European Network of Transmission System Operators for Electricity

entsoe

All TSOs' proposal for a Methodology for Calculating Scheduled Exchanges resulting from single intra-day coupling in accordance with Article 56 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management

01/12//2018

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Contents

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All Transmission System Operators taking into account the following:

Whereas

1. This document is a common proposal developed by all Transmission System Operators (hereafter referred to as "**TSOs**"), which intend to calculate Scheduled Exchanges resulting from single intraday coupling (hereafter referred to as "**SIDC**"). The document provides a methodology for calculating Scheduled Exchanges resulting from the SIDC ("hereafter referred to as "**ID SEC Methodology**") in accordance with Article 56 of Commission Regulation (EU) 2015/1222 establishing a guideline on Capacity Allocation and Congestion Management (hereafter referred to as "**CACM Regulation**"). This proposal is hereafter referred to as "**ID SEC Proposal**".

2. The ID SEC Proposal takes into account the general principles, goals and other methodologies reflected in CACM Regulation. The goal of CACM Regulation is the coordination and harmonisation of capacity calculation and allocation in the day-ahead and intraday cross-border markets.

3. The ID SEC Proposal, in line with Article 56 of CACM Regulation, accommodates situations where there are more than one Nominated Electricity Market Operator (hereafter referred to as "NEMO") designated and/or offering intraday trading services in a particular geographic area. In addition, according to Article 4(1) of CACM Regulation, multiple NEMOs can be designated to perform SIDC in a Member State. For each NEMO, a NEMO trading hub shall be assigned. Where multiple NEMOs operate within a geographic area, there shall be multiple NEMO trading hubs within that geographic area.

4. The ID SEC Proposal shall consider situations where the bidding zone is equal to the scheduling area, as well as where there are multiple scheduling areas within a bidding zone.

5. This ID SEC Proposal provides for the calculation of Scheduled Exchanges between bidding zones, scheduling areas and NEMO trading hubs.

6. According to Article 9(9) of CACM Regulation, the proposed timescale for the implementation of the proposed ID SEC Methodology shall be included in the ID SEC Proposal.

7. The implementation of ID SEC Methodology uses the solutions developed for algorithm proposal in accordance with Article 37 of CACM Regulation (here after referred to as 'algorithm methodology'), arrangements developed in accordance with Article 57 of CACM Regulation for more than one NEMO within a Bidding Zone and arrangements developed for clearing and settlement between central counter parties and shipping agents in accordance with Article 77 of CACM Regulation. Thus the implementation should happen in co-operation with NEMOs applying common solutions to ensure consistency and alignment in flow calculations.

8. According to Article 9(9) of CACM Regulation, the expected impact of the proposed ID SEC Methodology, on the objectives of CACM Regulation, shall be described.

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- Article 3(a) of CACM Regulation aims at promoting effective competition in the generation, trading and supply of electricity.
    - The ID SEC Methodology, as it will use directly the results from SIDC does not impact on competition in the generation, trading and supply of electricity.

- Article 3(b) of CACM Regulation aims at ensuring optimal use of the transmission infrastructure.
    - The Scheduled Exchanges resulting from the ID SEC Methodology are derived directly from the results of SIDC i.e. they are based on the trades executed in the SIDC and as such allow for the optimal allocation of transmission capacity.

- Article 3(c) of CACM Regulation aims at ensuring operational security.
    - The ID SEC Methodology applies directly the results from SIDC. The ID SEC Methodology shall be initiated as post SIDC and shall have no influence on operational security under CACM Regulation.

- Article 3(d) of CACM Regulation aims at optimising the calculation and allocation of cross zonal capacity.
    - Scheduled Exchanges resulting from SIDC shall not modify the results of the single intraday market coupling session.

- Article 3(e) of CACM Regulation aims at ensuring fair and non-discriminatory treatment of TSOs, NEMOs, the Agency, regulatory authorities and market participants.
    - The ID SEC Methodology shall be fair, transparent and based on the results of SIDC.

