer Capacity on the East West Interconnector	Outlines methodology	Paper outlines the approach and methodology adopted by EirGrid for determining Transfer Capacity on EWIC. A similar document will be developed for Moyle Interconnector.
Moyle Interconnector Operating Protocol	Appendix I & J	The Moyle Interconnector Operating Protocol is a tripartite agreement between MIL, SONI and NGET. The purpose of the document is to provide a common point of reference for MIL, SONI and NGET staff on issues associated with the operation of Moyle Interconnector.
EWIC Interconnector Operating Protocol	Appendix I & J	The EWIC Interconnector Operating Protocol is a tripartite agreement between EIL, EirGrid and NGET. The purpose of the document is to provide a common point of reference for EIDAC, EirGrid and NGET staff on issues associated with the operation of EWIC.

## 2.2 RELATED DOCUMENTS

The following table provides a list of documents that are related to this business process.

Document Title	Relationship	Description
Balancing Market Principles Statement	Information	Public guide to the scheduling and dispatch process which describes the cross zonal arrangements.
Cross Zonal User Guide	System guide	A step-by-step system guide detailing procedures required in the Interconnector Manager Platform (ICMP).

## 3 PROCESS CONTEXT

### 3.1 BUSINESS MODEL RELATIONSHIP

The 'Interim Long-Term Coordinated Capacity Calculation (Net Transfer Capacity)' process sits within 'Interim Cross Zonal Capacity' process group within the Systems Operator processes. This process group is required to meet EirGrid/SONI's obligations under the network codes governing all cross-border electricity market transactions and system operations in an interim capacity until the enduring RSC (Coreso) solution is in place, until that point interim measures will persist.

### 3.2 BACKGROUND AND SCOPE

#### Background

There are two key network codes which outline specific requirements and obligations on TSOs in relation to Europe's cross-border electricity networks, these include:

1. Commission Regulation (EU) 2015/1222 of 24 July 2015 on establishing a guideline on capacity allocation and congestion management (CACM), which outlines the following requirements:
  - Develop a common capacity calculation methodology,
  - The capacity calculation methodology will include details of any allocation constraints,
  - Establish a Coordinated Capacity Calculator,
  - Establish a common Coordinated Redispatching and Countertrading Methodology.
2. Commission Regulation (EU) 2016/1719 of 26 September 2016 on establishing a guideline on forward capacity allocation (FCA), which outlines the following requirements:
  - Develop a common capacity calculation methodology for long-term allocations,
  - Use the Coordinated Capacity Calculator established under CACM,
  - Develop a methodology for splitting long-term cross-zonal capacity.

The network codes envisage that the Cross-Zonal Capacity calculation will be carried out by the appointed Coordinated Capacity Calculator for each Capacity Calculation Region, in accordance with the relevant Capacity Calculation Methodology.

This is known as Enduring Capacity Calculation methodology and is being developed for the SEM-GB market by the TSO Channel-IU (BritNed Development Limited, National Grid Electricity Transmission plc, National Grid Interconnectors Limited, Réseau de Transport d'Electricite, TENNET, Elia, NEMOLink, EirGrid plc, Moyle Interconnector Limited, SONI Limited, and EirGrid Interconnector DAC) group.

In the enduring solution Coreso, the Regional Security Coordinator (RSC) for the Ireland-United Kingdom (IU) Region, will act as the Coordinated Capacity Calculator performing the calculation of cross-zonal capacity for the IU coordinated capacity region. However, the enduring Coreso solution will not be in place to meet CACM and FCA compliance at the time of I-SEM go-live and as a result an interim solution has been developed for the IU region to support the achievement of I-SEM go-live objectives to be compliant with the CACM Regulation (EU) 2015/1222 and/or FCA Regulation (EU) 2016/1719.

The Interim Coordinated Capacity Calculation Arrangements will go live in line with I-SEM timelines and will remain in place until replaced by an enduring solution which will be compliant with all applicable European Network Codes (ENCs) and seek to achieve the objectives set out above to the extent possible.

