ACER
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of Energy Regulators

Annex I

Congestion income distribution methodology

in accordance with Article 73 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management

Contents

Whereas

(1)   This document establishes the methodology for congestion income distribution (hereafter referred to as "CID methodology") in accordance with Article 73 of Commission Regulation (EU) 2015/1222 establishing a guideline on Capacity Allocation and Congestion Management (hereafter referred to as the "CACM Regulation").

(2)   The CID methodology takes into consideration the provisions on general principles of congestion income in Article 16 (6) of 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").

(3)   This CID methodology takes into account the general principles, goals and other methodologies set in the CACM Regulation. The goal of the CACM Regulation is the coordination and harmonisation of capacity calculation and capacity allocation in the day-ahead and intraday cross-border markets, and it sets requirements for the Transmission System Operators (hereafter referred to as "TSOs") to co-operate on the level of capacity calculation regions (hereinafter referred to as "CCRs"), on a pan-European level and across bidding zone borders. The CACM Regulation sets also rules for establishing capacity calculation methodologies based either on the flow-based approach ("FB approach") or, subject to conditions specified therein, the coordinated net transmission capacity approach ("coordinated NTC approach").

(4)   In accordance with Article 73 of the CACM Regulation, the CID methodology should cover the congestion income distribution in both the day-ahead and the intraday timeframe. However, since the intraday capacity pricing methodology pursuant to Article 55 of the CACM Regulation is not defined yet, it is therefore currently not possible to devise the rules for the sharing of congestion income in the intraday timeframe. For this reason, the CID methodology covers only the distribution of congestion income in the day-ahead timeframe, whereas the scope of the CID methodology should be amended in order to extend the scope to intraday timeframe once sufficient clarity is gained on how congestion income in the intraday timeframe will be created.

(5)   The CID methodology is designed in three layers. First, for each CCR the congestion income generated by exchanges within a CCR is defined and collected. Second, the congestion income of a CCR is distributed among the bidding zone borders of a CCR. This is done using a harmonised approach based on the absolute value of a product between the commercial flow and the market spread on the bidding zone border. Third, the congestion income attributed to the bidding zone border is distributed among TSOs having interconnectors on that bidding zone border.

(6)   Regional application of congestion income distribution is needed for two main reasons. First, the congestion income from SDAC includes also the congestion income resulting from reallocated long-term transmission rights ("LTTR"), for which TSOs need to coordinate in capacity calculation and allocation, as well as guaranteeing their firmness and remuneration including sharing of related costs in accordance with Article 61 of the Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation (hereinafter referred to as the "FCA Regulation"). All these requirements are defined at a level of CCR and therefore sharing of congestion income must be kept at the same level in order to ensure revenue adequacy. Second, the definition of commercial flow is not harmonised across

EU mainly because CCRs with coordinated NTC and FB approach allocate cross-zonal capacity in a fundamentally different way. In CCRs with coordinated NTC approach, the commercial flows can be set to equal allocated cross-zonal capacities, which are directly resulting from single day-ahead coupling ("SDAC") algorithm. In CCRs with FB approach, where SDAC algorithm does not calculate allocated capacities on bidding zone borders, the commercial flows need to be calculated additionally. This is done by first calculating, for each bidding zone, the net position resulting from exchanges within a CCR (i.e. the regional net positions) and then the physical flows resulting from the regional net positions are calculated for each bidding zone border of a CCR.[1] For those bidding zones, where part of the its regional net position is physically realised through borders outside of CCR, the external flow is calculated such that the sum of calculated physical flows on internal borders and external flow is equal to the regional net position of a bidding zone.

(7)   The congestion income from SDAC also contains the congestion income generated by non-nominated LTTRs (i.e. non-nominated PTRs or FTRs), which TSOs have the obligation to remunerate in accordance with the FCA Regulation. While the remuneration of LTTRs is outside the scope of this CID methodology, it is important to maintain the revenue adequacy of each TSO. Thus, in a situation where LTTRs have been issued in a CCR, the costs for the remuneration of those LTTRs should be borne by the same TSOs, which receive the congestion income in the day-ahead timeframe that is generated by the capacity corresponding to these non-nominated LTTRs. This principle should be reflected in the methodology for sharing costs incurred to ensure firmness and remuneration of long-term transmission rights in accordance with Article 61(3) of the FCA Regulation.

(8)   According to Article 9 (9) of the CACM Regulation, the expected impact of the proposed CID methodology on the objectives of the CACM Regulation has to be described and is presented below.

