

DÉCISION ILR/E18/5 DU 15 MARS 2018

**PORTANT DEMANDE DE MODIFICATION DES PROPOSITIONS DE MÉTHODOLOGIES COMMUNES
RELATIVES AU CALCUL COORDONNÉ DE LA CAPACITÉ JOURNALIÈRE ET INFRAJOURNALIÈRE DANS LA
RÉGION DE CALCUL DE CAPACITÉ CORE**

SECTEUR ÉLECTRICITÉ

La Direction de l'Institut Luxembourgeois de Régulation,

Vu le règlement (UE) 2015/1222 de la Commission du 24 juillet 2015 établissant une ligne directrice relative à l'allocation de la capacité et de la gestion de la congestion, et notamment l'article 9, paragraphes 7 et 12, ainsi que l'article 20, paragraphe 2 ;

Vu la demande d'approbation de la société Creos Luxembourg S.A. du 15 septembre 2017 introduisant des propositions de méthodologies communes relatives au calcul coordonné de la capacité journalière et infrajournalière dans la région de calcul de capacité CORE conformément à l'article 20 du règlement (UE) 2015/1222 précité, qui ont été élaborées conjointement par les gestionnaires de réseau de transport de la région de calcul de capacité CORE et qui ont fait l'objet d'une consultation publique par le biais de l'ENTSO-E du 30 juin 2017 au 31 juillet 2017 ;

Considérant les opinions émises en date du 9 mars 2018 par les autorités de régulation lors de la réunion du CORE Energy Regulators' Regional Forum, demandant aux gestionnaires de réseau de transport de la région de calcul de la capacité CORE de soumettre pour approbation une version modifiée des propositions de méthodologies communes relatives au calcul coordonné de la capacité journalière et infrajournalière dans la région de calcul de capacité CORE en vertu de l'article 9, paragraphe 12 du règlement (UE) 2015/1222 précité ;

Décide :

Art. 1^{er}. La proposition de méthodologie commune relative au calcul coordonné de la capacité journalière, telle que décrite dans le document portant l'intitulé « *CORE CCR TSOs' proposal for the regional design of the day-ahead common capacity calculation methodology in accordance with Article 20 of the Commission Regulation (EU) 2015/1222 of 24 July 2015* », dans sa version du 15 septembre 2017, est à modifier conformément aux indications données par les autorités de régulation de la région de calcul de la capacité CORE dans l'annexe 1.

Art. 2. La proposition de méthodologie commune relative au calcul coordonné de la capacité infrajournalière, telle que décrite dans le document portant l'intitulé « *CORE CCR TSOs' proposal for the regional design of the intraday common capacity calculation methodology in accordance with Article 20 of the Commission Regulation (EU) 2015/1222 of 24 July 2015* », dans sa version du 15 septembre 2017, est à modifier conformément aux indications données par les autorités de régulation de la région de calcul de la capacité CORE dans l'annexe 2.

Art. 3. La présente décision sera notifiée à la société Creos Luxembourg S.A. et publiée sur le site internet de l'Institut.

L'Institut informe la société Creos Luxembourg S.A. qu'un recours en annulation est ouvert contre la présente décision, à introduire devant le Tribunal Administratif de Luxembourg par ministère d'avocat à la Cour, au plus tard dans les trois mois qui suivent la notification de la présente décision.

Pour l'Institut Luxembourgeois de Régulation

La Direction

(s.) Michèle Bram
Directrice adjointe

(s.) Camille Hierzig
Directeur adjoint

(s.) Luc Tapella
Directeur

Annexe 1 : Request for Amendment by the Core NRAs agreed at the Core Energy Regulators' Regional Forum of the "Core CCR TSOs' proposal for the regional design of the day-ahead common capacity calculation methodology in accordance with Article 20ff. of Commission Regulation (EU) 2015/1222 of 24 July 2015" - 9 March 2018

Annexe 2 : Request for Amendment by the Core NRAs agreed at the Core Energy Regulators' Regional Forum of the "Core CCR TSOs' proposal for the regional design of the intraday common capacity calculation methodology in accordance with Article 20ff. of Commission Regulation (EU) 2015/1222 of 24 July 2015" - 9 March 2018



—CREG—



**Request for Amendment by the Core NRAs
agreed at the Core Energy Regulators' Regional Forum**

of

**the “Core CCR TSOs’ proposal for the regional design of the
day-ahead common capacity calculation methodology in
accordance with Article 20ff. of Commission Regulation (EU)
2015/1222 of 24 July 2015”**

9 March 2018

1 INTRODUCTION AND LEGAL CONTEXT

Article 20 of the CACM Regulation¹ requires that no later than 10 months after the approval of the proposal for a capacity calculation region (hereafter “CCR”) in accordance with Article 15(1) of the CACM Regulation, all TSOs in each CCR shall submit a proposal for a common capacity calculation methodology.

The Core TSOs’ proposal for the day-ahead capacity calculation methodology was received by the last Core NRA on 20 September 2017.

This agreement of the Core NRAs shall provide evidence that a decision on the proposal for the day-ahead capacity calculation methodology does not, at this stage, need to be adopted by ACER pursuant to Article 9(11) of the CACM Regulation. It is intended to constitute the basis on which the **Core NRAs will each subsequently request an amendment** to the proposal for the day-ahead capacity calculation methodology pursuant to Article 9(12) of the CACM Regulation.

The legal provisions that lie at the basis of the proposal for the day-ahead capacity calculation methodology, and this Core NRAs agreement on the proposal for the day-ahead capacity calculation methodology, can be found in the Articles 3, 8, 9, and 20ff. of the CACM Regulation:

Article 3 Objectives of capacity allocation and congestion management cooperation

This Regulation aims at:

- (a) Promoting effective competition in the generation, trading and supply of electricity;*
- (b) Ensuring optimal use of the transmission infrastructure;*
- (c) Ensuring operational security;*
- (d) Optimising the calculation and allocation of cross-zonal capacity;*
- (e) Ensuring fair and non-discriminatory treatment of TSOs, NEMOs, the Agency, regulatory authorities and market participants;*
- (f) Ensuring and enhancing the transparency and reliability of information;*
- (g) Contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union;*
- (h) Respecting the need for a fair and orderly market and fair and orderly price formation;*

¹ Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management

(i) Creating a level playing field for NEMOs;

(j) Providing non-discriminatory access to cross-zonal capacity

Article 8 TSOs' tasks related to single day-ahead and intraday coupling

1. In Member States electrically connected to another Member State all TSOs shall participate in the single day-ahead and intraday coupling.

2. TSOs shall:

(...)

(c) establish and perform capacity calculation in accordance with Articles 14 to 30;

(...)

Article 9 Adoption of terms and conditions or methodologies

1. TSOs and NEMOs shall develop the terms and conditions or methodologies required by this Regulation and submit them for approval to the competent regulatory authorities within the respective deadlines set out in this Regulation. Where a proposal for terms and conditions or methodologies pursuant to this Regulation needs to be developed and agreed by more than one TSO or NEMO, the participating TSOs and NEMOs shall closely cooperate. TSOs, with the assistance of ENTSO for Electricity, and all NEMOs shall regularly inform the competent regulatory authorities and the Agency about the progress of developing these terms and conditions or methodologies.

(...)

5. Each regulatory authority shall approve the terms and conditions or methodologies used to calculate or set out the single day-ahead and intraday coupling developed by TSOs and NEMOs. They shall be responsible for approving the terms and conditions or methodologies referred to in paragraphs 6, 7 and 8.

(...)

7. The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region:

(a) the common capacity calculation methodology in accordance with Article 20(2);

(b) (...)

(...)