- Article 3(f) of CACM Regulation aims at ensuring and enhancing the transparency and reliability of information.
    - The ID SEC Methodology comprises a step-wise, bottom-up approach (from each trade between NEMO trading hubs to be aggregated to scheduling area and to bidding zone) for the calculation of Scheduled Exchanges which ensures and enhances the transparency and reliability of the ID SEC Methodology.

- Article 3(g) of CACM Regulation aims at contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union.
    - The ID SEC Methodology shows clear cross-Network Code thinking in order to contribute to the efficient development of common European intraday electricity market. The ID SEC Methodology, through its construction facilitates the efficient long-term operation and development of the European transmission system.

- Article 3(h) of CACM Regulation aims at respecting the need for a fair and orderly market and fair and orderly price formation.
    - The ID SEC Methodology does not interfere with or compromise a fair and orderly market and price formation as it has no influence on the results of SIDC.

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- Article 3(i) of CACM Regulation aims at creating a level playing field for NEMOs.
  - The ID SEC Methodology creates a level playing field for NEMOs as it has no influence on the results of SIDC. Additionally, the ID SEC Methodology supports scenarios where there are multiple NEMOs within a bidding zone or scheduling area.

- Article 3(j) of CACM Regulation aims at providing non-discriminatory access to cross-zonal capacity.
  - The ID SEC Methodology does not interfere with the provision nor allocation of cross-zonal capacity.

SUBMIT THE FOLLOWING ID SEC METHODOLOGY TO ALL REGULATORY AUTHORITIES:

Article 1 - Subject matter and scope

1. All TSOs lay down in this ID SEC Proposal the requirements to calculate Scheduled Exchanges resulting from SIDC, the information required from all NEMOs for the calculation of Scheduled Exchanges.

2. The outputs of the applied ID SEC Methodology shall be, for each market time unit:
   a) Scheduled Exchanges between bidding zones
   b) Scheduled Exchanges between scheduling areas
   c) Scheduled Exchanges between NEMO trading hubs

3. The scope of the ID SEC Methodology does not extend to the assignment of roles and responsibilities to specific parties. Also the governance framework for specific roles or responsibilities is out of scope of the ID SEC Proposal. These aspects shall be defined by the TSOs, where required in accordance with Article 8(2)(g) of CACM Regulation.

Article 2 - Definitions and interpretation

1. For the purposes of this ID SEC Proposal, terms used shall have the meaning of the definitions included in Article 2 of CACM Regulation, Commission Regulations (EU) 543/2013 and (EU) 1227/2011 as well as Article 3 of Regulation (EU) 2017/1485, with the exception of the definition of 'scheduling area'. In addition, the following definitions shall apply:

   a) 'NEMO trading hub' shall have the meaning as defined in the terms and conditions or methodologies pursuant to Article 37 and Article 45 of CACM Regulation;
   b) 'Scheduling area' means a scheduling area according to Article 3(2)(91) of the Regulation (EU) 2017/1485 with at least one NEMO trading hub;
   c) 'Scheduled Exchanges between NEMO trading hubs' means 'electricity transfer scheduled between NEMO trading hubs operating within or between scheduling areas or bidding zones', as defined in

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the ACER Decision No 08/2018 on the all NEMOs' proposal for the price coupling algorithm and the continuous trading matching algorithm;

2. The term 'Scheduled Exchange' is defined within Article 2 of CACM Regulation. For the purposes of the ID SEC Proposal, the term 'geographic area' means both scheduling area and bidding zone. The notion of 'NEMO trading hub' is required in order to ensure proper functioning of post market coupling processes under clearing and settlement arrangements where multiple NEMOs are active in a bidding zone or scheduling area in accordance with the requirements contained within Article 45 of CACM Regulation.

3. In this ID SEC Proposal, unless the context requires otherwise:
   a) the terms used apply in the context of the SIDC
   b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of this methodology; and
   c) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force.

