# NON-PAPER OF ALL CORE REGULATORY AUTHORITIES

# ON

# The Core CCR TSOs' 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

# AND ON

# The Core CCR TSOs' regional design of the intraday common capacity calculation methodology in accordance with Article 20ff. of Commission Regulation (EU) 2015/1222 of 24 July 2015

**18 September 2018**

## I. Introduction and legal context

This document elaborates an agreement of Core Regulatory Authorities (hereafter Core NRAs) on a working, RCC (Regional Coordination Committee) level on the amended Core Transmission System Operators' (hereafter TSOs) proposals for the Core CCR TSOs' regional design of the day-ahead common capacity calculation methodology (hereafter DA CCM proposal) and for the Core CCR TSOs' regional design of the intraday common capacity calculation methodology (hereafter ID CCM proposal) in accordance with Article 20ff. of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter CACM Regulation).

This agreement shall provide important remarks of Core NRAs for an adoption of the amended DA and ID CCM proposals by the Agency pursuant to Article 9(12) of the CACM Regulation. This paper is intended to provide Core NRAs' information and opinions on the CCMs as support for the decisions of the Agency.

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 20, 21, 22, 23, 24 and 26 of the CACM Regulation.

## II. Core TSOs' DA and ID CCMs

The DA and ID CCM proposals were 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, Core TSOs published an explanatory note.

During 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 ENTSO-E online survey platform.

Core NRAs closely observed, analyzed and continuously provided feedback and guidance to Core TSOs during various meetings in 2016, 2017 and 2018 and through shadow opinions on the DA and ID CCM proposals in August 2017.

The DA and ID CCM proposals, dated 15 September 2017, were received by the last Core NRA on 20 September 2017. The proposals include proposed timescales for their implementation and a description of their expected impact on the objectives of the CACM Regulation, in line with Article 9(9) of the 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 was taken by the Core Energy Regulators' Regional Forum (hereafter CERRF) on 9 March 2018 by requesting amendments (hereafter RfAs) on the DA and ID CCM proposals. The last Core TSO received the RfAs on 4 April 2018.

The amended DA and ID CCM proposals dated 4 June 2018 were received by the last Core NRA on 19 June 2018. On 16 August 2018, the members of CERRF did not reach a unanimous agreement to request the Agency to extend the deadline for a decision or to request the Agency to adopt a decision on the amended Core DA and ID CCMs proposals pursuant to Article 21ff. of the CACM Regulation as no unanimous agreement was reached beforehand to approve the proposals. In that case, the Rules of Procedure of CERRF require the CERRF Chair to refer the decision to the Agency – in accordance with Article 9(12) of the CACM Regulation – on behalf of the Core NRAs. The CERRF Chair acted in line by sending a letter to the

Agency on 21 August 2018. This non-paper shall give the Agency an indepth view on common and on dissenting opinions of Core NRAs to contribute to the letter by the CERRF Chair.

## III. Core NRAs' position

Core NRAs expect the amended DA and ID CCM proposals to be detailed, consistent and fully compliant with the CACM Regulation – in that sense also fulfilling all requirements and objectives listed in the CACM Regulation, excluding all indications that indicate that national legislation could repeal or overrule the framework and principles established by European regulations and respective methodologies. The methodologies are lacking clear, transparent and harmonized definitions, as well as defined and justified thresholds or values.

A decision by the Agency shall increase the overall quality of the methodologies and give more clarity on the compliance with European legislation. To support the Agency on this, Core NRAs provide firstly common recommendations to improve the methodologies to which all Core NRAs jointly agree and secondly conflicting opinions where no agreement between all Core NRAs could be reached.

**Core NRAs jointly agree:**

### 1. On the general quality of the CCMs

Core NRAs identified that requirements of the CACM Regulation were not sufficiently met in the amended DA and ID CCM proposals. Current description allows – during the whole process of capacity calculation – individual TSOs to have the option to discretionary use or modify several inputs before or during the calculation process. It is preferred to have a clear, transparent and harmonized (ideally automated) set of criterias for processing, with discretionary modifications fully excluded or justified exceptions. Additionally, Core NRAs expect that:

- the amended DA and ID CCM proposals contain a tool for market participants to evaluate the interactions between cross-zonal capacities and cross-zonal exchanges between bidding zones in accordance with Article 20(9) of the CACM Regulation, information about the setup and operation of one or more coordinated capacity calculator(s) (hereafter CCCs) in accordance with Article 27(2) and Article 29 of the CACM Regulation, a smooth process if there is more than one CCC operating in one capacity calculation region (hereafter CCR) and information about the coordination of one or more CCC(s) with neighbouring CCCs in accordance with Articles 26(4) and 29(9) of the CACM Regulation and more precise timing of the transmission of calculation inputs to the CCC(s).
- Core TSOs explain how the tasks listed in Article 8(2)(e) of the CACM Regulation are carried out.
- Core TSOs add an exact timeline regarding the DA tasks, steps and processes undertaken between 15.00 D-2 as required by Article 14(3) of the CACM Regulation and the approved firmness deadline pursuant to Article 69 of the CACM Regulation.