#### Scope

The scope of this process, Interim Long-Term Coordinated Capacity Calculation, covers the development of Net Transfer Capacity (NTC) on the Interconnectors in the IU region for the purpose of providing these capacity values (for 52 weeks per calendar year in half hourly resolution) for use in the (FTR) Financial

Transmission Rights auction, which are run by JAO (Joint Allocation Office) on behalf of the Interconnector Owners.

The methodology used in this process is outlined in the 'Process for determining Transfer Capacity on the East West Interconnector' paper. In summary Net Transfer Capacity (NTC) calculations using the Available Transfer Capacity (ATC) method associated with power system security will be jointly determined by the TSOs. When determining the capacity of the interconnection between two systems, the capacity is calculated by using models of each area. If the values differ the lower value is used. The objective is to give the market the highest possible capacity for energy trading taking into account the available interconnector capacity, secure and efficient operation of the power systems on both sides of the Interconnector and the possibility of faults on either network.

NTC is the maximum exchange possible between two areas compatible with operational security standards applicable in both areas and taking into account the technical uncertainties on future network conditions. The NTC is set separately for both directions, import and export, of transfer across EWIC and Moyle Interconnector at the operation reference point.

The process for determining the NTC calculations associated with power system security will be jointly determined by all TSOs i.e. EirGrid, SONI, MIL, EIDAC and NGET. The process begins with the 'Planned Outage Co-ordination' phase. This will be completed as per the current process. EIDAC, MIL, NGET and EirGrid/SONI undertake an annual Planned Outage Coordination exercise in line with the current EirGrid-EIDAC-NGET Interconnector Operating Protocol and SONI-MIL-NGET Interconnector Operating Protocol. EirGrid/SONI liaise with EIDAC and MIL regarding their planned outages and planned outages on the transmission system in Ireland or Northern Ireland that may impact on EWIC or Moyle Interconnector. EirGrid/SONI then input the output of this planning phase in to NGET's outage planning system TOGA. Following outage planning, all TSOs will determine the capacity of the interconnection between the two systems. Near Time will perform this for EirGrid/SONI which involves network security analysis and takes into account operating reserve requirements and system constraints. This will provide on an annual basis 52 NTC values at weekly resolution with additional resolution as necessary during any planned outage periods. The Interconnector Owners and NGET will also perform this step. All TSOs will then discuss the NTC values for the calendar year ahead at the Interconnector Operating Protocol meeting. If agreement on the values cannot be reached the lowest values will be selected. Once these values are agreed, EirGrid/SONI will then take these values and input them into the Interconnector Management Platform (ICMP). The ICMP then calculates the NTC values; the calculation performed by the system will essentially just take the minimum value.

Once the values are set for the calendar year ahead, they can be reduced at later point but this is not covered within this process, see Long-Term NTC Changes and Real Time NTC reductions for details on how reductions are managed after this process has been completed for the calendar year ahead.

## 4 PROCESS OBJECTIVE

The objective of this Business Process is to meet the following obligations, namely:

- Commission Regulation (EU) 2015/1222 of 24 July 2015 on establishing a guideline on capacity allocation and congestion management (CACM);
- Commission Regulation (EU) 2016/1719 of 26 September 2016 on establishing a guideline on forward capacity allocation (FCA);
- The objective of the process is also to ensure that NTC values, for 52 weeks on an annual basis are agreed and issued to the Joint Allocation Office (JAO) as required for the FTR Auctions); and
- As per the SEM-GB Joint Implementation Group JIG023 – Interim Cross Zonal TSO Arrangements for GB-ISEM go-live the NTC values must be set sufficiently in advance to facilitate the sale of

Calendar annual and SEM annual (October to September – auctions take place in July) long term transmission rights products.

**5.1.1 EIRGRID/SONI**

The following table provides a summary of the obligations of EirGrid & SONI in relation to this process.