Article 3 - List of Information Required from Relevant NEMOs

1. The Scheduled Exchanges calculation will form an integral part of the continuous trading matching algorithm pursuant to the algorithm methodology. The Scheduled Exchange Calculator shall therefore consider the requirements set forth in the methodology for the continuous trading matching algorithm pursuant to Article 37(5) of the CACM Regulation.

2. All NEMOs shall ensure that the following information is provided pursuant to the algorithm methodology and Article 43(2) of CACM Regulation, resulting from the SIDC, to all TSOs, for each market time unit:
   a. Scheduled Exchanges for each bidding zone border, between scheduling areas and between NEMO trading hubs;
   b. where relevant, Scheduled Exchanges into and out of individual relevant DC interconnectors (difference in Scheduled Exchanges in/out reflecting losses where applicable);
   c. the execution status of orders and prices per trade; and
   d. a single net position for each bidding zone participating in the SIDC and each MTU.

Article 4 - Calculation of Scheduled Exchanges between bidding zones, scheduling areas and NEMO trading hubs

1. Scheduled Exchanges between NEMO trading hubs are provided as a result of the SIDC in the form of all aggregated trades concluded between NEMO trading hubs across bidding zone borders and scheduling area borders.

2. For each trade where the source and sink area is in different scheduling areas, the shortest path rule shall be applied. This path is obtained by minimising a target function similar to the one used in the

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methodology for calculating scheduled exchanges resulting from single day-ahead coupling in accordance with article 43 of the CACM Regulation, with cost coefficients being adapted to the single intraday coupling structure.. In general a cross border trade might require the transportation of power via several paths.

3. For each trade where the source and sink area is within the same scheduling area, the trades will be concluded without impacting the scheduled exchanges between scheduling areas and/or bidding zones.

4. The Scheduled Exchanges between NEMO trading hubs shall be aggregated for the detailed output on the required level of Scheduled Exchanges pursuant to Article 3 of this ID SEC Methodology, i.e. Scheduled Exchanges between bidding zones and between scheduling areas.

5. TSOs and NEMOs shall review the cost coefficients used in the SIDC regularly, at least once every two years. NRAs shall be informed of the changes.

Article 5 - Implementation of the ID SEC Proposal

1. The TSOs shall implement the ID SEC Proposal when the intra-day market coupling operator function developed in accordance with Article 7(3) of the CACM Regulation and, where relevant, arrangements concerning more than one NEMO in accordance with Article 57 of the CACM Regulation are implemented on each bidding zone and its borders

Article 6 - Language

1. The reference language for this ID SEC Proposal shall be English. For the avoidance of doubt, where TSOs need to translate this ID SEC Proposal into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 9(14) of the CACM Regulation and any version in another language, the relevant TSOs shall be obliged to dispel any inconsistencies by providing a revised translation of this ID SEC Proposal to their relevant national regulatory authorities.

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Methodology for the Calculation of Scheduled Exchanges resulting from single intraday coupling – Explanatory Note

28 January 2019

Table of Contents

Article 56(1) of the Commission Regulation 2015/1222 establishing a Guideline on Capacity Allocation and Congestion Management (hereafter referred to as "CACM Regulation") requires that, by 16 months after the entry into force of CACM Regulation, all Transmission System Operators (hereafter referred to as "TSOs") which intend to calculate scheduled exchanges resulting from single intraday coupling (hereafter referred to as "SIDC") shall develop a proposal for a common methodology for this calculation.

The common proposal for a Methodology for calculating Scheduled Exchanges (hereafter referred to as "ID SEC Methodology") shall be subject to approval by all National Regulatory Authorities ("NRAs") as per Article 9(7)(d) of the CACM Regulation. According to Article 9(9) of the CACM Regulation, the ID SEC Methodology proposal shall be submitted to ACER in parallel with the submission to all NRAs. In accordance with Article 9(11) of the CACM Regulation where the regulatory authorities have not been able to reach agreement in due time or upon NRAs joint request, the Agency shall adopt a decision concerning the submitted proposals for terms and conditions or methodologies within six months in accordance with Article 8(1) of Regulation (EC) No 713/2009.