### 2. On the definitions and interpretations (Article 2 DA CCM and ID CCM)

In Article 2 of the amended DA and ID CCM proposals the order of abbreviation and explanatory text shall be in the same order in each paragraph.

### 3. On the cross-zonal capacities for the day-ahead market (Article 4 DA CCM)

The amended DA CCM proposal provides a much better insight on the overall process in comparison to the DA CCM proposal submitted in September 2017. Nevertheless further information and justification on the order and the necessity of each and every described step in Article 4(6) of the amended DA CCM proposal is needed (e.g. whether a new flow-based computation as described in Article 4(6)(g)(i)-(iii) is needed or whether the LTN adjustment will be based on the same computation as described in Article 4(6)(f)(i)-(iii)). It is not clear throughout the proposal if the application of the remedial action optimization (hereafter RAO) takes place before the inclusion of long-term allocated capacities (hereafter LTAs) or afterwards; besides, the choice for this order should be properly justified. In addition, Core NRAs expect that those kind of entities that could act on behalf of TSOs as mentioned in Article 4(3) of the amended DA CCM proposal shall be described in more detail. If appropriate, a reference to regional security coordinators (hereafter RSCs) – which are required by the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter SO Regulation) – and their tasks shall be made. If envisaged, a delegation of Core TSOs' tasks to a third party shall be in line with Article 81 of the CACM Regulation.

Further on, coordination with neighbouring CCRs during the validation process is not sufficiently described and the criteria for the usage of Final Adjustment Value (hereafter FAV) in this context is not specified. The Article refers to Article 21 of the same document, which only contains the recommendation that the regional CCC *"(…) shall coordinate with neighbouring coordinated capacity calculators during the validation process, where at least the reductions in cross-zonal capacity are shared among them. Any information on decreased cross-zonal capacity from neighbouring coordinated capacity calculators shall be provided to Core TSOs. Core TSOs may then apply the appropriate reductions of cross-zonal capacities (…)*" that is in the same Article specified as "*TSO may use a positive value for $FAV$"* if *"a exceptional contingency or forced outage as defined in Article 3 of SO GL"* occurs.

### 4. On the methodology for critical network elements and contingencies selection (Article 5 DA CCM and Article 6 ID CCM)

Core NRAs agree that criteria or thresholds that are comprehensible for market participants and NRAs have to be used for the selection of critical network elements (hereafter CNEs) with a contingency (hereafter CNECs) that are sensitive to the remedial actions (hereafter RAs) as mentioned in Article 5(6)(b) of the amended DA CCM proposal. Article 5(7) of the amended DA CCM proposal gives Core TSOs the possibility to include or exclude CNECs for the capacity calculation. Core TSOs name "*extreme weather conditions, untypical flow conditions or topology or grid situations*" as reasons to do so. Core NRAs do not agree with such an approach, consider it unaprovable and expect a sufficient list of strongly reglemented cases in which CNECs can be exluded.

In 5(4) of the amended DA CCM proposal Core TSOs state that "*[u]ntil a compliant methodology for Article 75 SO GL enters into force, and pursuant to Article 23(2) of the CACM regulation, the association of contingencies to CNEs will be based on each TSO's needs and operational experience."* Article 23(2) of the CACM Regulation requests that "*[i]f 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*". Core TSOs did not provide a sufficient detailed methodology to fulfil that requirement. In addition, a methodology for the selection of contingencies to cover the period until the list in line with Article 33 of the SO Regulation is used, shall also be included in Article 5(4) of the amended DA CCM proposal.

Furthermore, Core NRAs find it insufficient for an approvable proposal to – instead of clear descriptions on their choice of parameters – merely contain references to later tests. All future improvements on this

methodology and criteria shall be covered within the review process of Article 22 of the amended DA CCM proposal.