<b>Function</b>	<b>Responsibility in relation to process</b>	<b>Timeline Associated</b>
Near Time (Process Owner)	<ul style="list-style-type: none"> <li>Perform planned outage coordination with Interconnector Owners</li> <li>Input long-term data into TOGA, NGET's outage system</li> </ul>	Annually - by end of May Y-1
	<ul style="list-style-type: none"> <li>Determine long-term NTC values in line with process timelines</li> </ul>	Annually- by end of June Y-1
	<ul style="list-style-type: none"> <li>Attend IOP meetings as required and agree co-ordinated long-term (52 weeks) NTC values</li> <li>Note: Real Time Manager may attend the IOP meetings on behalf of Near Time and present this information.</li> </ul>	Annually- by end of June Y-1
Trading	<ul style="list-style-type: none"> <li>Input EirGrid &amp; SONI, Interconnector Owners and NGET's long-term NTC values into the Interconnector Management platform</li> <li>Send NTC values to Electricity Market Fundamental Information Platform (EMFIP)</li> </ul>	Annually- by end of June Y-1

**5.1.2 INTERCONNECTOR OWNERS**

The following table provides a summary of the obligations of the Interconnector Owners in relation to this process.

<b>Party</b>	<b>Responsibility in relation to process</b>	<b>Timeline Associated</b>
Interconnector Owners	<ul style="list-style-type: none"> <li>Provide planned outage plan for coming calendar year</li> </ul>	Annually – by end of March Y-1
	<ul style="list-style-type: none"> <li>Develop long-term NTC values in line with process timelines</li> </ul>	Annually- by end of June Y-1
	<ul style="list-style-type: none"> <li>Attend IOP meetings as required and agree co-ordinated long-term (52 weeks) NTC values</li> </ul>	Annually- by end of June Y-1

**5.1.3 NATIONAL GRID ELECTRICITY TRANSMISSION PLC**

The following table provides a summary of the obligations of National Grid Electricity Transmission plc (NGET) in relation to this process.

<b>Party</b>	<b>Responsibility in relation to process</b>	<b>Timeline Associated</b>
NGET	<ul style="list-style-type: none"> <li>Develop long-term NTC values in line with process timelines</li> </ul>	Annually- by end of June Y-1
	<ul style="list-style-type: none"> <li>Attend IOP meetings as required</li> </ul>	Annually- by end of