1. Introduction

Article 56(1) of the Commission Regulation 2015/1222 establishing a Guideline on Capacity Allocation and Congestion Management (hereafter referred to as "**CACM Regulation**") requires that, by 16 months after the entry into force of CACM Regulation, all Transmission System Operators (hereafter referred to as "**TSOs**") which intend to calculate Scheduled Exchanges resulting from single intraday coupling (hereafter referred to as "**SIDC**") shall develop a proposal for a common methodology for this calculation.

The common calculation methodology (hereafter referred to as "**ID SEC Methodology**") shall be subject to approval by all National Regulatory Authorities ("**NRAs**") as per Article 9(7)(d) of the CACM Regulation. According to Article 9(9) of the CACM Regulation, the ID SEC Methodology proposal shall be submitted to ACER in parallel with the submission to all NRAs. In accordance with Article 9(11) of the CACM Regulation where the regulatory authorities have not been able to reach agreement in due time or upon NRAs joint request, the Agency shall adopt a decision concerning the submitted proposals for terms and conditions or methodologies within six months in accordance with Article 8(1) of Regulation (EC) No 713/2009.

This document is an explanatory note accompanying the ID SEC Methodology and describing the background as the basis for the methodology.

Capitalised terms used in this document are understood as defined CACM Regulation, Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as "Regulation (EC) No 714/2009"), Commission Regulation (EU) 543/2013 and the ID SEC Methodology proposal.

2. Current Situation

In order to create a clear understanding of the requirements laid out in Article 56 of the CACM Regulation, the current situation across Europe is described.

The SIDC solution has been (partly) implemented in the EU. The target model for the European cross-zonal intraday market consists of a continuous implicit intraday market based on a single capacity management module[1] and a shared order book[2] in a one-to-one relationship as defined by the CACM Regulation, this does not consider the intraday auctions. This target model[3] has been the basis for the requirements for the intraday market and capacity allocation formulated in the CACM Regulation and within the current XBID implementation project.

[1] Defined in Article 2(40) of the CACM Regulation.
[2] Defined in Article 2(24) of the CACM Regulation.
[3] Based on this model, several TSOs and NEMOs have, via the XBID project, commenced with the build of a platform with an integrated shared order book and capacity management module.

Currently the requirements for the intraday auctions (as a way to introduce intraday cross zonal capacity pricing) are being developed by TSOs and NEMOs pursuant ACER decision 01-2019 and are, for the time being, excluded from the scope of this methodology.

2.1 Background

The SIDC is currently based on a continuous matching process of sell and buy orders. Orders are collected by NEMOs and forwarded to the Shared Order Book function for matching. In the SIDC for each order, the originating NEMO is known as well as the originating area.

During the continuous trading, each trade will have to be given a certain path individually, contrary to the Single Day-Ahead Coupling (**SDAC**) where all trades are routed at the same time during the coupling. As a result, while using the same concepts as SDAC, the cost coefficients are different in the SIDC. In addition, the scope and allocation methods in both projects are different which could lead to a different set of cost coefficients.

Remaining sections of this chapter explains overview how Scheduled Exchanges are derived from XBID solution.

2.2 Matching and capacity allocation

The matching of orders is driven by the price, however only where a path is available for the physical shipping through the grid. The matching of orders takes into account relevant constraints of the grid i.e. the available capacity and allocation constraints such as ramping limitations.

Once a preliminary match of orders has been reached, the required capacity on Bidding Zone borders or underlying Scheduling Area borders is allocated. The routing algorithm searches for the cheapest (= shortest) possible path from the NEMO trading hub of the sell order (Source) to the NEMO trading hub of the buy order (Sink).