9. *The proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation. Proposals on terms and conditions or methodologies subject to the approval by several or all regulatory authorities shall be submitted to the Agency at the same time that they are submitted to regulatory authorities. Upon request by the competent regulatory authorities, the Agency shall issue an opinion within three months on the proposals for terms and conditions or methodologies.*

10. *Where the approval of the terms and conditions or methodologies requires a decision by more than one regulatory authority, the competent regulatory authorities shall consult and closely cooperate and coordinate with each other in order reach an agreement. Where applicable, the competent regulatory authorities shall take into account the opinion of the Agency. Regulatory authorities shall take decisions concerning the submitted terms and conditions or methodologies in accordance with paragraphs 6, 7 and 8, within six months following the receipt of the terms and conditions or methodologies by the regulatory authority or, where applicable, by the last regulatory authority concerned.*

(...)

12. *In the event that one or several regulatory authorities request an amendment to approve the terms and conditions or methodologies submitted in accordance with paragraphs 6, 7 and 8, the relevant TSOs or NEMOs shall submit a proposal for amended terms and conditions or methodologies for approval within two months following the requirement from the regulatory authorities. The competent regulatory authorities shall decide on the amended terms and conditions or methodologies within two months following their submission. Where the competent regulatory authorities have not been able to reach an agreement on terms and conditions or methodologies pursuant to paragraphs (6) and (7) within the two-month deadline, or upon their joint request, the Agency shall adopt a decision concerning the amended terms and conditions or methodologies within six months, in accordance with Article 8(1) of Regulation (EC) No 713/2009. If the relevant TSOs or NEMOs fail to submit a proposal for amended terms and conditions or methodologies, the procedure provided for in paragraph 4 of this Article shall apply.*

14. *TSOs and NEMOs responsible for establishing the terms and conditions or methodologies in accordance with this Regulation shall publish them on the internet after approval by the competent regulatory authorities or, if no such approval is required, after their establishment, except where such information is considered as confidential in accordance with Article 13.*

Article 20 Introduction of flow-based capacity calculation methodology

1. *For the day-ahead market time-frame and intraday market time-frame the approach used in the common capacity calculation methodologies shall be a flow-based approach, except where the requirement under paragraph 7 is met.*

2. *No later than 10 months after the approval of the proposal for a capacity calculation region in accordance with Article 15(1), all TSOs in each capacity calculation region shall submit a proposal for a common coordinated capacity calculation methodology within the respective region. The proposal shall*

be subject to consultation in accordance with Article 12. The proposal for the capacity calculation methodology within regions pursuant to this paragraph in capacity calculation regions based on the 'North-West Europe' ('NWE') and 'Central Eastern Europe' ('CEE') as defined in points (b), and (d) of point 3.2 of Annex I to Regulation (EC) No 714/2009 as well as in regions referred to in paragraph 3 and 4, shall be complemented with a common framework for coordination and compatibility of flow-based methodologies across regions to be developed in accordance with paragraph 5.

(...)

8. To enable market participants to adapt to any change in the capacity calculation approach, the TSOs concerned shall test the new approach alongside the existing approach and involve market participants for at least six months before implementing a proposal for changing their capacity calculation approach.

9. The TSOs of each capacity calculation region applying the flow-based approach shall establish and make available a tool which enables market participants to evaluate the interaction between cross-zonal capacities and cross-zonal exchanges between bidding zones.

Article 21 Capacity calculation methodology

1. The proposal for a common capacity calculation methodology for a capacity calculation region determined in accordance with Article 20(2) shall include at least the following items for each capacity calculation time-frame:

(a) methodologies for the calculation of the inputs to capacity calculation, which shall include the following parameters:

- (i) a methodology for determining the reliability margin in accordance with Article 22;*
- (ii) the methodologies for determining operational security limits, contingencies relevant to capacity calculation and allocation constraints that may be applied in accordance with Article 23;*
- (iii) the methodology for determining the generation shift keys in accordance with Article 24;*
- (iv) the methodology for determining remedial actions to be considered in capacity calculation in accordance with Article 25.*

(b) a detailed description of the capacity calculation approach which shall include the following:

- (i) a mathematical description of the applied capacity calculation approach with different capacity calculation inputs;*
- (ii) rules for avoiding undue discrimination between internal and cross-zonal exchanges to ensure compliance with point 1.7 of Annex I to Regulation (EC) No 714/2009;*
- (iii) rules for taking into account, where appropriate, previously allocated cross-zonal capacity;*
- (iv) rules on the adjustment of power flows on critical network elements or of cross-zonal capacity due to remedial actions in accordance with Article 25;*
- (v) for the flow-based approach, a mathematical description of the calculation of power transfer distribution factors and of the calculation of available margins on critical network elements;*

(vi) for the coordinated net transmission capacity approach, the rules for calculating cross-zonal capacity, including the rules for efficiently sharing the power flow capabilities of critical network elements among different bidding zone borders;

(vii) where the power flows on critical network elements are influenced by cross-zonal power exchanges in different capacity calculation regions, the rules for sharing the power flow capabilities of critical network elements among different capacity calculation regions in order to accommodate these flows.

(c) a methodology for the validation of cross-zonal capacity in accordance with Article 26.

2. For the intraday capacity calculation time-frame, the capacity calculation methodology shall also state the frequency at which capacity will be reassessed in accordance with Article 14(4), giving reasons for the chosen frequency.

3. The capacity calculation methodology shall include a fallback procedure for the case where the initial capacity calculation does not lead to any results.

4. All TSOs in each capacity calculation region shall, as far as possible, use harmonised capacity calculation inputs. By 31 December 2020, all regions shall use a harmonised capacity calculation methodology which shall in particular provide for a harmonised capacity calculation methodology for the flow-based and for the coordinated net transmission capacity approach. The harmonisation of capacity calculation methodology shall be subject to an efficiency assessment concerning the harmonisation of the flow-based methodologies and the coordinated net transmission capacity methodologies that provide for the same level of operational security. All TSOs shall submit the assessment with a proposal for the transition towards a harmonised capacity calculation methodology to all regulatory authorities within 12 months after at least two capacity calculation regions have implemented common capacity calculation methodology in accordance with Article 20(5).

Article 22 Reliability margin methodology

1. The proposal for a common capacity calculation methodology shall include a methodology to determine the reliability margin. The methodology to determine the reliability margin shall consist of two steps. First, the relevant TSOs shall estimate the probability distribution of deviations between the expected power flows at the time of the capacity calculation and realised power flows in real time. Second, the reliability margin shall be calculated by deriving a value from the probability distribution.

2. The methodology to determine the reliability margin shall set out the principles for calculating the probability distribution of the deviations between the expected power flows at the time of the capacity calculation and realised power flows in real time, and specify the uncertainties to be taken into account in the calculation. To determine those uncertainties, the methodology shall in particular take into account:

(a)unintended deviations of physical electricity flows within a market time unit caused by the adjustment of electricity flows within and between control areas, to maintain a constant frequency;

(b) uncertainties which could affect capacity calculation and which could occur between the capacity calculation time-frame and real time, for the market time unit being considered.

3. In the methodology to determine the reliability margin, TSOs shall also set out common harmonised principles for deriving the reliability margin from the probability distribution.

4. On the basis of the methodology adopted in accordance with paragraph 1, TSOs shall determine the reliability margin respecting the operational security limits and taking into account uncertainties between the capacity calculation time-frame and real time, and the remedial actions available after capacity calculation.

5. For each capacity calculation time-frame, the TSOs concerned shall determine the reliability margin for critical network elements, where the flow-based approach is applied, and for cross-zonal capacity, where the coordinated net transmission capacity approach is applied.

Article 23 Methodologies for operational security limits, contingencies and allocation constraints

1. Each TSO shall respect the operational security limits and contingencies used in operational security analysis.

2. If the operational security limits and contingencies used in capacity calculation are not the same as those used in operational security analysis, TSOs shall describe in the proposal for the common capacity calculation methodology the particular method and criteria they have used to determine the operational security limits and contingencies used for capacity calculation.