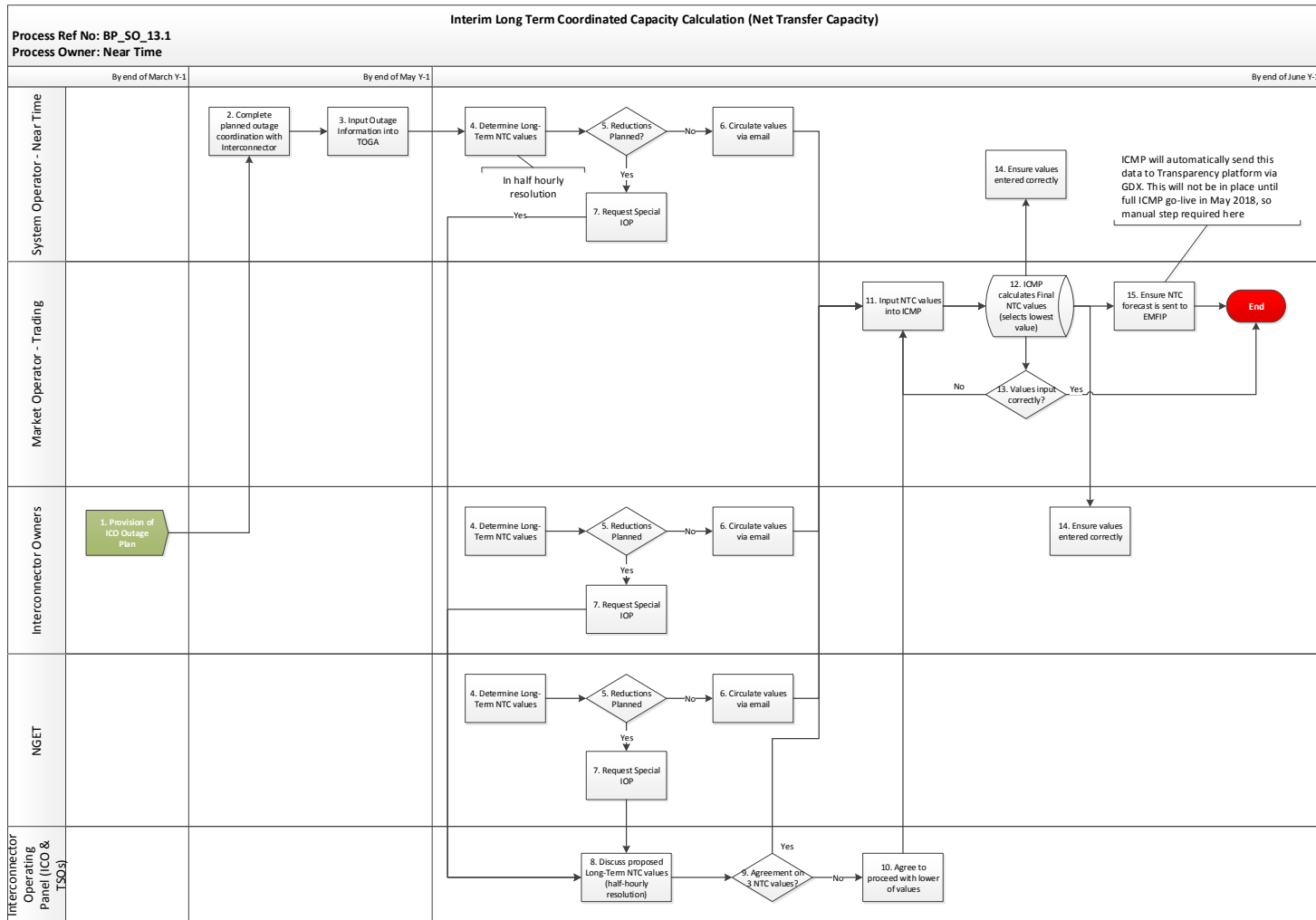


	and agree co-ordinated long-term (52 weeks) NTC values	June Y-1
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# 6 PROCESS DESCRIPTION

## 6.1 LEVEL 3 PROCESS

### 6.1.1 PROCESS MAP



## 6.1.2 PROCESS STEPS



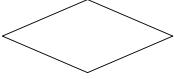




#	Step	Step Description	Responsible Role	Outputs	Indicative Timing/ Frequency	System
1	Provision of ICO Outage Plan	The Interconnector Owners will provide their outage plans to Near Time as per EirGrid Grid Code and SONI Grid Code Requirements.	Interconnector Owner	N/A	Annually – March Y-1	N/A
2	Complete planned outage coordination with Interconnector	Near Time will complete their outage planning process as per existing process. Interconnector Owners will input into the overall outage planning process run by Near Time as per current practice.	Near Time	Outage plan	Annually – May Y-1	N/A
3	Input Outage Information into TOGA	Near Time will then input the required outage information into NGET's TOGA system.	Near Time	N/A	Annually – May Y-1	TOGA
4	Determine Long-Term NTC values	When determining the capacity on interconnection between two systems the interim proposal is that the capacity is calculated individually by the TSOs on each side of the interconnector. Near Time will do this for EirGrid & SONI.	Near Time / Interconnector Owners / NGET	Long-Term NTC values	Annually – June Y-1	N/A
5	Reductions Planned?	Each party must decide if reductions are planned. If yes, go to step 7. If no, go to step 6.	Near Time / Interconnector Owners / NGET	Long-Term NTC values	Annually – June Y-1	N/A
6	Circulate values via email	If no reductions to NTC values are determined, the proposed values can be	Near Time / Interconnector	Long-Term NTC values	Annually – June Y-1	Email