The routing algorithm functions in a similar manner as for the SDAC, the objective function is to minimize the total costs of an exchange between the Source and Sink. As such, each bidding zone border get assigned a certain cost coefficient and each path consists of a set of bidding zone borders. The cheapest path is then selected by ensuring the minimum cost for the total exchange (which can consist of a set of paths).

During the continuous trading, each trade will have to be given a certain path individually, contrary to the SDAC where all trades are routed at the same time during the coupling. As a result, while using the same concepts, the cost coefficients are not necessarily the same in SIDC compared to the SDACbecause the scope and allocation methods in both mechanisms are different.

The result of SIDC are matched orders and, attached to each pair of matched orders, an allocation path from Source to Sink.

2.3 Enrichment of the allocation path

The full allocation path of each individual pair of matched orders is enriched to enable the physical and financial shipping, except where the buy and the sell orders are coming from the same NEMO in the same Scheduling Area.

- The enrichment assigns Central Counter Parties (hereafter referred to as "CCPs") to Source and Sink, representing the involved NEMOs in the Source and Sink.
- The enrichment assigns a Shipping Agent for the shipping between two NEMOs in the same Scheduling Area.
- The enrichment assigns a Shipping Agent to take care of the export from the Source.
- The enrichment assigns a Shipping Agent to take care of the import into the Sink.
- The enrichment assigns a Shipping Agents to take care of the import into any transit area and the export out of the transit area.

This enrichment results in the following handovers, where the source and the sink area are the same:

1. The CCP of the Selling NEMO hands over to the assigned Shipping Agent;
2. The Shipping Agent hands over to the CCP of the Buying NEMO.

This enrichment results in the following handovers, where hand over 1 and 4 only occur once and hand over 2 and 3 occur zero, one or multiple times:

1. The CCP of the Selling NEMO hands over to the assigned Shipping Agent responsible for exporting out of the area;
2. The Shipping Agent exporting out of an area (Source or transit) hands over the Shipping Agent importing into an area (transit or Sink);
3. The Shipping Agent importing into an area (transit or Sink) hands over to the Shipping Agent exporting out of the transit area; or
4. The Shipping Agent hands over to the CCP of the Buying NEMO.

2.4 Output

The SIDC will be performed by three modules, each having its own output.

- The relevant output of the Shared Order Book module (SOB)
  - Matched orders
  - Local views on the Shared Order Book

  This information is only available to the NEMOs.

- The relevant output of the Capacity Management module (CMM):
  - Capacity allocation per border
  - Net Flow per border

- The output of the Shipping Module (SM):
  - Each hand over between CCP and Shipping Agent for the Source and the Sink;
  - Each hand over between Shipping Agents on a border;
  - Each hand over between Shipping Agents within an (transit) area.

To the CCPs and Shipping Agents the above-mentioned output is provided at the detailed level of trades and includes information for clearing as well.

The SIDC delivers all basic information to calculate any kind of scheduled exchange belonging to the Net Positions resulting from the SIDC:

To the TSOs the above-mentioned output is provided after aggregation and netting is applied, per area up to the level of pairs of CCP and Shipping Agent or pair of Shipping Agents and per border up to the level of pairs of Shipping Agents.

2.5 Net Positions

As per Article 52 of the CACM Regulation, All NEMOs, as part of their MCO function, shall ensure that the continuous SIDC delivers Net Positions as a clear data item. Net Positions can be derived from the results of the SIDC:

- The Net Position of a Scheduling Area is equal to the aggregation and netting of matched buy and sell orders in the Scheduling Area;
- The Net Position of a Bidding Zone is equal to the aggregation and netting of matched buy and sell orders in the Bidding Zone.