3. If TSOs apply allocation constraints, they can only be determined using:

(a) constraints that are needed to maintain the transmission system within operational security limits and that cannot be transformed efficiently into maximum flows on critical network elements; or

(b) constraints intended to increase the economic surplus for single day-ahead or intraday coupling.

Article 24 Generation shift keys methodology

1. The proposal for a common capacity calculation methodology shall include a proposal for a methodology to determine a common generation shift key for each bidding zone and scenario developed in accordance with Article 18.

2. The generation shift keys shall represent the best forecast of the relation of a change in the net position of a bidding zone to a specific change of generation or load in the common grid model. That forecast shall notably take into account the information from the generation and load data provision

methodology.

Article 25 Methodology for remedial actions in capacity calculation

- 1. Each TSO within each capacity calculation region shall individually define the available remedial actions to be taken into account in capacity calculation to meet the objectives of this Regulation.*
- 2. Each TSO within each capacity calculation region shall coordinate with the other TSOs in that region the use of remedial actions to be taken into account in capacity calculation and their actual application in real time operation.*
- 3. To enable remedial actions to be taken into account in capacity calculation, all TSOs in each capacity calculation region shall agree on the use of remedial actions that require the action of more than one TSO.*
- 4. Each TSO shall ensure that remedial actions are taken into account in capacity calculation under the condition that the available remedial actions remaining after calculation, taken together with the reliability margin referred to in Article 22, are sufficient to ensure operational security.*
- 5. Each TSO shall take into account remedial actions without costs in capacity calculation.*
- 6. Each TSO shall ensure that the remedial actions to be taken into account in capacity calculation are the same for all capacity calculation time-frames, taking into account their technical availabilities for each capacity calculation time-frame.*

Article 26 Cross-zonal capacity validation methodology

- 1. Each TSO shall validate and have the right to correct cross-zonal capacity relevant to the TSO's bidding zone borders or critical network elements provided by the coordinated capacity calculators in accordance with Articles 27 to 31.*
- 2. Where a coordinated net transmission capacity approach is applied, all TSOs in the capacity calculation region shall include in the capacity calculation methodology referred to in Article 21 a rule for splitting the correction of cross-zonal capacity between the different bidding zone borders.*
- 3. Each TSO may reduce cross-zonal capacity during the validation of cross-zonal capacity referred to in paragraph 1 for reasons of operational security.*
- 4. Each coordinated capacity calculator shall coordinate with the neighbouring coordinated capacity calculators during capacity calculation and validation.*

5. Each coordinated capacity calculator shall, every three months, report all reductions made during the validation of cross-zonal capacity in accordance with paragraph 3 to all regulatory authorities of the capacity calculation region. This report shall include the location and amount of any reduction in cross-zonal capacity and shall give reasons for the reductions.

6. All the regulatory authorities of the capacity calculation region shall decide whether to publish all or part of the report referred to in paragraph 5.

2 CORE TSOs' PROPOSAL

The proposal for the day-ahead capacity calculation methodology was consulted by Core TSOs through ENTSO-E from 30 June 2017 to 31 July 2017 in line with Article 20(2) and Article 12 of the CACM Regulation. Along with the draft proposal, the Core TSOs published an explanatory note.

In the public consultation, Core TSOs were seeking input from stakeholders and market participants on the draft proposal. Market participants were asked to provide Core TSOs with their feedback via the online survey platform.

Core NRAs closely observed, analysed and continuously provided feedback and guidance to Core TSOs during various meetings in 2016, 2017 and 2018 and through a shadow opinion of all Core NRAs in August 2017.

The final proposal for the day-ahead capacity calculation methodology, dated 15 September 2017, was received by the last Core NRA on 20 September 2017. The proposal includes proposed timescales for its implementation and a description of its expected impact on the objectives of CACM Regulation, in line with Article 9(9) of CACM Regulation.

Article 9(10) of the CACM Regulation requires Core NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement, and make decisions within six months following receipt of submissions of the last Core NRA concerned. A decision is therefore required by each Core NRA by 20 March 2018.

The proposal for the day-ahead capacity calculation methodology, as understood by the Core NRAs, foresees the introduction of a **flow-based capacity calculation methodology** in the Core CCR at the day-ahead timeframe.

3 CORE NRAs' ASSESSMENT

The Core NRAs request the Core TSOs to amend the proposal pursuant Article 9(12) of the CACM Regulation and to take into account the following Core NRAs' assessment. The assessment contains of a fundamental part and a part going more into detail. The first sub chapter assesses the general approach made by Core TSOs, whereas the second sub chapter tackles every article of the proposal individually.

3.1 FUNDAMENTAL REMARKS

In its Articles 5 (Methodology for critical network elements and contingencies selection), 9 (Reliability margin methodology), 10 (Generation shift keys methodology) and 15 (Rules on adjustment of power flows in critical network elements due to remedial actions), the proposal delivered by Core TSOs does not contain descriptions of sub-methodologies but a reference to a so called deliverable report which shall be provided to Core NRAs in Q1 2018, describing the approach to finalize the open issues on those sub-methodologies. This report would display a timeline until those sub-methodologies will be finalized by Core TSOs on a date to be precised in this report.

As Core NRAs cannot approve sub-methodologies or methodologies that imply subsequent approvals or refer to additional deliveries, they do not consider the approach proposed by Core TSOs as feasible. Core NRAs then urge to add sufficient descriptions of all sub-methodologies in the amended proposal. If not all requirements of the CACM Regulation are covered in the proposal, Core TSOs fail to fulfil their obligation and Core NRAs will not be in a position to approve a proposal with missing elements. Besides the missing sub-methodologies, the current version of the proposal lacks the level of details needed to approve the day-ahead capacity calculation methodology. Detailed requirements expected by Core NRAs are described in the dedicated part of this document below.

In addition, Core TSOs shall not leave undefined and unjustified thresholds or values in the methodology. When the proposal contains the option for individual TSO to discretionary use or modify several inputs of the capacity calculation, it has to be clearly stated for each TSO and justified. Core NRAs invite Core TSOs to foresee coordinated or common measures to avoid undue modification of the flow based capacity calculation inputs.

Not all requirements of the CACM Regulation are covered in the proposal. Core TSOs failed to fulfil their obligation and Core NRAs are not in a position to approve a proposal which is incomplete, leaves wide room for interpretations and is far from being enforceable.

3.2 FURTHER REMARKS ON CORE TSOS' PROPOSAL

General

On 3 August 2017, Core NRAs sent to Core TSOs a very detailed shadow opinion to answer the public consultation by the Core TSOs of the proposal for the day-ahead capacity calculation methodology. Core NRAs deeply regret that the Core TSOs did not follow the recommendations issued in the shadow opinion for most parts of the proposal.

The requirements of CACM Regulation not met in the proposal are:

- Rules for avoiding undue discrimination between internal and cross-zonal exchanges to ensure compliance with point 1.7 of Annex I to Regulation (EC) No 714/2009, as requested in Article 21(1)b(ii) of the CACM Regulation are not provided. These rules are further to be applied by the coordinated capacity calculator as prescribed by Article 29(7)(d) of the CACM Regulation. In case of discrimination between internal and cross-border flows, measures on how to resolve this discrimination in the long term shall be provided (e.g. launch of a bidding zone review in accordance with Article 32 of the CACM Regulation).
- How the tasks listed in Article 29 and Article 8(2)(e) of the CACM Regulation are carried out.
- How the decisions taken in the Core CCR consider and have an impact on neighbouring CCRs (Article 26(4) and Article 29(9) of the CACM Regulation).
- How the coordinated capacity calculator is appointed (Article 27(2) of the CACM Regulation) and how, if applicable, a smooth process is ensured if the role of the coordinated capacity calculator is performed by more than one entity (e.g. two RSCs) (Article 26(4) and Article 29(9) of the CACM Regulation)
- The description of the tool to be established for market participants which enables to evaluate the interaction between cross-zonal capacities and cross-zonal exchanges between bidding zones, as requested by Article 20(9) of the CACM Regulation shall be included into the proposal.
- TSOs shall describe the tasks, steps and processes between 15.00 D-2 as required by CACM Regulation 14(3) and the approved firmness deadline pursuant to CACM Regulation Article 69 Core NRAs request Core TSOs to refer to Article 22(1) of the proposal in every article that covers a parameter that will be reviewed according to Article 27(4) of the CACM Regulation.

