

The Single Electricity Market (SEM)

Agreed Procedure 2: Interconnector User Capacity Right Calculation and Dispatch Notification

Version 7.0

28 May 2010

SEM Agreed Procedure

Title	Agreed Procedure 2: Interconnector User Capacity Right Calculation and Dispatch Notification
Version	7.0
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DOCUMENT HISTORY

Version	Date	Author	Comment
1.0	18/10/2006	SEM Implementation Team	Incorporation of more comments
2.3a	10/04/2007	Regulatory Authorities	Updated with RA397 and Code 1.3
2.7	25/04/2007	Regulatory Authorities	Internal review
3.2	22/06/2007	Regulatory Authorities	Approved for Go-Active by Regulatory Authorities and TSO/SEM Programme
4.0	20/11/2007	Modification Panel Secretariat	Incorporating RA-Approved Mod_45_07
4.1	24/10/2008	Modification Committee Secretariat	Mod_59_08: Interconnector Unit Nominations-Net Zero Flow
4.2	24/11/2008	Modification Committee Secretariat	Mod_60_08: Changes to AP2 to reflect MO obligation to calculate MIUNs in enduring Code and IA responsibility to calculate and submit ATC.
5.0	07/04/2009	SEMO	SEMO Baseline Documentation at V5.0
6.0	30/10/2009	SEMO	SEMO Baseline Documentation at V6.0
7.0	28/05/2010	SEMO	SEMO Baseline Documentation at V7.0
8.0	[date]	SEMO	SEMO Baseline Documentation at V8.0

RELATED DOCUMENTS

Document Title	Version	Date	By
Trading and Settlement Code	V7.0	28/05/2010	SEMO
BETTA Operational Procedures	Version 3.0	Nov 2005	SONI
Moyle Interconnector Procedures	Version 1.0	7 th March 2005	SONI
Agreed Procedure 1 "Participant and Unit Registration and Deregistration"			
Agreed Procedure 4 "Transaction Submission and Validation"			
Agreed Procedure 6 "Publications"			
Agreed Procedure 11 "Market System Operation, Testing, Upgrading and Support"			

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE

This Agreed Procedure describes the specific procedures for the treatment of Interconnectors which connect the Transmission Systems of Ireland or Northern Ireland with systems outside Ireland and Northern Ireland and which interact with the SEM (the “Single Electricity Market”). This Agreed Procedure sets out the processes for the operation of Interconnectors as required by the Trading and Settlement Code (the “Code”) and with which Parties to the Code must comply.

1.2 SCOPE OF AGREED PROCEDURE

This Agreed Procedure is a definition of procedural steps to be followed by the Market Operator, Interconnector Owner, Interconnector Administrator(s), System Operator(s) and Participants. It forms an annexe to, and is governed by, the Code. This document is a statement of process and procedure. Parties’ rights and obligations are set out in the Code.

1.3 DEFINITIONS

Save as expressly defined, words and expressions defined in the Code shall have the same meanings when used in this Agreed Procedure. Abbreviations and definitions that are specific to this Agreed Procedure are set out within Appendix 1.

References to particular sections relate internally to this Agreed Procedure unless specifically noted.

1.4 COMPLIANCE WITH AGREED PROCEDURE

Compliance with this Agreed Procedure is required under the terms as set out the Code.

2. DESCRIPTIVE OVERVIEW

Interconnectors and their related Units have special treatment under the SEM that differs from that of other Generator Units. ~~The details are set out in the Code and this Section 2 of this Agreed Procedure provides a non-legally binding overview of these provisions, for information purposes only, as context for the remaining provisions of this Agreed Procedure.~~

The Code provides that an Interconnector Owner (the entity that owns or controls an Interconnector) will register ~~the an~~ Interconnector using Type 1 Channel, and in doing so shall appoint an Interconnector Administrator to perform day-to-day functions under the Code. The Interconnector Administrator will be designated as the responsible Party for all Type 2 Channel and Type 3 Channel communications in respect ~~of to the an~~ Interconnector.

Any procedures established for the interface to any relevant market outside SEM are outside the scope of this Agreed Procedure.

For each Interconnector, an Interconnector Error Unit and an Interconnector Residual Capacity Unit ~~are shall be~~ registered. The Interconnector Error Unit is used for managing and settling Interconnector imbalances. The Interconnector Residual Capacity Unit is intended for the utilisation of residual capacity by the relevant System Operator, subject to commercial agreement.

On registration of ~~the an~~ Interconnector, the Interconnector Owner ~~shall determines~~ the Interconnector Administrator and the Interconnector Error Unit ~~is shall be registered~~ to the Interconnector Administrator. ~~The System Operator shall register the Interconnector Residual Capacity Unit.~~

The procedures to be followed by the Interconnector Administrator in determining the Active Interconnector Unit Capacity Holdings and in ~~recovering the managing~~ Interconnector ~~operations imbalances~~ fall outside the scope of this Agreed Procedure.

In this Agreed Procedure, whenever a Party is required to submit data via a Type 1 Channel, then the person from that Party must be duly authorised to send that data as set out in Agreed Procedure 11 "Market System Operation, Testing, Upgrading and Support".

For any values in MW or MWh for an Interconnector, positive values relate to imports to the Pool and negative values relate to exports from the Pool.

3. REGISTRATION OF INTERCONNECTOR ENTITIES

An Interconnector is registered in accordance with Agreed Procedure 1 "Participant and Unit Registration and Deregistration". As part of this process, the Interconnector Owner determines the identity of the Interconnector Administrator and the parties responsible for the registration of the Interconnector Residual Capacity Unit and the Interconnector Error Unit.