2.6 Scheduled Exchanges

NRAs requested an amendment to the Scheduled Exchanges Methodology proposals submitted by TSOs. For the ID SEC Methodology proposal, the main actions points were: delivers all basic information to calculate any kind of Scheduled Exchange belonging to the Net Positions resulting from the SIDC:

- Regarding article 4 - Calculation of scheduled exchanges between bidding zones and scheduling areas: All NRAs ask all TSOs to improve the description of the calculation of scheduled exchanges between bidding zones and scheduling areas for the intraday timeframe in order to properly reflect the links to the scheduled exchanges between NEMO trading hubs to be introduced (see next paragraph).

- Regarding calculation of scheduled exchanges between NEMO trading hubs: As described for the day-ahead proposal, all NRAs ask all TSOs to include an additional article covering the calculation of scheduled exchanges between NEMO trading hubs, defined as "electricity transfer scheduled between NEMO trading hubs operating within or between scheduling areas or bidding zones" in the ACER Decision No 08/2018 on the NEMO's proposal for the price coupling algorithm and the continuous trading matching algorithm.
    - between CCPs in the same area; and
    - between a CCP and a Shipping Agent.

In order to address the concerns of the NRAs, TSOs have made the following changes to the ID SEC Methodology proposal:

- TSOs have clarified that the calculation of scheduled exchanges is an integral part of the SIDC, hence the requirements for this calculation will be covered in the Algorithm requirements.

The aggregation and netting shall be done at the level of Scheduling Area as well as Bidding Zones.

TSOs have clarified that the calculation of Scheduled Exchanges is a two step approach. First a 'path' is determined for each trade between a Source and Sink (NEMO trading hub). Next, all exchanges are aggregated to create the scheduled exchanges between NEMO trading hubs, scheduling areas and bidding zones.

Annex 1: list of cost coefficients used in XBID

CMM MARKET AREA

EIC Code	Long Name	Name
14YATAPG-00040-E	Austria	AT
10YCB-BE-------T	Belgium	BE
10Y1001A1001A82H	Germany	DE
10YFR-RTE-TEST-W	France	FR
45Y-DUMMY-DK1--D	Denmark West	MA_DK1
45Y-DUMMY-DK2--9	Denmark East	MA_DK2
38Y-XBID-MA-EE-Y	Estonia	MA_EE
44Y-DUMMY-FI---Y	Finland	MA_FI
10Y-DUMMY-FRE--0	Finnish-Russian Exchange Area	MA_FRE
41Y-XBID-MA-LT-D	Lithuania	MA_LT
43Y-XBID-MA-LV-E	Latvia	MA_LV
10YMA-1--------Z	Morocco	MA_MA
50Y-DUMMY-NO1--T	Norway 1	MA_NO1
50Y-DUMMY-NO2--P	Norway 2	MA_NO2
50Y-DUMMY-NO3--L	Norway 3	MA_NO3
50Y-DUMMY-NO4--H	Norway 4	MA_NO4
50Y-DUMMY-NO5--D	Norway 5	MA_NO5
10YPT-1--------R	Portugal	MA_PT
46Y-DUMMY-SE1--C	Sweden 1	MA_SE1
46Y-DUMMY-SE2--8	Sweden 2	MA_SE2
46Y-DUMMY-SE3--4	Sweden 3	MA_SE3
46Y-DUMMY-SE4--0	Sweden 4	MA_SE4
10YES-1--------Y	Spain	MA_ES
10YCB-NL-------V	Netherlands	NL