Core NRAs ask Core TSOs to check all references to articles from the proposal.

Article 1 – Subject matter and scope

The proposal shall refer to Articles 20ff. of the CACM Regulation instead of only Article 20(2).

Article 2 – Definitions and interpretation

The definition of the TRM is missing.

Furthermore, for listing the definitions, it would be more practical to use numbers instead of letters.

References to other terms and methodologies that are not yet approved (e.g. Fallback) shall be avoided.

Various submission dates (e.g. Fallback, CGMM) mentioned are not of relevance as the proposal shall refer only to articles of the CACM Regulation.

Article 4 – Cross-zonal capacities for the day-ahead market

Core NRAs ask Core TSOs to explain why Article 20(3) of the CACM Regulation is mentioned in the proposal as it refers to Italy. Another article of the CACM Regulation may be referred to.

Article 5 – Methodology for critical network elements and contingencies selection

Core NRAs request that Core TSOs take into account in the capacity calculation only the cross-zonal network elements (hereafter “CNEs”) and contingencies (hereafter “CNECs”) and the internal CNEs/CNECs that are significantly impacted by cross-zonal exchanges. For the sake of determination of the set of CNEs/CNECs relevant for coordinated capacity calculation, TSOs shall define a methodology that provides at least:

- The determination of CNEs/CNECs relevant for coordinated capacity calculation and detailed criteria for the selection of CNEs/CNECs, such as thresholds.
- Reference to the relevant provisions of SO Regulation² and exploit synergies between coordinated capacity calculation and operational security assessment as much as possible. This applies in particular to but is not limited to the selection of contingencies pursuant to Article 33 of the SO Regulation.
- The frequency at which the set of relevant CNEs/CNECs for coordinated capacity calculation is re-evaluated.
- Details on how the methodology for selecting CNEs/CNECs relevant for coordinated capacity calculation takes into account the issue of undue discrimination between internal and cross-border flows.
- How the selection of CNEs/CNECs relevant for coordinated capacity calculation is in line with the objectives of the CACM Regulation (i.e. Article 3) and Article 1.7 of Annex I to the Regulation (EC) 714/2009).

Core NRAs ask Core TSOs for justification on how the selection of CNEs/CNECs relevant for coordinated capacity calculation is economically more efficient than measures for eliminating CNEs/CNECs (i.e. it shall be described why introducing a CNE/CNEC is from a social welfare point of view more efficient than other measures that would neutralise this CNE/CNEC).

In addition, Core NRAs request Core TSOs to clearly define criteria for a CNEC to be significantly influenced by the remedial actions (hereafter “RAs”), either by defining a clear threshold or other criteria. If Core TSOs do not define such criteria, they cannot use different sets of CNECs for the capacity calculation and for the remedial actions optimisation (hereafter “RAO”) monitoring. Here, links to the relevant provisions of SO Regulation (e.g. Article 75) shall be established in order to ensure compatibility and avoid gaps.

Article 5(5) of the proposal shall clarify if the decision by the TSOs to keep a CNEC under the threshold in the capacity calculation is taken for one market time unit or for another timeframe. An exhaustive list of justifications for the TSOs to do so shall also be provided in the proposal and include the requirement to not only include them in the monitoring report but also inform Core NRAs immediately.

² Commission Regulation 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

Core NRAs welcome the implementation of a minimum RAM. Core TSOs shall define a value as well as the approach to apply it when determining the cross-zonal capacity before allocating commercial exchanges.

The approval of the proposed update referred to in Article 5(8)(d) of the proposal implies an approval of a sub-methodology, and, is, thus, not acceptable (see fundamental remark of this document).

Article 6 – Methodology for operational security limits

Core NRAs ask Core TSOs to make a correct reference to Article 23 of the CACM Regulation as the one in the proposal does not respect the wording of Article 23 of the CACM Regulation.

The proposal foresees three different options for the definition of I_{max} . As an accurate determination of I_{max} allows for a more accurate RAM, Core NRAs ask Core TSOs to aim to use dynamic line ratings as the target solution (“*iii. a value per market time unit depending on the weather forecast*”) and seasonal limits as the fallback solution (“*ii. Fixed limits for all market time units of a specific season*”). Fixed limits for all market time units of a year are not acceptable.

Core NRAs request Core TSOs to clarify in the proposal which TSO will use which option for the go-live of the day-ahead capacity calculation methodology.

Equation 1 should be replaced by Equation 1 from the explanatory note mentioning that P is expressed in MW, and explaining - including justification - that $\cos(\phi)$ is set to 1.

Article 7 – Final Adjustment Value

Core NRAs request Core TSOs to provide an exhaustive list of reasons why FAV are used and to describe the link with the RAs.

Article 8 – Methodology for allocation constraints

Article 23 of the CACM Regulation requires a methodology for the allocation constraints and not a list of which TSO applies what allocation constraint.

Consequently, this methodology shall describe at least:

- The determination and calculation of the technical parameters of the allocation constraint (e.g. import and/or export limits in case of an external constraint),
- the frequency of the re-assessment
- the impact of the allocation constraint on single day-ahead coupling and single intraday coupling and how the application of the allocation constraint is in line with the objectives of the CACM Regulation (i.e. Article 3).
- The impact of the allocation constraint on neighbouring CCRs.

- If applicable, how the allocation constraint is considered in neighbouring CCRs or shared among several CCRs (e.g. an external constraint may be applied in a bidding zone with borders in several CCRs).
- During what time period the allocation constraint is applied.

Core NRAs request Core TSOs to demonstrate that the three reasons provided to use allocation constraints are compliant with Article 23 of the CACM Regulation, especially that the constraints cannot be transformed efficiently into maximum flows on CNEs. Core NRAs recall that they will not approve any external constraints if not duly justified against Article 23 of the CACM Regulation.

If an external constraint is applied, such an application needs to be harmonised and/or made compatible with neighbouring CCRs. Whether a certain external constraint is modelled via (a) the “Core Net Position” or (b) the “Global Net Position of that bidding zone” needs to be described.

Appendix 1 - Use of external constraints

Core NRAs welcome that Core TSOs add this appendix to describe the allocation constraints they intend to use. However, Core NRAs request Core TSOs to describe the methodology used by each TSO to calculate or determine the value of the allocation constraints in this appendix.

In addition to the methodology to calculate the external constraints, Core TSOs shall add to the appendix the detailed justifications that show that the used external constraints fulfil the requirements described in Article 23 of the CACM Regulation, in particular that the constraint is needed to maintain the operational security limits and cannot be transformed efficiently into maximum flows on CNEs. The justification must include sufficient detail on the exact operational security constraints violated if the allocation constraint is not applied. If the justification includes a study, a broad description as well as duration and frequency of redoing it shall be included.

Article 9 – Reliability margin methodology

Core NRAs welcome that Core TSOs provided a value for the common risk level. However, Core TSOs shall justify their choice to set the risk level at 10%.

Core NRAs cannot accept that Core TSOs undertake operational adjustments on the FRM values as described in Article 9(2)(b)(iii) of this proposal as this process gives too much freedom to the Core TSOs to diverge from the FRM calculation.

Core NRAs request Core TSOs to clarify in Article 9(4) of the proposal that the FRM values used before the first operational calculation can only be 10% of F_{\max} if no FRM values from already established flow-based market coupling initiatives exist. The proposal shall not foresee both cases as it seems to be the case now. Core NRAs wonder why FRMs are not calculated more frequently (for example, to better reflect seasonal changes).