The Interconnector Owner maintains the Interconnector Registration Data in accordance with Agreed Procedure 1 "Participant and Unit Registration and Deregistration".

The Interconnector Administrator may also maintain the Interconnector Technical Data which is a subset of the Interconnector Registration Data, in accordance with this Agreed Procedure.

3.1 AVAILABLE TRANSFER CAPACITY

The Available Transfer Capacity of an Interconnector is determined by the relevant Interconnector Administrator and is notified to the Market Operator by 9:30 on TD-2.

Revisions to Available Transfer Capacity after the initial notifications shall be notified to the Market Operator by the relevant Interconnector Administrator.

3.2 INTERCONNECTOR UNIT NOMINATIONS

3.2.1 Pre Gate Window Closure

Interconnector Users ~~shall~~ may submit Commercial Offer Data to each Gate Window for their one Interconnector Units for the corresponding each Interconnector prior to Gate Closure. Each Interconnector Unit shall be defined by the following data items:

- The Interconnector to which the Interconnector Unit is registered;
- The Participant identifier; and
- A single Interconnector Unit Gate Window Identifier with which the Interconnector Unit is associated.

~~The A Data Transaction containing~~ Commercial Offer Data for Interconnector Units shall include:

- ~~An identifier~~ Identification of to which Interconnector Unit the Commercial Offer Data relates;
- An identifier of the Gate Window to which the Data Transaction relates;
- ~~Up to ten Price Quantity Pairs per Interconnector Unit per Trading Period in the relevant Trading Day; and;~~
- Maximum Interconnector Unit Import Capacity and Maximum Interconnector Unit Export Capacity per Trading Period in the Optimisation Time Horizon which includes the entire relevant Trading Day.

The Market Operator shall reject any Commercial Offer Data submission for any Interconnector Unit where the identifier of the Gate Window as submitted within the associated Data Transaction does not correspond with the Interconnector Unit Gate Window Identifier.

In accordance with the Code, where no valid Commercial Offer Data is submitted in respect of an Interconnector Unit in a Trading Period, the Maximum Interconnector Unit Import

Capacity and the Maximum Interconnector Unit Export Capacity ~~is shall be set to zero by the~~ [Market Operator](#).

The Interconnector Administrator shall submit the Active Interconnector Unit Capacity Holding Data for each Interconnector Unit prior to Gate Closure consistent with the ATC in each direction.

3.2.2 Calculation of Modified Interconnector Unit Nominations

The Market Operator shall by 11:00 on the day prior to the start of the Trading Day determine Interconnector Unit Nominations for each Interconnector Unit from the Ex-Ante Indicative MSP Software Run based on the Active Interconnector Unit Capacity Holding, Commercial Offer Data and Interconnector Technical Data. In calculating the Interconnector Unit Nominations, the Ramp Rate for each Interconnector Unit will be set to a value of 99999.9 MW/min, and the relevant Accepted Aggregate Interconnector Ramp Rate will be applied as a limit across all corresponding Interconnector Units.

The Market Operator shall calculate the Modified Interconnector Unit Nominations (MIUNs) by applying the appropriate Aggregate Interconnector Ramp Rate and with respect to the rules in Appendix 2 – Calculation of Modified Interconnector Unit Nominations [Calculation of Modified Interconnector Unit Nominations](#). The Market Operator shall in calculating the Modified Interconnector Unit Nominations (MIUNs) take into account the latest Available Transfer Capacity for the relevant Interconnector for the Trading Day.

The Market Operator shall by 12:00 on the day prior to the start of the Trading Day submit to each Interconnector User in respect of its Interconnector Units the corresponding MIUNs.

The Market Operator shall by 12:00 on the day prior to the start of the Trading Day submit Aggregate Modified Interconnector Unit Nomination (AMIUNs) to the relevant System Operator, which represent aggregate import and export MW values per Trading Period over each Interconnector registered in their Jurisdiction.

3.3 SO INTERCONNECTOR TRADES

The System Operator using the Interconnector Residual Capacity Unit shall be entitled under the terms of the Code, subject to commercial agreement, to make SO Interconnector Trades across the relevant Interconnector in either direction, using any available Interconnector capacity which is not allocated to Interconnector Users under the aggregate of the prevailing Modified Interconnector Unit Nominations.

SO Interconnector Trades must be conducted after Gate Closure and after the calculation of the MIUNs by the [Market Operator](#) ~~and~~ the submission to the relevant System Operator of the Aggregate Modified Interconnector Unit Nominations.

3.4 POST GATE CLOSURE REDUCTIONS IN ATC

In the event of a reduction in the magnitude of the Available Transfer Capacity (this includes reductions in the absolute magnitude of the Maximum Import Available Transfer Capacity and/or the Maximum Export Available Transfer Capacity) after Gate Closure the Interconnector Administrator shall notify the Market Operator of the revised Available Transfer Capacity. In addition, the Modified Interconnector Unit Nominations shall be recalculated by the Market Operator and re-issued to each Interconnector User for each of their Interconnector Units.

The Modified Interconnector Unit Nominations for each Interconnector Unit shall be revised to the minimum extent necessary, taking into account any SO Interconnector Trades which are in the opposite direction to the aggregate of the MIUNs, but not taking into account any SO Interconnector Trades which are in the same direction to the aggregate of the MIUNs.

The Modified Interconnector Unit Nominations shall be recalculated by the Market Operator in accordance with the rules in [Appendix 2 - Calculation of Modified Interconnector Unit Nominations](#). The Market Operator shall submit the revised MIUNs to the relevant Interconnector Users and the aggregate of the MIUNs to the relevant System Operator.