#	Step	Step Description	Responsible Role	Outputs	Indicative Timing/ Frequency	System
		circulated via email to all parties.	Owners / NGET			
7	Request Special IOP	If reductions to NTC values are determined a special Interconnector Operating Panel (IOP) must be held.	Near Time / Interconnector Owners / NGET	Long-Term NTC values	Annually – June Y-1	N/A
8	Discuss proposed Long-Term NTC values (52 NTC values at weekly resolution)	All TSOs will discuss their proposed Long-Term NTC values at the Annual Interconnector Operating Panel meeting. The interim solution proposes that where there are differing values presented, the lower of the values should be chosen.	All TSOs & ICOs	N/A	Annually – June Y-1	N/A
9	Agreement on NTC values?	If there is agreement on the NTC values, go to step 11.  If there is not agreement on the NTC values go to step 10.	All TSOs & ICOs	N/A	Annually – June Y-1	N/A
10	Agree to proceed with lower of values	If agreement cannot be reached all parties will proceed with the lower of values.	All TSOs & ICOs	N/A	Annually – June Y-1	N/A
11	Input NTC values into ICMP	EirGrid/SONI will then input the agreed values from each party into the Interconnector Management Platform (ICMP).	EirGrid/ SONI (Market Operations Trading)	N/A	Annually – June Y-1	ICMP
12	ICMP calculates Final NTC values	On save of updated NTC for any interval by an Interconnector Owner or System Operator, the system shall recalculate the Final NTC for each of the updated intervals, interconnectors and directions as follows:	System step	NTC values calculated	Annually – June Y-1	ICMP

#	Step	Step Description	Responsible Role	Outputs	Indicative Timing/ Frequency	System
		<p><b>Final NTC = min ( NTC<sub>SO1</sub>, NTC<sub>SO2</sub> , NTC<sub>ICO1</sub> )</b></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• NTC is the final Net Transfer Capacity calculated in the system that will be used in all later external communications and calculations;</li> <li>• NTC<sub>SO1</sub> refers to the NTC as declared by the Irish System Operator relating to the Interconnector (SONI for Moyle Interconnector and EirGrid for EWIC);</li> <li>• NTC<sub>SO2</sub> refers to the NTC as declared by the GB System Operator relating to the Interconnector (Always NGET); and</li> <li>• NTC<sub>ICO1</sub> refers to the NTC as declared by the Interconnector Owner relating to the Interconnector (EirGrid Interconnector DAC for EWIC and Moyle Interconnector Limited for Moyle Interconnector).</li> </ul>				
13	Values input correctly?	<p>Check performed to ensure values have been input correctly.</p> <p>If yes, go to End.</p> <p>If no, go to step 11.</p>	EirGrid / SONI (Market Operations Trading)	N/A	Annually – June Y-1	ICMP
14	Ensure values entered correctly	Once values have been input into the system, the ICO and TSO will be able to log-in and ensure the values they	Near Time / Interconnector	NTC file sent to ICOs, NGET &	Annually – June Y-1	ICMP

#	Step	Step Description	Responsible Role	Outputs	Indicative Timing/ Frequency	System
		submitted have been inputted correctly.	Owners	MMS		
15	Ensure NTC forecast is sent to EMFIP	<p>Once values have been agreed, a forecast needs to be sent to EMFIP, the Transparency Platform.</p> <p>ICMP will automatically send this data to Transparency platform via GDX. This will not be in place until full ICMP go-live in May 2018, so manual step required here.</p>	EirGrid / SONI (Market Operations Trading)	NTC file sent to JAO EMFIP	Annually – June Y-1	GDX/ Email

## 7.1 PROCESS FLOWCHART KEY

FLOWCHART KEY	
	Trigger
	Process step
	Process decision / question
	Reference to another process
	Another business process to be implemented following current step (current step is a trigger for another process)
	Process end
	System (automatic step)