Core NRAs expect Core TSOs to work towards reducing the FRM and request Core TSOs to provide a report on the work accomplished to reduce the FRM by one year after the go-live of the Core day-ahead capacity calculation.

The approval of the proposed update referred to in Article 9(7)(d) of this proposal implies an approval of a sub-methodology, and, is, thus, not acceptable (see fundamental remark of this document).

Article 10 – Generation shift keys methodology

Core NRAs request Core TSOs to describe in detail in the proposal how each Core TSO will determine its generation shift key (hereafter “GSK”) according to the three foreseen options presented in the proposal. The description and implementation shall be done in a progressively harmonized way. Also, the requirements of Article 24(1) of the CACM Regulation shall be considered.

Core NRAs also require Core TSOs to develop monitoring tools for the accuracy of the GSKs and a framework for the reporting to the Core NRAs.

The methodology for defining the GSK shall aim at minimising the overall reliability margins.

The approval of the proposed update referred to in Article 10(4)(d) of this proposal implies an approval of a sub-methodology, and, is, thus, not acceptable (see fundamental remark of this document).

Article 11 – Methodology for remedial actions in capacity calculation

Core NRAs request Core TSOs to explain the link between RAs and FAV, as requested before for Article 7 of this proposal as well as to reflect Article 25 of the CACM Regulation.

The methodology for RAs in capacity calculation shall at least include:

- As required by Article 25(1) of the CACM Regulation the list of RAs shall be taken into account in the coordinated capacity calculation also taking into account that RAs in a bidding zone with borders in several CCRs can only be assigned to one CCR.
- The frequency of the re-evaluation of the common list of RAs.
- How it is ensured that the same set of RAs is available for all capacity calculation time-frames as required by Article 25(6) of the CACM Regulation.
- Where relevant, the links to relevant methodologies under the CACM Regulation and/or provisions in the SO Regulation in order to ensure compatibility between the capacity calculation methodology and related methodologies.
- If costly remedial actions are needed to maintain a minimal RAM (Article 5(8) of this proposal) or a minimal import capacity (Article 14(4) of this proposal), they shall be mentioned in this article and make a link to the methodology in accordance with Article 35 of the CACM Regulation.

Core TSOs shall take into account comments made for Article 15 as well as Articles 11 and 15 of the proposal are closely linked.

Article 12 – Provision of the inputs

Core NRAs ask Core TSOs to define the deadline for the Core TSOs to provide the inputs to the capacity calculator. The proposal shall also describe what happens if the inputs are missing, incomplete or of a wrong format.

Article 13 – Mathematical description of the capacity calculation approach

In Core NRAs point of view, the LTA inclusion described in Article 14 of the proposal is part of the capacity calculation which this article is dedicated to. Consequently, Core TSOs shall include Article 14 in this one. Thus a duplication of equations (e.g. equation 7 and 9) can be avoided.

For a better general understanding of the methodology, the first sentence of chapter 2.2.1 of the explanatory note should be added to the beginning of this article. Clarity shall be improved by distinct descriptions (e.g. “bidding zone A” instead of “A” in Article 13(3) of this proposal) and precise descriptions of data sets used (e.g. D-2 CGM for F_{ref} in Article 13(4) of this proposal).

The possible impact of small zone-to-zone PTDFs on exchange capacity shall be described and its monitoring as well be added to this article.

Core NRAs would like Core TSOs to better explain the meaning of equation 5 and its correlation with figure 3 and figure 4 from the explanatory note. In addition, Core NRAs suggest to better elaborate the calculation of the maximum zone-to-zone PTDF taking into account the minimum PTDF factors mentioned in equation 5 from the proposal.

Article 14 – Long-term allocated capacities (LTA) inclusion

In addition to the inclusion in Article 13, some further changes of the content are requested.

All parameters used in this proposal shall have a single definition (e.g. NP_i in equations 6 and 8). Core NRAs require an explanation of criteria Core TSOs use to choose between the FAV concept and the virtual constraints to apply LTA inclusion as stated in Article 14(3) of this proposal as well as who is in charge to decide and how a decision on the method will be taken (e.g. what criteria are used).

Furthermore, Core TSOs shall include an interim coordination of the volumes of long-term products in case Core TSOs want to use LTA inclusion but the methodology in accordance with Article 10 of the FCA Regulation³ is not implemented at the go-live of the capacity calculation for day-ahead.

Since the minimum import constraint described in Article 14(4) of this proposal is not related to long-term allocation nor is it an allocation constraint, Core TSOs shall add a new article on those constraints with additional information and justification. In this new article Core NRAs require information on the explanation of the situations covered by this instrument, the exceptional circumstances mentioned and the difference to allocation constraints, a sufficient methodology on when and how these constraints are applied as well as which TSOs will use it (non-exhaustive list).

³ Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation

The requirements for this minimum import constraint mentioned above have to be sufficient for Core NRAs to accept the coverage of the costs occurring from redispatching and countertrading measures to ensure the import capacity.

Article 15 – Rules on the adjustment of power flows on critical network elements due to remedial actions

Core NRAs' request for a methodology or a description of the optimisation process was not fulfilled and still needs to be added to the proposal by Core TSOs. This shall include how the coordinated capacitor calculator uses available RAs for the sake of optimising cross-zonal capacities as required in Article 29(4) of the CACM Regulation. In addition to an insufficient level of detail, the objective function, the selection of CNEs and CNECs and order of RAs used by the RAO as well as a detailed description on the information exchange of applied RAs with neighbouring CCRs is missing. An approval of an updated version of the article later in time as suggested in Article 15(2)(c) and (d) of this proposal is only possible via the amendment procedure foreseen in the CACM Regulation.

The approval of the proposed update referred to in Article 15(2)(d) of this proposal implies an approval of a sub-methodology, and, is, thus, not acceptable (see fundamental remark of this document).

Core TSOs shall take into account comments made for Article 11 as well as Articles 11 and 15 of the proposal are closely linked.

Article 16 - Integration of cross border HVDC interconnectors located within the Core CCR

All terms used in this article should have a sufficient definition or explanation (e.g. ATC area, flow-based area, evolved flow-based, vertical hub). An elaboration on how commercial exchanges over the cross border HVDC interconnectors which are mentioned in Article 16(3) of this proposal are included in the capacity calculation described in Article 13 of the proposal shall be added.

Article 17 - Consideration of non-Core CCR borders

Core NRAs require more details on the standard hybrid coupling. An explanation on the basis of the assumptions of non-Core exchanges mentioned in Article 17(2) of this proposal shall be added and the feasibility study of advanced hybrid coupling referred to in Article 17(3) of this proposal should be studied in accordance with Article 25(5) of the proposal. In addition, all terms used in this article should have a sufficient definition (e.g. underlying schedules).

Core TSOs are asked to delete Article 17(4) of this proposal since it does not contain additional information to the article.

The obligation to an annual monitoring process shall be added to this article. The report may include at least an analysis on the impact of the standard hybrid coupling on the RAM compared to the future advanced hybrid coupling.

Article 18 – Calculation of the final flow-based domain

The “pre-solved process” shall be described and/or defined (e.g. what mathematical operations are applied when “pre-solving”, how are redundant CNEs/CNECs determined).

Article 19 - Precoupling backup and default processes

Core NRAs ask Core TSOs to refer the computation of “Default flow-based parameters” to the right article of the proposal as Article 20(1)(c) of the CACM Regulation does not exist and to delete the last sentence in Article 19(1)(b) of this proposal as it does not give any further information to base the approval upon.

Article 20 - ATC for Shadow Auctions

Core NRAs ask Core TSOs again to exclude all statements already covered by the fallback proposal and make a reference to Article 44 of the CACM Regulation instead. As a consequence, no reference to shadow auctions should be made but to the fallback procedure according to Article 21(3) of the CACM Regulation.