3.5 POINT OF APPLICATION OF VALUES

All values which are expressed in MW, MW/min or MWh and which are not Loss-Adjusted in relation to an Interconnector, Interconnector Units, Interconnector Residual Capacity Units or Interconnector Error Units shall be applicable at the point of Connection.

4. PROCEDURE DEFINITION

4.1 INTERCONNECTOR REGISTRATION DATA MAINTENANCE

The Interconnector Owner or Interconnector Administrator as appropriate shall inform the Market Operator of changes to the Interconnector Technical Data prior to [the EA1 Gate Window Closure](#). Any submission of Interconnector Technical Data which uses the Type 1 Communication Channel shall be made at least five Working Days before [the EA1 Gate Window Closure](#) for the first Trading Day for which the relevant data shall be effective. In such circumstances, the Market Operator shall confirm receipt of the data by return fax by 11:00 on the next Working Day. In the absence of receipt of such confirmation, the relevant Party shall re-submit the relevant data.

Within 1 Working Day of receipt or by [TD+1 12:00 hours on the day prior to the Trading Day](#), whichever is the earlier, the Market Operator shall submit the revised Interconnector Technical Data to the relevant System Operator.

4.2 INITIAL AVAILABLE TRANSFER CAPACITY NOTIFICATION

The Interconnector Administrator determines the Available Transfer Capacity (consisting of the Maximum Import Available Transfer Capacity and the Maximum Export Available Transfer Capacity) for each Interconnector for each Trading Period in the Optimisation Time Horizon. ATC will be determined and submitted to the Market Operator by 09.30 on the day prior to Gate Closure (TD-2) according to the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code.

The Market Operator shall publish ATCs via the MPI and the Market Operator Website by 10.00 on the day prior to Gate Closure (TD-2).

4.3 UPDATES TO AVAILABLE TRANSFER CAPACITY

Whenever there is a change to the ATC on an Interconnector after the initial notification in [4.23.2](#), the relevant Interconnector Administrator shall notify the System Operator. Where any change in ATC occurs prior to Gate Closure, the relevant Interconnector Administrator shall submit the revised ATC to the Market Operator as soon as possible, in accordance with the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code. The relevant Interconnector Administrator for each corresponding Interconnector shall submit the final ATCs to the Market Operator by TD+1 12:00 hours, in accordance with the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code.

Whenever there is a change in ATC prior to Gate Closure then the Interconnector Administrator shall take account of such change and if possible recalculate and resubmit the Active Interconnector Unit Capacity Holdings prior to Gate Closure.

Whenever there is a reduction in ATC, from the ATC used to produce the final Active Interconnector Unit Capacity Holdings, prior to the calculation of the MIUNs by the Market Operator, then where possible, the Market Operator shall take into account the reduction in ATC in calculating the MIUNs (in paragraph [4.43.4](#) of this Agreed Procedure).

Whenever there is a change in ATC after the initial calculation of MIUNs, then the Market Operator shall recalculate revised MIUNs, taking into account the corresponding change in ATC. The revised MIUNs shall each be in the same direction and must not exceed in absolute magnitude the value of the corresponding IUNs.

The Market Operator shall submit:

1. as soon as possible after identifying the change in ATC, the revised MIUNs to the relevant Interconnector Users using MITS.

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2. as soon as possible after receiving notification of the reduction in ATC, the Aggregate MIUNs to the relevant System Operator.

4.4 MODIFIED INTERCONNECTOR UNIT NOMINATIONS

Prior to Gate Closure, the Interconnector Administrator shall submit Active Interconnector Unit Capacity Holding Data for the relevant Interconnector to the Market Operator using the Active Interconnector Unit Capacity Holding Data Transaction set out in Appendix K of the Code.

The Market Operator shall notify Interconnector Users of their Active Interconnector Unit Capacity Holdings by TD-1 10:30 hours via the MPI.

The Market Operator shall complete the Ex-Ante Indicative MSP Software Run to determine the Ex-Ante Indicative Market Schedule (IMS) by TD-1 11:00 hours. For each Interconnector Unit, the MSP Software will use the corresponding Active Interconnector Unit Capacity Holdings, Commercial Offer Data for the Interconnector Units, a Ramp Rate for each Interconnector Unit set to a value of 99999.9 MW/min, and the Accepted Aggregate Interconnector Ramp Rate for the relevant Interconnector, applied as a limit across all Interconnector Units.

The Interconnector Unit Nominations are equal to the indicative value of MSQs (for the corresponding Interconnector Units) that are calculated by Ex-Ante Indicative MSP Software Run.