(9)   The proposed CID methodology generally contributes to the achievement of the objectives of Article 3 of CACM Regulation or the usage principles for congestion income set in Regulation (EC) No 714/2009. In particular, the CID methodology serves the objective of promoting effective competition in the trading and supply of electricity, non-discriminatory access to cross-zonal capacity as it lays down the exact methodology for the distribution of congestion income to be applied by all involved TSOs, thus, creating a solid basis for congestion income distribution for the first time at European level.

(10)   Congestion income indicates how much market participants value the possibility for cross-border trade, how interconnections are used and where capacity should be increased. Via the possibility to consider investment costs in the sharing key, more certainty can be achieved for a more optimal sharing key for future investments and thus, long-term operation and development of the electricity transmission system and electricity sector in the European Union is supported.

(11)   Furthermore, the CID methodology ensures non-discriminatory treatment of all affected parties, as it sets rules to be applied by all parties. Further, the methodology takes into account congestion income derived by interconnections on bidding zone borders owned by legal entities other than

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[1] These flows are calculated based on power transfer distribution factors, which are calculated based on common grid model.

TSOs, preventing exclusion of such congestion income from the application of the CID methodology as long as these interconnections are operated by TSOs.

(12) Regarding the objective of transparency and reliability of information, the CID methodology provides clear rules and a solid basis for congestion income distribution in a transparent and reliable way.

(13) In conclusion, the proposed CID methodology contributes to the general objectives of the CACM Regulation to the benefit of all market participants and electricity end consumers.

TITLE 1
General provisions
Article 1
Subject matter and scope

1. The CID methodology is established in accordance with Article 73 of the CACM Regulation and shall cover the congestion income distribution for:
   a. all existing and future bidding zone borders and interconnectors within and between Member States, to which the CACM Regulation applies and where congestion income is collected;
   b. Interconnectors which are owned by TSOs or by other legal entities;
   c. Congestion income derived from capacity allocation based on coordinated NTC approach and FB approach; and
   d. Congestion income derived from capacity allocation in the day-ahead timeframe.

2. Where congestion income derives from transmission assets owned by legal entities other than TSOs, these parties shall be treated in a transparent and non-discriminatory way. The TSOs operating these assets shall conclude the necessary agreements compliant with this CID methodology with the relevant transmission asset owners to remunerate them for the transmission assets they operate on their behalf.

Article 2
Definitions and interpretation

1. For the purpose of the CID methodology, terms used in this document shall have the meaning of the definitions included in Article 2 of the CACM Regulation, of the FCA Regulation, of Regulation (EC) 714/2009, Directive 2009/72/EC and Commission Regulation (EU) 543/2013.

2. In addition, in this CID methodology the following terms shall apply:
   a. "Commercial Flow" means the flow over a bidding zone border resulting from SDAC where it is distinguished as follows:
      i. for CCRs applying the FB approach it is the additional aggregated flow (AAF) and if applicable the external flow as specified in Article 3; and
      ii. for CCRs applying coordinated NTC approach it means the allocated capacities on the bidding zone border.
   b. "External flow" means the calculated physical flow resulting from exchanges within a CCR from the SDAC that cannot be directly assigned to a bidding zone border of that CCR and

therefore represents exchanges within a CCR, which are physically realised through borders outside of a CCR;

  c. "Net border income" means the congestion income allocated per bidding zone border as defined in Article 4(2) and (3) of this methodology.

3. In addition, in this CID methodology, unless the context requires otherwise:

  a. a bidding zone border may consist of one or more interconnector(s) for the purposes of the congestion income distribution;
  b. unless specified otherwise, the terms used apply in the context of the SDAC;
  c. the singular indicates the plural and vice versa;
  d. the table of contents and headings are inserted for convenience only and do not affect the interpretation of this CID methodology; and
  e. any reference to legislation, regulations, directives, orders, instruments, codes or any other enactment shall include any modification, extension or re-enactment of it when in force.

TITLE 2
Collection and distribution of congestion income to the bidding zone borders
Article 3
Calculation of commercial flow in FB approach

1. For CCRs applying the FB approach, the commercial flow shall be based on calculated physical flow on bidding zone borders of a CCR, which result from regional net positions of bidding zones in a CCR. These regional net positions shall be derived from the total net positions resulting from SDAC and subtracting the exchanges with bidding zones outside of a CCR.

2. On the internal bidding zone borders of a CCR the commercial flow shall be equal to AAF, which is the calculated physical flow on internal bidding zone borders of a CCR resulting from the electricity exchanges within a CCR. AAF shall be calculated with the following formula:

$$AAF_i = \sum_{j,k \in i} NP_j \cdot PTDF_{j,k}$$

where:
AAF_i is the AAF on the bidding zone border i;
NP_j is the regional net position of the bidding zone j;
$PTDF_{j,k}$ is the power transfer distribution factor for the bidding zone j on the interconnector k located on the bidding zone border i.