All parameters used in equations shall be defined (e.g. Margin (0)), all terms used shall be described sufficiently (e.g. constraints with zero margin) and references to external constraints shall be replaced by references to allocation constraints. In addition, Article 20(6)(b)(v) of this proposal shall be replaced by the complete description made in the explanatory note.

Article 21 - Capacity validation methodology

The exceptional situations referred to in Article 21(1)(a) and (1)(b) of this proposal shall be defined and specified. The way Articles (1)(c) and (3) of this proposal are written leads to the conclusion that if a TSO “mistakenly” sends corrupt input data, the same TSO can then request the use of default parameters. The proposal shall not indicate this option.

Regular reporting of reductions in line with Article 26 of the CACM Regulation has to be described.

Article 22 - Reviews and updates

Core TSOs are asked to add more information on the review process (e.g. when the review is taking place, the timespan between the publication of changes of any parameter and its implementation) and communication form of the review results. This article also needs to contain the statement that all changes and their impact have to be communicated to market participants and Core NRAs. If changes lead to an adoption of the methodology, Core TSOs have to amend the proposal as well. This has to be added to Article 22(5) of this proposal. In addition, the review of the allocation constraints in accordance with Article 27(4)(a) of the CACM Regulation shall include a re-assessment of the further need for allocation constraints.

Article 23 - Publication of data

Ensuring an equal treatment of market participants in all countries of the Core CCR, the data listed in Article 23(2)(e),(f) and (g) of this proposal shall be published for all of them. The reference to the compliance with national regulations shall be removed. Core NRAs note that the list may be enhanced due to a dedicated workshop as mentioned in Article 23(3) of this proposal.

Core NRAs expect the workshop mentioned in Article 23(3) of this proposal to be organised in time for the amended proposal. In this workshop, the parameters requested by stakeholders (GSKs, outages of CNEs, quality measures, information on I_{max} computation, FAV application, justification and activation of external constraints, transparency on “operational adjustment”, RAO results, assumptions about non-Core exchanges, likely corners as well as coordinated RAs) shall be discussed by Core TSOs, Core NRAs and stakeholders.

Consequently, Article 23(3) of this proposal shall be deleted and the respective templates shall be added as an appendix. The data-access point and the exhaustive list of all publication items shall be added to the proposal. In addition, all publication items in the amended proposal shall have information on the time of publication and the timeframe.

Article 24 - Monitoring and information to NRAs

Core NRAs request Core TSOs again to delete Article 24(3) of this proposal and to not put an obligation on Core NRAs.

Core NRAs request Core TSOs to organize the workshop mentioned in Article 24(5) of this proposal in time for the amended proposal. In the workshop, the parameters requested by Core NRAs by now (applied remedial actions on an hourly basis and justification for reductions made during the validation of cross-zonal capacity in accordance with Article 26.5 of the CACM Regulation, PST tap positions, vertical load forecast, production forecast, RES forecast, net position forecast, GSK assumed and GSK realized, FRM calculation method (D2CF, DACF and real time in N/N-1 + risk level), internal CNEC with average RAM/Fmax and PTDF, cross-zonal CNEC with average RAM/Fmax and PTDF, I_{max} , $\cos(\phi)$ and $T_{ambient}$ per line and hour etc) and further parameters that may be needed for efficient monitoring shall be discussed by Core TSOs and Core NRAs.

Consequently, Article 24(5) of this proposal shall be deleted and the respective templates shall be added as an appendix. In addition, all publication items in the amended proposal shall have information on the time and frequency of publication. This article shall also include a description of access arrangements (e.g. single point of access, procedures) and the obligation to provide monitoring environment and a handbook to the Core NRAs before go-live date.

Article 25 - Timescale for implementation of the Core flow-based day-ahead capacity calculation methodology

This article lacks a sufficient implementation plan and description as required by Article 9(9) of the CACM Regulation. Concrete milestones with interdependencies and dates shall be added as well as an estimated go-live date for the advanced hybrid coupling.

Core TSOs are again asked to add an explanation for the late go live date in S1 2020 in the explanatory note.

Core TSOs shall also elaborate in the proposal on the reasons why the implementation of the MCO plan in accordance with Article 7(3) of the CACM Regulation is needed at a border before it is possible to apply flow-based capacity calculation.

Please note that some Core NRAs require the results of the parallel run mentioned in Article 25(2) of this proposal for their national approval. The timeline of this analysis shall be discussed with Core NRAs.

4 Conclusion

All Core NRAs have assessed, consulted and closely cooperated and coordinated to reach the agreement that the proposal for the day-ahead capacity calculation methodology does not meet all requirements of the CACM Regulation, is far from being enforceable and as such cannot be approved by all Core NRAs.

According to Article 9(12) of the CACM Regulation, Core NRAs request an amendment to the proposal for the day-ahead capacity calculation methodology submitted by the Core TSOs pursuant to Article 20ff. of the CACM Regulation.

The amended proposal shall take into account the Core NRAs position stated above, and shall be submitted by all Core TSOs no later than two months following the requirement from the regulatory authorities, in accordance with Article 9(12) of the CACM Regulation.

All Core NRAs must make their decisions to request an amendment to the proposal for the day-head capacity calculation methodology, on the basis of this agreement, by 20 March 2018.



**Request for Amendment by the Core NRAs
agreed at the Core Energy Regulators' Regional Forum**

of

**the “Core CCR TSOs’ proposal for the regional design of the
intraday common capacity calculation methodology in
accordance with Article 20ff. of Commission Regulation (EU)
2015/1222 of 24 July 2015”**

9 March 2018

1 INTRODUCTION AND LEGAL CONTEXT

Article 20 of the CACM Regulation¹ requires that no later than 10 months after the approval of the proposal for a capacity calculation region (hereafter “CCR”) in accordance with Article 15(1) of the CACM Regulation, all TSOs in each CCR shall submit a proposal for a common capacity calculation methodology.

The Core TSOs’ proposal for the intraday capacity calculation methodology was received by the last Core NRA on 20 September 2017.

This agreement of the Core NRAs shall provide evidence that a decision on the proposal for the intraday capacity calculation methodology does not, at this stage, need to be adopted by ACER pursuant to Article 9(11) of the CACM Regulation. It is intended to constitute the basis on which the **Core NRAs will each subsequently request an amendment** to the proposal for the intraday capacity calculation methodology pursuant to Article 9(12) of the CACM Regulation.

The legal provisions that lie at the basis of the proposal for the intraday capacity calculation methodology, and this Core NRAs agreement on the proposal for the intraday capacity calculation methodology, can be found in Articles 3, 8, 9, and 20ff. of the CACM Regulation:

Article 3 Objectives of capacity allocation and congestion management cooperation

This Regulation aims at:

(a) Promoting effective competition in the generation, trading and supply of electricity;

(b) Ensuring optimal use of the transmission infrastructure;

(c) Ensuring operational security;

(d) Optimising the calculation and allocation of cross-zonal capacity;

(e) Ensuring fair and non-discriminatory treatment of TSOs, NEMOs, the Agency, regulatory authorities and market participants;

(f) Ensuring and enhancing the transparency and reliability of information;

(g) Contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union;

¹ Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management

(h) Respecting the need for a fair and orderly market and fair and orderly price formation;

(i) Creating a level playing field for NEMOs;

(j) Providing non-discriminatory access to cross-zonal capacity

Article 8 TSOs' tasks related to single day-ahead and intraday coupling

1. In Member States electrically connected to another Member State all TSOs shall participate in the single day-ahead and intraday coupling.

2. TSOs shall:

(...)

(c) establish and perform capacity calculation in accordance with Articles 14 to 30;

(...)

Article 9 Adoption of terms and conditions or methodologies

1. TSOs and NEMOs shall develop the terms and conditions or methodologies required by this Regulation and submit them for approval to the competent regulatory authorities within the respective deadlines set out in this Regulation. Where a proposal for terms and conditions or methodologies pursuant to this Regulation needs to be developed and agreed by more than one TSO or NEMO, the participating TSOs and NEMOs shall closely cooperate. TSOs, with the assistance of ENTSO for Electricity, and all NEMOs shall regularly inform the competent regulatory authorities and the Agency about the progress of developing these terms and conditions or methodologies.