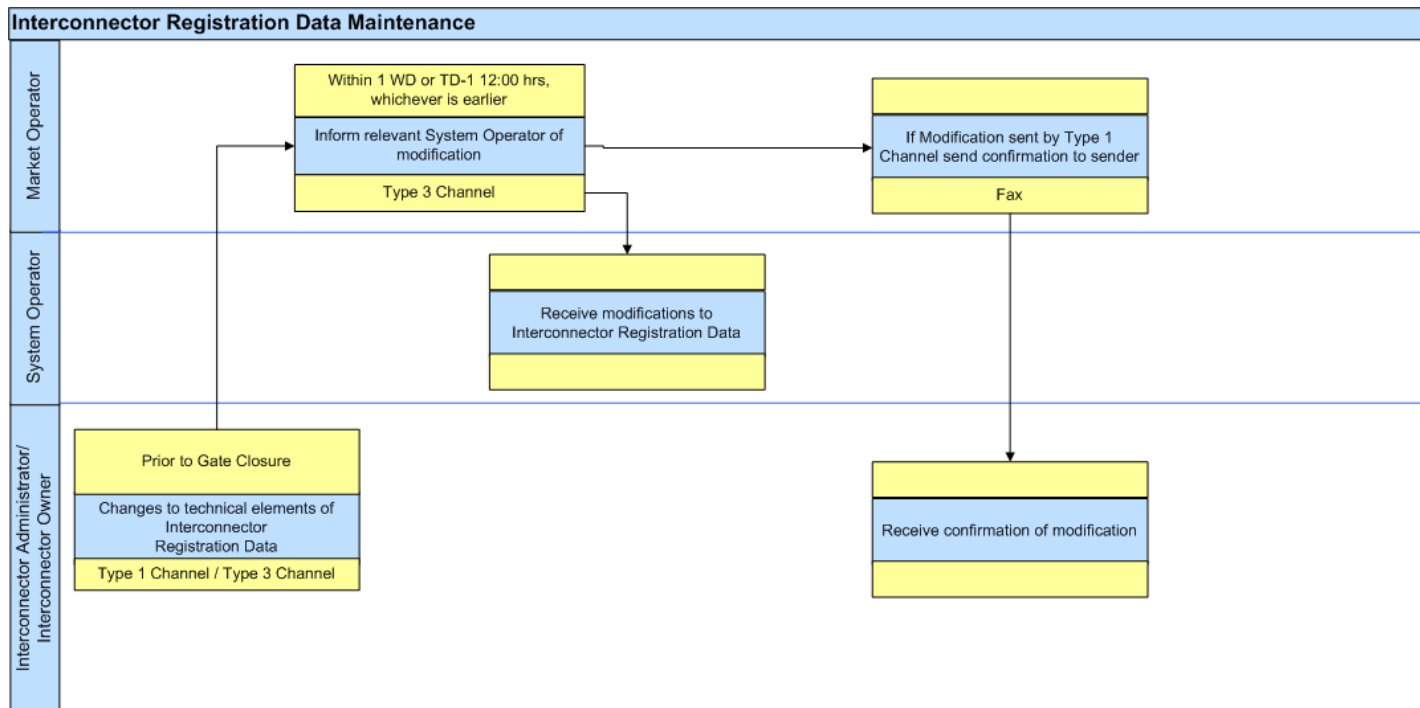
The Market Operator shall calculate the MIUNs (based on the Interconnector Unit Nominations) and submit such relevant calculated values to Interconnector Users by TD-1 12:00.

The Market Operator shall submit the Aggregate Modified Interconnector Unit Nominations for each Interconnector to the relevant System Operator by TD-1 12:00.

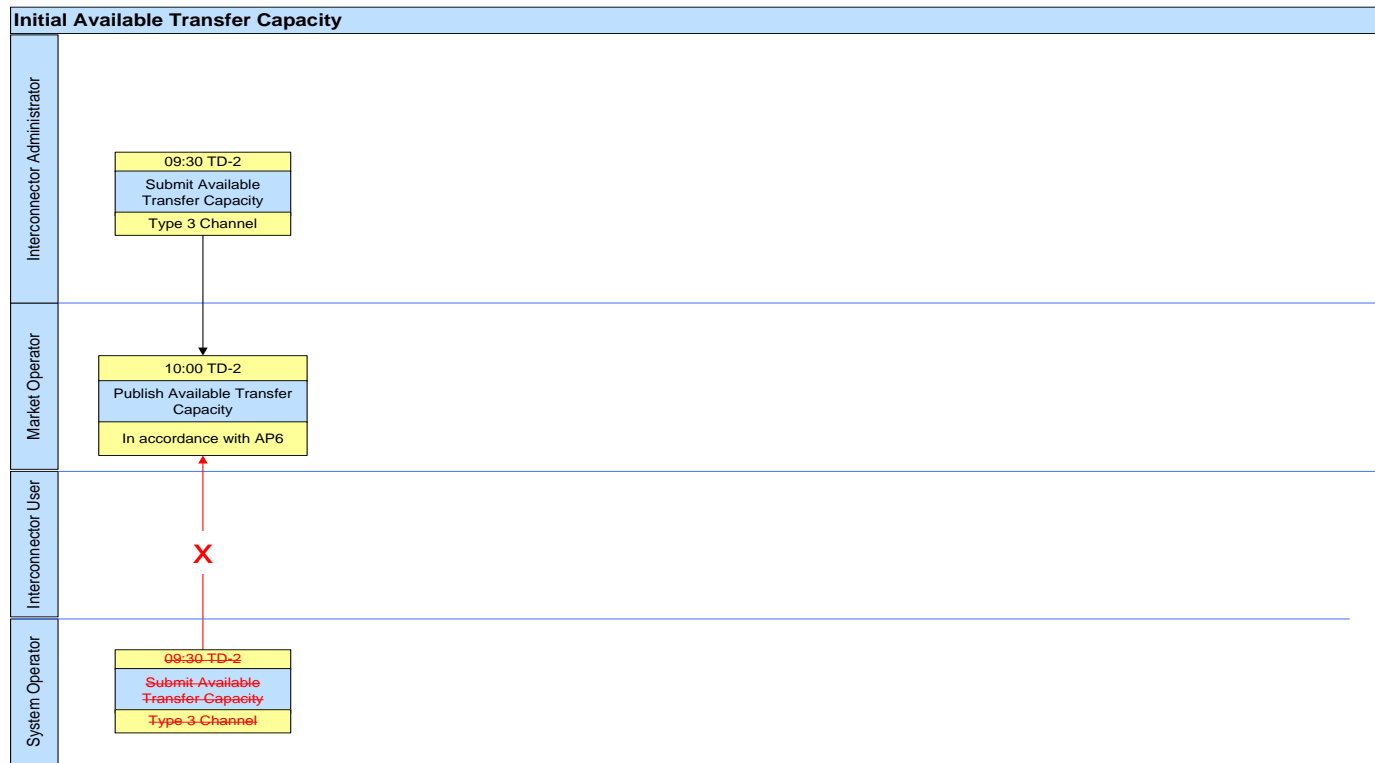
5. SWIMLANE DIAGRAM

These swimlanes are provided as an illustration of the Procedural Steps. The Procedural Steps take precedence, in the event of conflict between the swimlanes and the Procedural Steps.