3. For each bidding zone, which has the regional net position not equal to the sum of all commercial flows calculated on the internal borders of such bidding zone pursuant to paragraph 2, the external flow is needed as additional commercial flow in order to balance the regional net position of such bidding zone. The external flow of such bidding zone shall be calculated using the following formula:

$$EF_j = NP_j - \sum_{i \in M} AAF_i$$

where:
EF_j is the external flows for the bidding zone j;
NP_j is the regional net position of the bidding zone j;
AAF_i is the additional aggregated flow on the bidding zone border i;

M is the subset of bidding zone borders within a CCR that are part of a bidding zone *j*.

4. For bidding zones, where additional commercial flow is calculated based on external flow pursuant to paragraph 3, the market spread of such commercial flow used in accordance with Article 4(2) shall be calculated as:

$$EMS_j = P_j - P_{hub}$$

and P_{hub} is the price that minimises the sum of external flows (calculated in accordance with paragraph 3) flowing in the opposite direction of EMS (i.e. non-intuitive external flows) using the following optimisation:

$$\min_{P_{hub}} \sum_{j=1}^{n} \left| \left(P_j - P_{hub} \right) \times EF_j \right|$$

where:
EMS_j is the market spread for the external flow of a bidding zone *j*;
P_j is the clearing price of a bidding zone *j* resulting from SDAC;
P_{hub} is the price of a virtual hub, which represents a common virtual sink or source for all external flows;
n is the number of bidding zones having external flows.

If there is no unique solution for P_{hub}, then P_{hub} shall be calculated as the average of the maximum and the minimum value from a set of P_{hub} satisfying the formula above.

Article 4
Process and calculation of congestion income

1. In accordance with Article 68(7) and (8) of the CACM Regulation, the relevant central counter parties or shipping agents shall collect the congestion income arising from the SDAC and shall ensure that collected congestion income is transferred to the TSOs or entities appointed by TSOs no later than two weeks after the date of the settlement.

2. For the day-ahead market time-frame, the congestion income attributed to a bidding zone border shall be calculated as the absolute value of the product of the commercial flow multiplied by the market spread. The relevant market spread shall be reduced to reflect the costs of network losses in case these are considered in capacity calculation and allocation on the given bidding zone border or interconnector.

3. In case the sum of congestion income attributed to all bidding zone borders within a CCR (and external borders where relevant) pursuant to paragraph 2 is not equal to the total congestion income generated by electricity exchanges within a CCR, the congestion income attributed to the bidding zone borders within a CCR (and external borders where relevant) pursuant to paragraph (2) shall be adjusted proportionally in order to match the total congestion income generated by electricity exchanges within a CCR.

TITLE 3
Congestion income distribution on the bidding zone border

Article 5
Sharing keys

1. For the bidding zone borders where congestion income was calculated based on allocated capacities or AAF, the TSOs on each side of the bidding zone border shall receive their share of net border income based on a 50%-50% sharing key. In specific cases the concerned TSOs may also use a sharing key different from 50%-50%. Such cases may involve, but are not limited to, different ownership shares or different investment costs. The percentages for these specific cases, as well as the underlying reasons are defined in Annex 1 to this methodology.

2. The congestion income calculated based on external flow shall be attributed to TSO(s) of a bidding zone for which the associated external flow was calculated and have interconnectors through which the external flows are realised.

3. In case the bidding zone border consists of several interconnectors with different sharing keys, or which are owned by different TSOs, the net border income shall be assigned first to the respective interconnectors on that bidding zone border based on each interconnector's contribution to the allocated capacity. The parameters defining the contribution of each interconnector will be agreed by the TSOs on the bidding zone border. They shall be published in a common document by ENTSO-E on its web page. The congestion income assigned to each interconnector shall subsequently be shared between the TSOs on each side of the interconnector using the principles described in paragraph 1 whereas the exemptions for specific interconnectors are also defined in Annex 1 to this methodology.

4. The final congestion income attributed to each TSO shall consist of congestion income calculated pursuant to paragraph 1 to 3 reduced by the costs for remuneration of long term transmission rights to be paid in accordance with Article 61 of the FCA Regulation. This reduction shall cover only the costs for remuneration of those long-term transmission rights, which have been offered for re-allocation at the day-ahead timeframe.