(...)

5. Each regulatory authority shall approve the terms and conditions or methodologies used to calculate or set out the single day-ahead and intraday coupling developed by TSOs and NEMOs. They shall be responsible for approving the terms and conditions or methodologies referred to in paragraphs 6, 7 and 8.

(...)

7. The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region:

(a) the common capacity calculation methodology in accordance with Article 20(2);

(b) (...)

(...)

9. *The proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation. Proposals on terms and conditions or methodologies subject to the approval by several or all regulatory authorities shall be submitted to the Agency at the same time that they are submitted to regulatory authorities. Upon request by the competent regulatory authorities, the Agency shall issue an opinion within three months on the proposals for terms and conditions or methodologies.*

10. *Where the approval of the terms and conditions or methodologies requires a decision by more than one regulatory authority, the competent regulatory authorities shall consult and closely cooperate and coordinate with each other in order reach an agreement. Where applicable, the competent regulatory authorities shall take into account the opinion of the Agency. Regulatory authorities shall take decisions concerning the submitted terms and conditions or methodologies in accordance with paragraphs 6, 7 and 8, within six months following the receipt of the terms and conditions or methodologies by the regulatory authority or, where applicable, by the last regulatory authority concerned.*

(...)

12. *In the event that one or several regulatory authorities request an amendment to approve the terms and conditions or methodologies submitted in accordance with paragraphs 6, 7 and 8, the relevant TSOs or NEMOs shall submit a proposal for amended terms and conditions or methodologies for approval within two months following the requirement from the regulatory authorities. The competent regulatory authorities shall decide on the amended terms and conditions or methodologies within two months following their submission. Where the competent regulatory authorities have not been able to reach an agreement on terms and conditions or methodologies pursuant to paragraphs (6) and (7) within the two-month deadline, or upon their joint request, the Agency shall adopt a decision concerning the amended terms and conditions or methodologies within six months, in accordance with Article 8(1) of Regulation (EC) No 713/2009. If the relevant TSOs or NEMOs fail to submit a proposal for amended terms and conditions or methodologies, the procedure provided for in paragraph 4 of this Article shall apply.*

14. *TSOs and NEMOs responsible for establishing the terms and conditions or methodologies in accordance with this Regulation shall publish them on the internet after approval by the competent regulatory authorities or, if no such approval is required, after their establishment, except where such information is considered as confidential in accordance with Article 13.*

Article 20 Introduction of flow-based capacity calculation methodology

1. *For the day-ahead market time-frame and intraday market time-frame the approach used in the common capacity calculation methodologies shall be a flow-based approach, except where the requirement under paragraph 7 is met.*

2. No later than 10 months after the approval of the proposal for a capacity calculation region in accordance with Article 15(1), all TSOs in each capacity calculation region shall submit a proposal for a common coordinated capacity calculation methodology within the respective region. The proposal shall be subject to consultation in accordance with Article 12. The proposal for the capacity calculation methodology within regions pursuant to this paragraph in capacity calculation regions based on the 'North-West Europe' ('NWE') and 'Central Eastern Europe' ('CEE') as defined in points (b), and (d) of point 3.2 of Annex I to Regulation (EC) No 714/2009 as well as in regions referred to in paragraph 3 and 4, shall be complemented with a common framework for coordination and compatibility of flow-based methodologies across regions to be developed in accordance with paragraph 5.

(...)

8. To enable market participants to adapt to any change in the capacity calculation approach, the TSOs concerned shall test the new approach alongside the existing approach and involve market participants for at least six months before implementing a proposal for changing their capacity calculation approach.

9. The TSOs of each capacity calculation region applying the flow-based approach shall establish and make available a tool which enables market participants to evaluate the interaction between cross-zonal capacities and cross-zonal exchanges between bidding zones.

Article 21 Capacity calculation methodology

1. The proposal for a common capacity calculation methodology for a capacity calculation region determined in accordance with Article 20(2) shall include at least the following items for each capacity calculation time-frame:

(a) methodologies for the calculation of the inputs to capacity calculation, which shall include the following parameters:

- (i) a methodology for determining the reliability margin in accordance with Article 22;
- (ii) the methodologies for determining operational security limits, contingencies relevant to capacity calculation and allocation constraints that may be applied in accordance with Article 23;
- (iii) the methodology for determining the generation shift keys in accordance with Article 24;
- (iv) the methodology for determining remedial actions to be considered in capacity calculation in accordance with Article 25.

(b) a detailed description of the capacity calculation approach which shall include the following:

- (i) a mathematical description of the applied capacity calculation approach with different capacity calculation inputs;
- (ii) rules for avoiding undue discrimination between internal and cross-zonal exchanges to ensure compliance with point 1.7 of Annex I to Regulation (EC) No 714/2009;
- (iii) rules for taking into account, where appropriate, previously allocated cross-zonal capacity;

- (iv) rules on the adjustment of power flows on critical network elements or of cross-zonal capacity due to remedial actions in accordance with Article 25;*
 - (v) for the flow-based approach, a mathematical description of the calculation of power transfer distribution factors and of the calculation of available margins on critical network elements;*
 - (vi) for the coordinated net transmission capacity approach, the rules for calculating cross-zonal capacity, including the rules for efficiently sharing the power flow capabilities of critical network elements among different bidding zone borders;*
 - (vii) where the power flows on critical network elements are influenced by cross-zonal power exchanges in different capacity calculation regions, the rules for sharing the power flow capabilities of critical network elements among different capacity calculation regions in order to accommodate these flows.*
- (c) a methodology for the validation of cross-zonal capacity in accordance with Article 26.*

2. For the intraday capacity calculation time-frame, the capacity calculation methodology shall also state the frequency at which capacity will be reassessed in accordance with Article 14(4), giving reasons for the chosen frequency.

3. The capacity calculation methodology shall include a fallback procedure for the case where the initial capacity calculation does not lead to any results.

4. All TSOs in each capacity calculation region shall, as far as possible, use harmonised capacity calculation inputs. By 31 December 2020, all regions shall use a harmonised capacity calculation methodology which shall in particular provide for a harmonised capacity calculation methodology for the flow-based and for the coordinated net transmission capacity approach. The harmonisation of capacity calculation methodology shall be subject to an efficiency assessment concerning the harmonisation of the flow-based methodologies and the coordinated net transmission capacity methodologies that provide for the same level of operational security. All TSOs shall submit the assessment with a proposal for the transition towards a harmonised capacity calculation methodology to all regulatory authorities within 12 months after at least two capacity calculation regions have implemented common capacity calculation methodology in accordance with Article 20(5).

Article 22 Reliability margin methodology

1. The proposal for a common capacity calculation methodology shall include a methodology to determine the reliability margin. The methodology to determine the reliability margin shall consist of two steps. First, the relevant TSOs shall estimate the probability distribution of deviations between the expected power flows at the time of the capacity calculation and realised power flows in real time. Second, the reliability margin shall be calculated by deriving a value from the probability distribution.

2. The methodology to determine the reliability margin shall set out the principles for calculating the probability distribution of the deviations between the expected power flows at the time of the capacity

calculation and realised power flows in real time, and specify the uncertainties to be taken into account in the calculation. To determine those uncertainties, the methodology shall in particular take into account:

- (a) unintended deviations of physical electricity flows within a market time unit caused by the adjustment of electricity flows within and between control areas, to maintain a constant frequency;*
- (b) uncertainties which could affect capacity calculation and which could occur between the capacity calculation time-frame and real time, for the market time unit being considered.*

3. In the methodology to determine the reliability margin, TSOs shall also set out common harmonised principles for deriving the reliability margin from the probability distribution.