5.1 INTERCONNECTOR REGISTRATION DATA MAINTENANCE

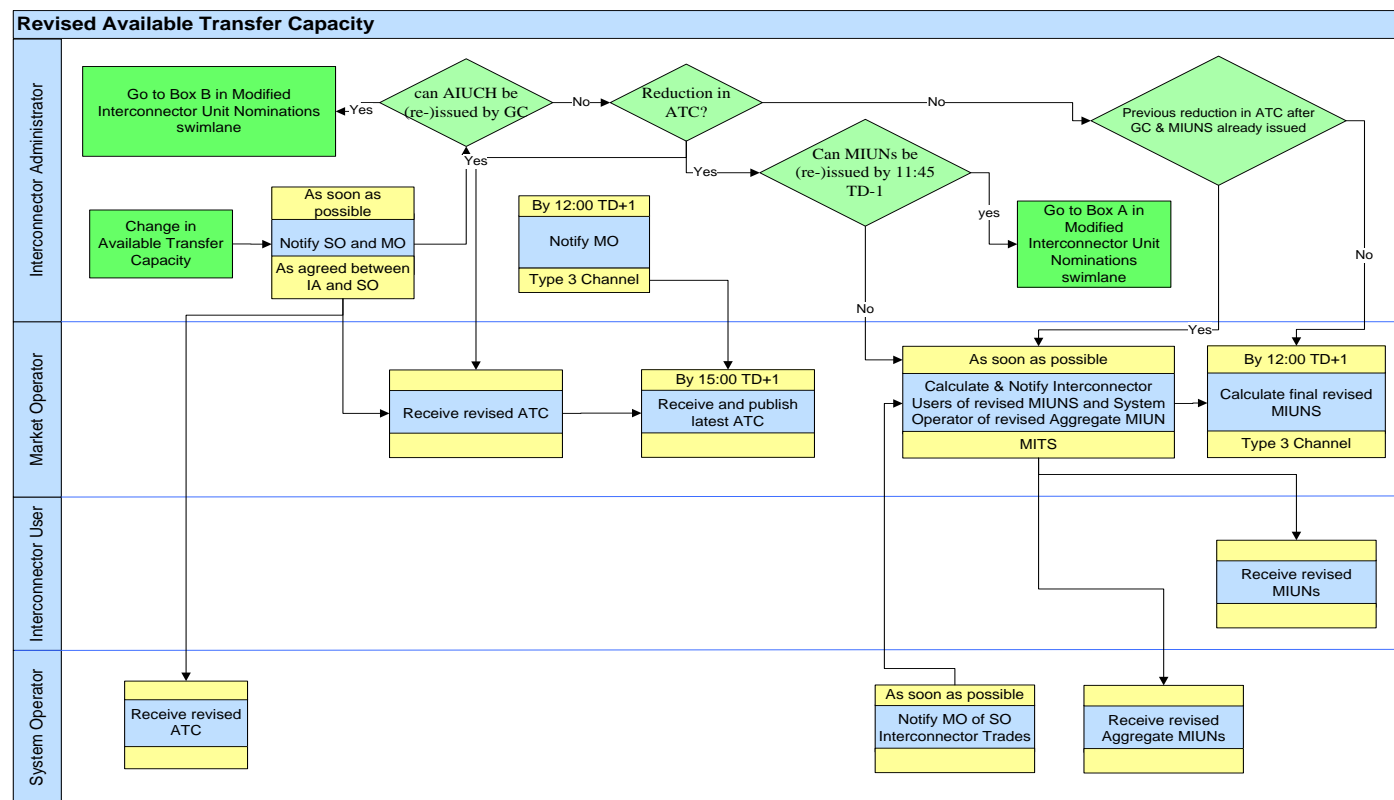


5.2 SWIMLANE - INITIAL AVAILABLE TRANSFER CAPACITY NOTIFICATION



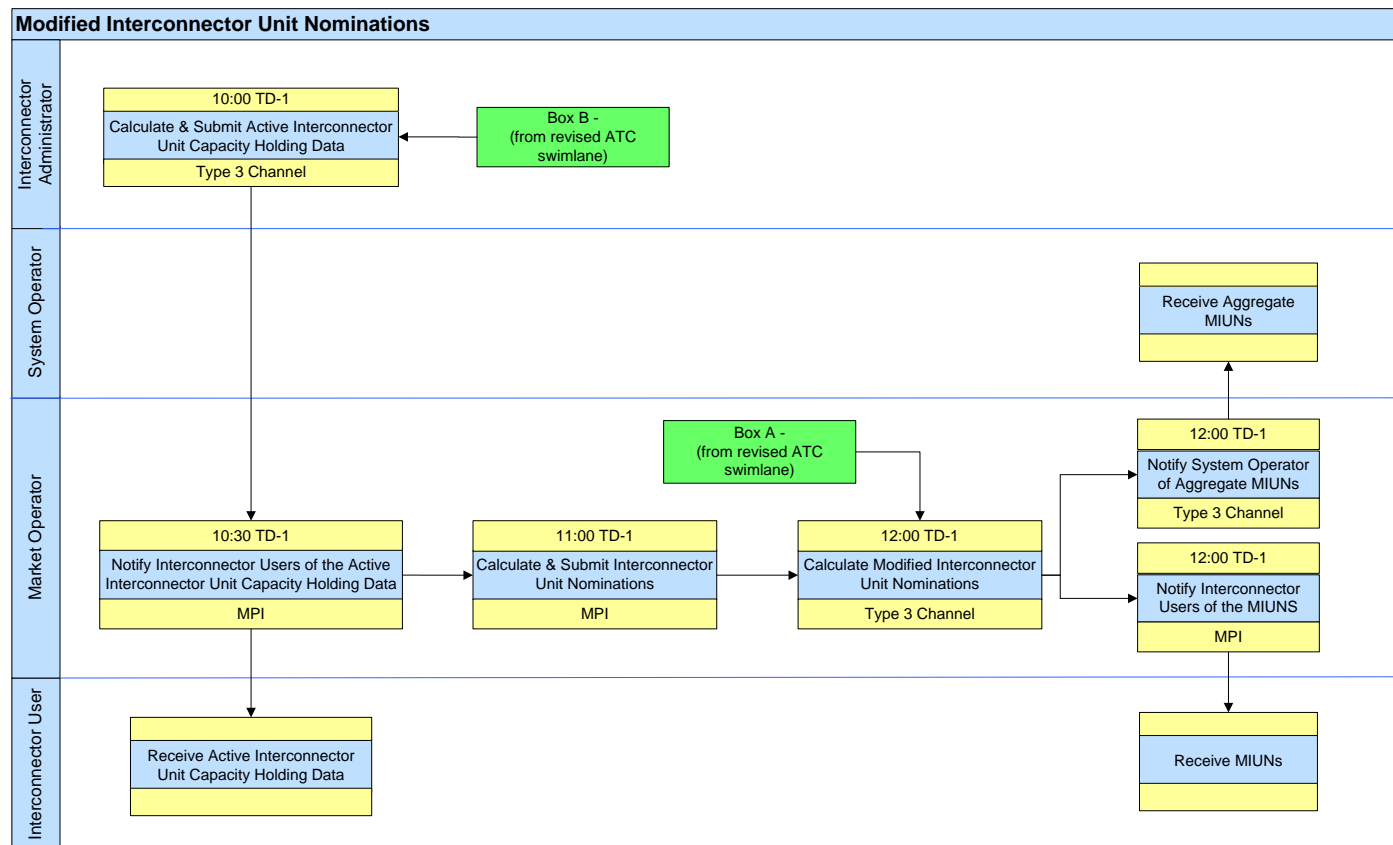
ATC – Available Transfer Capacity, AIUCH = Active Interconnector Unit Capacity Holding, MIUN – Modified Interconnector Unit Nomination

5.3 SWIMLANE – UPDATES TO AVAILABLE TRANSFER CAPACITY



ATC – Available Transfer Capacity, AIUCH = Active Interconnector Unit Capacity Holding, MIUN – Modified Interconnector Unit Nomination

5.4 MODIFIED INTERCONNECTOR UNIT NOMINATIONS



6. PROCEDURAL STEPS

6.1 INTERCONNECTOR REGISTRATION DATA MAINTENANCE

#	Procedural Step	Timing	Method	By/ From	To	Transaction
1	Submit to Market Operator modified Interconnector Technical Data on change of data.	Prior to Gate Closure	Type 1 Channel / Type 3 Channel	Interconnector Administrator / Interconnector Owner	Market Operator	Interconnector Technical Data
2	If the modification has been received via Type 1 Channel then send confirmation by fax to sender	By next WD 11:00hours	Fax	Market Operator	Interconnector Administrator / Interconnector Owner	
3	Submit modified Interconnector Registration to System Operator.	Earlier of within 1 WD of receipt or TD-1 12:00hrs	Type 3 Channel	Market Operator	System Operator	Interconnector Technical Data

6.2 INITIAL AVAILABLE TRANSFER CAPACITY SUBMISSION