5. In case specific interconnectors are owned by entities other than TSOs, the reference to TSOs in this article shall be understood as referring to those entities.

TITLE 4
Transparency of information

Article 6
Publication of data

1. No later than at the time of the time of implementation of this methodology all TSOs shall publish the following information required for the transparency of congestion income distribution:
   a) for CCRs applying the FB approach:
      - power transfer distribution factors showing the influence of the change in the net position of each bidding zone on the physical flows on each interconnector on each bidding zone border within a CCR;
      - regional net position of each bidding zone within a CCR;

- price of the virtual hub, which represents a common virtual sink or source for all external flows; and
- price for each bidding zone within a CCR.

b) for all CCRs:
- commercial flows and the corresponding market prices used for the purpose of congestion income distribution in accordance with this methodology.

2. The information pursuant to paragraph 1 shall be published with market time unit resolution and at least on a monthly basis.

TITLE 5
Final provisions

Article 7
Publication and implementation of the CID methodology

1. The TSOs shall publish the CID methodology without undue delay after the decision has been taken by the Agency in accordance with Article 9(11) and 9(12) of the CACM Regulation.

2. The TSOs of each capacity calculation region shall implement the methodology at the date of implementation of the capacity calculation methodology within their respective CCR in accordance with Articles 20 and 21 of the CACM Regulation.

Article 8
Language

The reference language for this CID methodology shall be English. For the avoidance of doubt, where TSOs need to translate this CID methodology 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, in accordance with national legislation, provide the relevant NRAs with an updated translation of the CID Methodology.

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Annex 1 to the Congestion income distribution methodology

Pursuant to Article 5 of the Congestion income distribution methodology, this annex outlines the specific sharing keys applied for sharing congestion income among TSOs on the bidding zone border. Two types of specific keys are defined:

a) Specific sharing keys pursuant to Article 5(1) of the Congestion income distribution methodology describing a specific sharing key for the whole bidding zone border (which applies to all interconnectors on that border); and

b) Specific sharing keys pursuant to Article 5(3) of the Congestion income distribution methodology describing a specific sharing key for specific interconnectors of a bidding zone border.

The involved TSOs and entities may differ from those specified in the definition of capacity calculation regions for a specific bidding zone border when entities other than TSOs are present in the border.

Bidding Zone border	Interconnector	Involved TSOs/ Parties	Sharing key applied	Reason
DK2-DE/LU	all	Energinet.dk, 50Hertz, Vattenfall AB	Hours with congestion from DE/LU to DK2: Energinet.dk: 1/3 Vattenfall: 1/3 50 Hertz: 1/3 Hours with congestion from DK2 to DE/LU: Energinet.dk: 190/585 Vattenfall: 200/585 50 Hertz: 195/585	Ownership shares
GB-NL	BritNed	BritNed, TenneT TSO B.V. NGET	BritNed: 100%; TenneT TSO B.V.: 0%; NGET 0%	Ownership shares

GB-BE	Nemo Link[2]	Elia, Nemo Link Limited, NGET	Elia: 0%; Nemo Link Limited: 100%; NGET: 0%	Ownership shares
SEM-GB	Interconnector IE-GB	EirGrid Plc, NGET	EirGrid: 100%; Other entities: 0%	Ownership shares
SEM-GB	Interconnector GB-NI	SONI NGET Moyle Interconnector Ltd,	Moyle Interconnector Ltd: 100%; Other entities: 0%	Ownership shares
IT-AT	Interconnector Eneco Valcanale	Terna, APG, Eneco Valcanale	Eneco Valcanale: 100% Other entities: 0%	Ownership shares
FR-GB	Interconnector IFA	RTE, NGIC, NGET	RTE: 50%; NGIC: 50%; NGET: 0%	Ownership shares
FR-GB	Interconnector IFA2	RTE, NG IFA2 Limited, NGET	RTE: 50%; NG IFA2 Limited: 50%; NGET: 0%	Ownership shares
FR-GB	Interconnector Eleclink	RTE, Eleclink Limited, NGET	RTE: 0%; Eleclink Limited: 100%; NGET: 0%	Ownership shares
SE4-DE/LU[3]	Baltic Cable	Baltic Cable AB, Svenska kraftnät, TenneT TSO GmbH	Baltic Cable AB: 100%, Svenska kraftnät: 0%, TenneT TSO GmbH: 0%	Ownership shares

[2] In accordance with Schedule 3 of the Tariffs methodology (Z) 141218-CDC-1109/7, issued by CREG, and dated 18 December 2014, as amended from time to time.
[3] The Baltic Cable AB is not yet certified as a TSO.