Allegato B

CMM DELIVERY AREA

EIC Code	Long Name	Name	Market Area	TSO
10YDE-VE-------2	50Hertz Transmission GmbH	50HzT	DE	50HzT
10YDE-RWENET---I	Amprion	AMP	DE	AMP
10YAT-APG------L	Austria	APG	AT	APG
10YDK-1--------W	Denmark West	DK1	MA_DK1	ENDK
10YDK-2--------M	Denmark East	DK2	MA_DK2	ENDK
10Y1001A1001A39I	Estonia	EE	MA_EE	Elering
10YBE----------2	Elia System Operator	ELIA	BE	ELIA
10YFI-1--------U	Finland	FI	MA_FI	FI
10YDOM-1001A084H	Finland-Russia Exchange Area	FRE	MA_FRE	FI
10YLT-1001A0008Q	Lithuania	LT	MA_LT	Litgrid
10YLV-1001A00074	Latvia	LV	MA_LV	AST
10YMA-ONE------O	Morocco Delivery Area	MA	MA_MA	ONE
10YNO-1--------2	Norwegian Elspot Area 1	NO1	MA_NO1	SN
10YNO-2--------T	Norwegian Elspot Area 2	NO2	MA_NO2	SN
10YNO-3--------J	Norwegian Elspot Area 3	NO3	MA_NO3	SN
10YNO-4--------9	Norwegian Elspot Area 4	NO4	MA_NO4	SN
10Y1001A1001A48H	Norwegian Elspot Area 5	NO5	MA_NO5	SN
10YPT-REN------W	Portugal Delivery Area	PT	MA_PT	REN
10YFR-RTE------C	France	RTE	FR	RTE
10Y1001A1001A44P	Sweden 1	SE1	MA_SE1	SVK
10Y1001A1001A45N	Sweden 2	SE2	MA_SE2	SVK
10Y1001A1001A46L	Sweden 3	SE3	MA_SE3	SVK
10Y1001A1001A47J	Sweden 4	SE4	MA_SE4	SVK
10YES-REE------0	Spain Delivery Area	ES	MA_ES	REE
10YDE-ENBW-----N	TransnetBW GmbH	TNG	DE	TNG
10YDE-EON------1	TenneT TSO GmbH	TTG	DE	TTG
10YNL----------L	Netherlands	TTN	NL	TTN

Allegato B

CMM BORDER

Market Area 1	Market Area 2	Border Name	Cost coefficient
BE	NL	BE-NL	1
DE	AT	DE-AT	1
DE	MA_DK1	DE-MA_DK1	1
DE	MA_DK2	DE-MA_DK2	1
DE	NL	DE-NL	1
FR	BE	FR-BE	1
DE	FR	DE-FR	1
FR	MA_ES	FR-MA_ES	1
MA_DK1	MA_DK2	MA_DK1-MA_DK2	1
MA_DK1	MA_NO2	MA_DK1-MA_NO2	1
MA_DK1	MA_SE3	MA_DK1-MA_SE3	1
MA_DK1	NL	MA_DK1-NL	1
MA_DK2	MA_SE4	MA_DK2-MA_SE4	1
MA_EE	MA_FI	MA_EE-MA_FI	1
MA_EE	MA_LV	MA_EE-MA_LV	1
MA_FI	MA_SE1	MA_FI-MA_SE1	1
MA_FI	MA_SE3	MA_FI-MA_SE3	1
MA_FRE	MA_FI	MA_FRE-MA_FI	1
MA_LT	MA_SE4	MA_LT-MA_SE4	1
MA_LV	MA_LT	MA_LV-MA_LT	1
MA_NO1	MA_NO2	MA_NO1-MA_NO2	1
MA_NO1	MA_NO3	MA_NO1-MA_NO3	1
MA_NO1	MA_NO5	MA_NO1-MA_NO5	1
MA_NO1	MA_SE3	MA_NO1-MA_SE3	1
MA_NO2	MA_NO5	MA_NO2-MA_NO5	1
MA_NO2	NL	MA_NO2-NL	1
MA_NO3	MA_NO4	MA_NO3-MA_NO4	1
MA_NO3	MA_NO5	MA_NO3-MA_NO5	1
MA_NO3	MA_SE2	MA_NO3-MA_SE2	1
MA_NO4	MA_SE1	MA_NO4-MA_SE1	1
MA_NO4	MA_SE2	MA_NO4-MA_SE2	1
MA_SE1	MA_SE2	MA_SE1-MA_SE2	1
MA_SE2	MA_SE3	MA_SE2-MA_SE3	1
MA_SE3	MA_SE4	MA_SE3-MA_SE4	1
MA_ES	MA_MA	MA_ES-MA_MA	1
MA_ES	MA_PT	MA_ES-MA_PT	1
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CMM INTERCONNECTOR