#	Procedural Step	Timing	Method	By/ From	To	Transaction
1	Determination of the Available Transfer Capacity (ATC) by the relevant Interconnector Administrator for each Interconnector and submission to the Market Operator.	09:30, TD-2	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity Data Transaction as set out in Appendix K of the Code.
2	Publication of the ATC in accordance with Agreed Procedure 6 "Publications"	10:00, TD-2	Market Operator Website	Market Operator	Parties	Agreed Procedure 6 "Publications"

6.3 UPDATES TO AVAILABLE TRANSFER CAPACITY

#	Procedural Step	Timing	Method	By/ From	To	Transaction
1	Identify a reduction in Available Transfer Capacity on an Interconnector Go to Step 2 and Step 5	As occurs	-	Interconnector Administrator	-	
2	If ATC change prior to Gate Closure go to step 3 Otherwise go to step 4	As occurs		Interconnector Administrator	Market Operator	
3	Submit revised ATC to Market Operator Stop	As soon as possible after reduction in ATC	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity Data Transaction (Appendix K of the Code)
4	Submit final ATC to Market Operator Stop	By TD+1 12:00 hours	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity Data Transaction (Appendix K of the Code)
5	If there is sufficient time to use the revised ATC in calculation and submission of AIUCH prior to Gate Closure go to Step 6 Else, if there is sufficient time to use the revised ATC in calculation of MIUNs prior to 12:00 TD-1 go to step 7 Else go to step 8	-	-	Interconnector Administrator	-	
6	Go to Step 2 in section 6.45-4 - Modified Interconnector Unit Nominations Modified Interconnector Unit Nominations					