4. On the basis of the methodology adopted in accordance with paragraph 1, TSOs shall determine the reliability margin respecting the operational security limits and taking into account uncertainties between the capacity calculation time-frame and real time, and the remedial actions available after capacity calculation.

5. For each capacity calculation time-frame, the TSOs concerned shall determine the reliability margin for critical network elements, where the flow-based approach is applied, and for cross-zonal capacity, where the coordinated net transmission capacity approach is applied.

Article 23 Methodologies for operational security limits, contingencies and allocation constraints

1. Each TSO shall respect the operational security limits and contingencies used in operational security analysis.

2. If the operational security limits and contingencies used in capacity calculation are not the same as those used in operational security analysis, TSOs shall describe in the proposal for the common capacity calculation methodology the particular method and criteria they have used to determine the operational security limits and contingencies used for capacity calculation.

3. If TSOs apply allocation constraints, they can only be determined using:

- (a) constraints that are needed to maintain the transmission system within operational security limits and that cannot be transformed efficiently into maximum flows on critical network elements; or*
- (b) constraints intended to increase the economic surplus for single day-ahead or intraday coupling.*

Article 24 Generation shift keys methodology

- 1. The proposal for a common capacity calculation methodology shall include a proposal for a methodology to determine a common generation shift key for each bidding zone and scenario developed in accordance with Article 18.*
- 2. The generation shift keys shall represent the best forecast of the relation of a change in the net position of a bidding zone to a specific change of generation or load in the common grid model. That forecast shall notably take into account the information from the generation and load data provision methodology.*

Article 25 Methodology for remedial actions in capacity calculation

- 1. Each TSO within each capacity calculation region shall individually define the available remedial actions to be taken into account in capacity calculation to meet the objectives of this Regulation.*
- 2. Each TSO within each capacity calculation region shall coordinate with the other TSOs in that region the use of remedial actions to be taken into account in capacity calculation and their actual application in real time operation.*
- 3. To enable remedial actions to be taken into account in capacity calculation, all TSOs in each capacity calculation region shall agree on the use of remedial actions that require the action of more than one TSO.*
- 4. Each TSO shall ensure that remedial actions are taken into account in capacity calculation under the condition that the available remedial actions remaining after calculation, taken together with the reliability margin referred to in Article 22, are sufficient to ensure operational security.*
- 5. Each TSO shall take into account remedial actions without costs in capacity calculation.*
- 6. Each TSO shall ensure that the remedial actions to be taken into account in capacity calculation are the same for all capacity calculation time-frames, taking into account their technical availabilities for each capacity calculation time-frame.*

Article 26 Cross-zonal capacity validation methodology

- 1. Each TSO shall validate and have the right to correct cross-zonal capacity relevant to the TSO's bidding zone borders or critical network elements provided by the coordinated capacity calculators in accordance with Articles 27 to 31.*

2. *Where a coordinated net transmission capacity approach is applied, all TSOs in the capacity calculation region shall include in the capacity calculation methodology referred to in Article 21 a rule for splitting the correction of cross-zonal capacity between the different bidding zone borders.*
3. *Each TSO may reduce cross-zonal capacity during the validation of cross-zonal capacity referred to in paragraph 1 for reasons of operational security.*
4. *Each coordinated capacity calculator shall coordinate with the neighbouring coordinated capacity calculators during capacity calculation and validation.*
5. *Each coordinated capacity calculator shall, every three months, report all reductions made during the validation of cross-zonal capacity in accordance with paragraph 3 to all regulatory authorities of the capacity calculation region. This report shall include the location and amount of any reduction in cross-zonal capacity and shall give reasons for the reductions.*
6. *All the regulatory authorities of the capacity calculation region shall decide whether to publish all or part of the report referred to in paragraph 5.*

2 CORE TSOs' PROPOSAL

The Core TSOs' proposal for the intraday capacity calculation methodology was consulted on by Core TSOs through ENTSO-E from 30 June 2017 to 31 July 2017 in line with Article 20(2) and Article 12 of the CACM Regulation.

In the public consultation, Core TSOs were seeking input from stakeholders and market participants on the draft proposal. Market participants were asked to provide Core TSOs with their feedback via the online survey platform.

Core NRAs closely observed, analysed and continuously provided feedback and guidance to Core TSOs during various meetings in 2016, 2017 and 2018 and through a shadow opinion of all Core NRAs in August 2017.

The final proposal for the intraday capacity calculation methodology, dated 15 September 2017, was received by the last Core NRA on 20 September 2017. The proposal includes proposed timescales for its implementation and a description of its expected impact on the objectives of CACM Regulation, in line with Article 9(9) of CACM Regulation.

Article 9(10) of the CACM Regulation requires Core NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement, and make decisions within six months following receipt

of submissions of the last Core NRA concerned. A decision is therefore required by each Core NRA by 20 March 2018.

The proposal for the intraday capacity calculation methodology, as understood by the Core NRAs, foresees the introduction of a **flow-based capacity calculation methodology** in the Core CCR at the intraday timeframe.

3 CORE NRAs' ASSESSMENT

Core NRAs request Core TSOs to amend the proposal pursuant Article 9(12) of the CACM Regulation and **to take into account all comments made in the request for amendment on the proposal for the day-ahead capacity calculation methodology that also applies to the proposal for the intraday capacity calculation methodology.**

In addition, the proposal delivered by Core TSOs does not contain a detailed, consistent and fully CACM Regulation-compliant description of the intraday capacity calculation. It does not contain an adequate number, frequency and description of recalculations in the intraday timeframe in Article 15 (Intraday capacity calculation) of the proposal but a reference to a so called deliverable report which shall be provided to Core NRAs in Q1 2018, describing the approach to finalize the open issues on sub-methodologies. This report would display a timeline until the frequency of recalculation will be finalized by Core TSOs on a date to be precised in this report.

As Core NRAs cannot approve sub-methodologies or methodologies that imply subsequent approvals or refer to additional deliveries, they do not consider the approach proposed by Core TSOs as feasible. Core NRAs then urge Core TSOs to add sufficient descriptions of the whole methodology in the amended proposal.

Besides the missing sub-methodology, the proposal for the intraday capacity calculation methodology lacks the level of details needed to approve the intraday capacity calculation. Core NRAs expect to receive one single document containing a detailed, consistent and fully CACM Regulation-compliant description of the intraday capacity calculation methodology, containing an adequate number, frequency and description of recalculations, including the length of the calculation process so that it is know when the calculated capacity will be released to the market.

Further on, consistency between the intraday and day-ahead capacity calculation methodology shall be assured. Further on, the alignment with preceding processes (e.g. day-ahead coupling and post coupling processes and coordinated operational security assessment and the frequency of the coordinated recalculation of cross-zonal capacity) shall be described.

Moreover, Core TSOs should justify why the implementation of the intraday capacity calculation methodology is beyond the deadline provided in the CACM Regulation, i.e. 31 December 2020.

Not all requirements of the CACM Regulation are covered in the proposal. Core TSOs failed to fulfil their obligation and Core NRAs are not in a position to approve a proposal which is incomplete, leaves wide room for interpretations and is far from being enforceable.

4 Conclusion

All Core NRAs have assessed, consulted and closely cooperated and coordinated to reach the agreement that the proposal for the intraday capacity calculation methodology does not meet all requirements of the CACM Regulation, is far from being enforceable and as such cannot be approved by all Core NRAs.

According to Article 9(12) of the CACM Regulation, Core NRAs request an amendment to the proposal for the intraday capacity calculation methodology submitted by the Core TSOs pursuant to Article 20ff. of the CACM Regulation.

The amended proposal shall take into account the Core NRAs position stated above, and shall be submitted by all Core TSOs no later than two months following the requirement from the regulatory authorities, in accordance with Article 9(12) of the CACM Regulation.

All Core NRAs must make their decisions to request an amendment to the proposal for the intraday capacity calculation methodology, on the basis of this agreement, by 20 March 2018.