MA-Internal	Border	Delivery Area 1	Delivery Area 2	Interconnector Name	Cost coefficient
Yes		50HzT	AMP	50HzT-AMP	1
No	DE-MA_DK2	50HzT	DK2	50HzT-DK2	1
Yes		50HzT	TNG	50HzT-TNG	1
Yes		50HzT	TTG	50HzT-TTG	1
No	DE-AT	AMP	APG	AMP-APG	1
No	DE-FR	AMP	RTE	AMP-RTE	1
Yes		AMP	TNG	AMP-TNG	1
Yes		AMP	TTG	AMP-TTG	1
No	DE-NL	AMP	TTN	AMP-TTN	1
No	MA_DK1-MA_NO2	DK1A	NO2	DK1A-NO2	1
No	MA_DK1-MA_SE3	DK1A	SE3	DK1A-SE3	1
No		DK1A	DK1	DK1A-DK1	1
No	MA_DK1-MA_DK2	DK1	DK2	DK1-DK2	1
No	MA_DK1-NL	DK1	TTN	DK1-TTN	1
No	MA_DK2-MA_SE4	DK2	SE4	DK2-SE4	1
No	MA_EE-MA_FI	EE	FI	EE-FI	1
No	MA_EE-MA_LV	EE	LV	EE-LV	1
No	BE-NL	ELIA	TTN	ELIA-TTN	1
No	MA_ES-MA_MA	ES	MA	ES-MA	1
No	MA_ES-MA_PT	ES	PT	ES-PT	1
No	MA_FI-MA_SE1	FI	SE1	FI-SE1	1
No	MA_FI-MA_SE3	FI	SE3	FI-SE3	1
No	MA_FRE-MA_FI	FRE	FI	FRE-FI	1
No	MA_LT-MA_SE4	LT	SE4	LT-SE4	1
No	MA_LV-MA_LT	LV	LT	LV-LT	1
No	MA_NO1-MA_NO2	NO1A	NO2	NO1A-NO2	1
No	MA_NO1-MA_NO5	NO1A	NO5	NO1A-NO5	1
No		NO1A	NO1	NO1A-NO1	1
No	MA_NO1-MA_NO3	NO1	NO3	NO1-NO3	1
No	MA_NO1-MA_SE3	NO1	SE3	NO1-SE3	1
No	MA_NO2-MA_NO5	NO2	NO5	NO2-NO5	1
No	MA_NO2-NL	NO2	TTN	NO2-TTN	1
No	MA_NO3-MA_NO4	NO3	NO4	NO3-NO4	1
No	MA_NO3-MA_NO5	NO3	NO5	NO3-NO5	1
No	MA_NO3-MA_SE2	NO3	SE2	NO3-SE2	1
No	MA_NO4-MA_SE1	NO4	SE1	NO4-SE1	1
No	MA_NO4-MA_SE2	NO4	SE2	NO4-SE2	1
No	FR-BE	RTE	ELIA	RTE-ELIA	1
No	FR-MA_ES	RTE	ES	RTE-ES	1
No	DE-FR	TNG	RTE	TNG-RTE	1
No	MA_SE1-MA_SE2	SE1	SE2	SE1-SE2	1
No	MA_SE2-MA_SE3	SE2	SE3	SE2-SE3	1
No	MA_SE3-MA_SE4	SE3	SE4	SE3-SE4	1
Yes		TNG	TTG	TNG-TTG	1
No	DE-MA_DK1	TTG	DK1	TTG-DK1	1
No	DE-NL	TTG	TTN	TTG-TTN	1

Automatically generated by the system