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#	Procedural Step	Timing	Method	By/ From	To	Transaction
7	Go to Step 5 in section 6.45-4 Modified Interconnector Unit Nominations Modified Interconnector Unit Nominations					
8	Calculate revised MIUNs based on the revised ATC and submit the MIUNs to the relevant Interconnector Users	As soon as possible	MITs	Interconnector Administrator	Interconnector User	
9	Calculate revised Aggregate MIUNs based on the revised ATC and submit the MIUNs to the relevant System Operator	As soon as possible	CMS	Market Operator	System Operator	

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6.4 MODIFIED INTERCONNECTOR UNIT NOMINATIONS

	Procedural Step	Timing	Method	By/ From	To	Transaction
1	Submission of Active Interconnector Unit Capacity Holdings to the Market Operator	By 10:00, TD-1	Type 3 Channel	Interconnector Administrator	Market Operator	Active Interconnector Unit Capacity Holding Data Transaction (Appendix K of the Code)
2	If there is a reduction in ATC on the Interconnector prior to Gate Closure and after submission of the Active Interconnector Unit Capacity Holdings to the Market Operator, where possible recalculate and submit the revised Active Interconnector Unit Capacity Holdings	By 10:00, TD-1	Type 3 Channel	Interconnector Administrator	Market Operator	Active Interconnector Unit Capacity Holding Data Transaction (Appendix K of the Code)
3	Submission of Active Interconnector Unit Capacity Holdings to Interconnector Users	By 10:30, TD-1	MPI	Market Operator	Interconnector User	
4	Market Operator determines the Interconnector Unit Nominations from the Ex-Ante Indicative MSP Software Run	By 11:00, TD-1		Market Operator		

	Procedural Step	Timing	Method	By/ From	To	Transaction
5	Market Operator calculates MIUNs (based on the IUNs and any revised ATCs that have occurred after Gate Closure)	By 12:00, TD-1	MITS	Market Operator		
6	Submission of MIUNs to Interconnector Users	By 12:00, TD-1	MPI	Market Operator	Interconnector User	Modified Interconnector Unit Nominations Transaction (Appendix K of the Code)
7	Submission of Aggregate Modified Interconnector Unit Nominations to relevant System Operator	By 12:00, TD-1	Type 3 Channel	Market Operator	System Operator	

APPENDIX 1: DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Accepted	As defined in the Code
Active Interconnector Unit Capacity Holding	As defined in the Code
Active Interconnector Unit Capacity Holding Data	As defined in the Code
Active Interconnector Unit Export Capacity Holding	As defined in the Code
Active Interconnector Unit Import Capacity Holding	As defined in the Code
Aggregate Interconnector Ramp Rate	As defined in the Code
Aggregate Modified Interconnector Unit Nomination	As defined in the Code
Agreed Procedure	As defined in the Code
Available Transfer Capacity	As defined in the Code
Capacity Payment	As defined in the Code
Change Point	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations Calculation of Modified Interconnector Unit Nominations
Code	As defined in the Code
Commercial Offer Data	As defined in the Code
Ex-Ante Indicative Market Schedule	As defined in the Code
Ex-Ante Indicative MSP Software Run	As defined in the Code
Gate Window Closure	As defined in the Code
Interconnector	As defined in the Code

Interconnector Administrator	As defined in the Code
Interconnector Error Unit	As defined in the Code
Interconnector Owner	As defined in the Code
Interconnector Registration Data	As defined in the Code
Interconnector Residual Capacity Unit	As defined in the Code
Interconnector Technical Data	As defined in the Code
Interconnector Unit	As defined in the Code
Interconnector Unit Nominations	As defined in the Code
Interconnector User	As defined in the Code
Interconnector Technical Data	As defined in the Code
Intersection	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations Calculation of Modified Interconnector Unit Nominations
Logical Interconnector	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations Calculation of Modified Interconnector Unit Nominations
Market Operator	As defined in the Code
Market Operator Website	as defined in Agreed Procedure 1 "Participant and Unit Registration and Deregistration"
Market Participant Interface	as defined in Agreed Procedure 1 "Participant and Unit Registration and Deregistration"
Market Schedule Quantity	As defined in the Code
Maximum Export Available Transfer Capacity	As defined in the Code
Maximum Export Available Transfer Capacity	As defined in the Code

Maximum Interconnector Unit Export Capacity	As defined in the Code
Maximum Interconnector Unit Import Capacity	As defined in the Code
Modified Interconnector Unit Nominations	As defined in the Code
Minimum Interconnector Export Level	As defined in the Code
Minimum Interconnector Import Level	As defined in the Code
No Load Cost	As defined in the Code
Optimisation Time Horizon	As defined in the Code
Participant	As defined in the Code
Party	As defined in the Code
Pool	As defined in the Code
Price Quantity Pair	As defined in the Code
Quantity	As defined in the Code
Ramp Rate	As defined in the Code
Regulatory Authorities	As defined in the Code
Run-Through	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations Calculation of Modified Interconnector Unit Nominations
Settlement Period	As defined in the Code
Single Electricity Market	As defined in the Code
Start Up Costs	As defined in the Code
SO Interconnector Export Quantity	As defined in the Code
SO Interconnector Import Quantity	As defined in the Code

SO Interconnector Trade	As defined in the Code
System Operator	As defined in the Code
Trading Day	As defined in the Code
Trading Period	As defined in the Code
Trip	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations Calculation of Modified Interconnector Unit Nominations
Unit	As defined in the Code

ABBREVIATIONS

AMIUN	Aggregate Modified Interconnector Unit Nomination
ATC	Available Transfer Capacity
CMS	Central Market Systems
IUN	Interconnector Unit Nomination
MIUN	Modified Interconnector Unit Nomination
MPI	Market Participant Interface
MSQ	Market Schedule Quantity
SEM	Single Electricity Market
TD	Trading Day

APPENDIX 2: CALCULATION OF MODIFIED INTERCONNECTOR UNIT NOMINATIONS

INTRODUCTION

This Appendix describes in general terms the rules used by the Market Operator to calculate Modified Interconnector Unit Nominations from the Interconnector Unit Nominations.

DEFINITIONS

In this Appendix:

“Change Point”	is a point that occurs whenever any Interconnector Unit Nomination changes or whenever the Aggregate Interconnector Ramp Rate changes.
“Intersection”	means the situation where the Interconnector is dispatched upwards but before the target can be achieved the Interconnector must be dispatched downwards in order to achieve the next Change Point's target.
“Logical Interconnector”	means the interconnector in which electricity flows in one direction, i.e. electricity flowing from Scotland to Northern Ireland will form one logical interconnector and electricity flowing from Northern Ireland to Scotland will form another logical interconnector.
“Run-Through”	Means the situation where the Interconnector is dispatched upwards but cannot achieve its target by the next Change Point, and cannot achieve the Change Point's expected position at the Change Point boundary.
“Trip”	Means a technical failure on an Interconnector which causes a reduction in the magnitude of the Available Transfer Capacity in either direction.
“Deadband”	Means the energy band between the Minimum Interconnector Import Level and the Minimum interconnector Export Level
“ Dominant Direction”	Is the direction of the net Interconnector Unit Nominations in the last Trading Period in which there was an interconnector flow i.e. import or export

RULES FOR THE CALCULATION OF THE MODIFIED INTERCONNECTOR UNIT NOMINATIONS

The value of each Modified Interconnector Unit Nomination must be in the same direction and must not exceed in absolute magnitude the relevant Interconnector Unit Nomination for any Interconnector Unit in any Trading Period.

The ramp rate for the Interconnector applies to the sum of all the Interconnector Unit Nominations and not to the individual Interconnector Unit Nominations.

The Interconnector Ramp Rate is divided up pro-rata to Active Interconnector Unit Capacity Holdings of equal priority. Active Interconnector Unit Capacity Holdings of equal priority must start and finish their ramp at the same time.

Where an Interconnector Unit Nomination for a Trading Period is less than the Interconnector Unit Nomination for the previous Trading Period, the Interconnector Unit Nomination must be ramped in order to reach the next Interconnector Unit Nomination by the Settlement Period boundary. This ramping may take place over any number of Trading Periods, including Trading Periods within the previous day if necessary.

Where an Interconnector Unit Nomination for a Trading Period is greater than the Interconnector Unit Nomination for the previous Trading Period the Interconnector Unit Nomination must not start ramping until the Trading Period boundary. This ramping may take place over any number of Trading Periods.

Where multiple Interconnector Unit Nominations for a particular Trading Period change in a manner that results in no change to the sum of all the Interconnector Unit Nominations for that Trading Period, the ramps shall be instantaneous.

The Interconnector ramps between 0 and Minimum Interconnector Import Level instantaneously.

The Interconnector ramps between 0 and Minimum Interconnector Export Level instantaneously.

If the total Interconnector Unit Nominations for a Trading Period are in the Deadband then each of the Interconnector Unit Nominations should be considered to be zero for the purpose of calculating the Modified Interconnector Unit Nominations.

Any instant ramp resulting from the Interconnector passing through Minimum Interconnector Export Level, OMW or Minimum Interconnector Import Level should be allocated to the individual Interconnector Unit Nominations that are ramping at the time of the instant ramp.

Any Interconnector Unit Nominations moving in opposition to the net Interconnector flow are deemed to move instantaneously on the Change Point boundary. The instant ramp is allocated to Interconnector Unit Nominations moving with the Interconnector on a pro-rata basis.

If a Trip or reduction rate in the ATC occurs on a Logical Interconnector then all Interconnector Unit Nominations on that Logical Interconnector ramp instantly to the Logical Interconnector's ATC.

The sum of the Interconnector Unit Nominations for a Logical Interconnector cannot exceed, in absolute terms, the ATC for that Logical Interconnector.

Where the sum of the Interconnector Unit Nominations net to exactly zero, the following rules apply:

If Interconnector Unit Nominations exist in both directions and in each direction the sum of the Interconnector Unit Nominations are equal, but are within the interconnector Deadband, then the Interconnector unit nominations used for the calculation of Modified Interconnector Unit Nominations in both directions will be reduced to zero and the net flow will be OMW.

If Interconnector Unit Nominations exist in both directions and in each direction the sum of the Interconnector Unit Nominations are equal, but outside the Deadband, then the Interconnector Unit Nomination used for the calculation of the Modified Interconnector Unit Nominations in the Dominant Direction will remain unchanged. The Interconnector Unit Nominations used for the calculation of the Modified Interconnector Unit Nomination in the opposite direction will be reduced by the Minimum Interconnector Export or Import level on a pro-rata basis.

In all cases System Operator trades will be reduced first as required to minimise the effect on Interconnector Unit Nominations.