### 5. On the methodology for operational security limits (Article 6 DA CCM and Article 7 ID CCM)

Core NRAs asked in their RfAs not to use fixed limits for the maximum admissible current (hereafter $I_{max}$) for all market time units of a year and preferred dynamic values as the target solution, seasonal limits as the fallback solution depending on different situations such as the temperature and asked TSOs to name which TSO is using which principle. However, during further discussions Core NRAs learned that the choice of calculation principle not only depends on the TSO but also on the type of grid element. Consequently, Core TSOs shall prospectively use dynamic values as the target solution and seasonal limits as the fallback solution for all elements that are sensitive to temperature changes or similar. Core NRAs expect (i) a list of different types of grid elements, (ii) the principle used for $I_{max}$ calculation by each TSO, (iii) when a change to dynamic values is envisaged and (iv) a justification if any other principle is used. This list shall be added to the explanatory note rather than the methodologies themselves and Core TSOs shall inform Core NRAs in the yearly review in line with Article 22 of the amended DA CCM proposal on the developments to use dynamic values for all sensitive grid elements. The explanatory note shall contain descriptions of how the $I_{max}$ is calculated by all named options (ideally with formulas). Harmonization towards the application of dynamic line rating to the maximum extent possible should be the goal of the Core TSOs. The same values for $I_{max}$ shall be used accordingly in the ID CCM.

Furthermore, Core TSOs assume that *"(…) the share of the CNE loading by reactive power is negligible (i.e. the angle φ=0)."* Cos(φ) is here considered equal to 1, however during the validation phase reactive power flows of up to 20% can be expected. Also in the explanatory note, TSOs state that due to significant reactive flows cos(φ) may significantly change. It should be clear that cos(φ) and any limitations due to reactive power need to be taken care of in the methodology for operational security limits, as the capacity calculation is based on direct current. To then reduce available margin to accommodate for reactive power is yet another discretion for TSOs to alter the outcome of capacity calculation. Core NRAs are reluctant to provide this additional discretionary power without having information on the methodology and processes used by Core TSOs in this respect.

### 6. On the Final Adjustment Values (Article 7 DA CCM and Article 8 ID CCM)

In their RfAs, Core NRAs asked Core TSOs to add an exhaustive list of justifications that allow them to use a FAV on a CNE. The use of negative FAVs to increase the remaining available margin (hereafter RAM) on CNEs is generally understood and does not require extensive justification as long as it does not endanger grid security and the quality of the D2CF forecasts. However, a decrease of the RAM by a positive FAV could reduce the capacity provided to the market if the respective CNE happens to be actively limiting the flow-based domain. In those cases, clear and reasonable justifications are needed. Article 21 of the amended DA CCM proposal lists situations in which the FAV can be used to reduce the RAM. Core NRAs welcome that the list was extended compared to the list in the DA CCM proposal submitted in September 2017. However, they remark that both an exhaustive list of reasons of FAV usage and a description of the link between FAV and RAs are missing.

### 7. On the generation shift keys methodology (Article 10 DA CCM and Article 11 ID CCM)

In their RfAs, Core NRAs asked for a higher level of harmonisation to calculate the generation shift keys (hereafter GSKs) in order to create a level playing field and to avoid discrimination. However, this demand of the Core NRAs is not reflected in the current proposal. Some parts of the proposal still give a very broad

discretion to TSOs (e.g. Article 10(1)(b) of the amended DA CCM proposal) and for some Core TSOs even exceptions are included. Core NRAs do not consider that the mere notion that "*each TSO provides GSKs that respect the specific characteristics of the generation in their own grid*" can be deemed to be a methodology that determines a common GSK for each bidding zone and scenario, as requested in the CACM Regulation.

Core NRAs expect Core TSOs to apply ex-ante agreed upon, clear and transparent rules, that effectively serve to avoid TSO discretionary intervention as far as possible. These rules should aim at a good level of representativeness of effective power shifts, through the application of automatic, harmonized and transparent measures taking into account weather and wind forecasts (for solar and wind generation).

### 8. On the methodology for remedial actions in capacity calculation (Article 11 DA CCM and Article 12 ID CCM)

Core NRAs expect a higher level of coordination between CCRs than presented in Article 11(2) of the amended DA CCM proposal and 12(2) of the amended ID CCM proposal to ensure an efficient use of RAs. A reference to other methodologies shall be made, if those cover inter-CCR coordination. As required by Article 25(1) of the CACM Regulation the list of RAs shall be taken into account in the coordinated capacity calculation. Furthermore, it should be taken into account that RAs in a bidding zone with borders in several CCRs can only be assigned to one CCR. However, the notion that "*TSO taking control of the remedial action shall take care, when defining it, of a consistent use in its potential application in both regions to ensure a secure power system operation*" lacks transparency in this regard. For efficiency, all RAs which are taken into account in the DA and ID capacity calculations shall also be part of the processes such as the methodologies in accordance with Article 35 of the CACM Regulation and Article 76 of the SO Regulation.

### 9. On the mathematical description of the capacity calculation approach (Article 12 DA CCM and Article 13 ID CCM)

For reasons of clarity Core NRAs prefer that the mathematical description of the capacity calculation contains references to the overall steps mentioned in Article 4(6) of the amended DA CCM proposal and is merged with Article 13, 14 and 15 of the amended DA CCM proposal to better understand at which point of the capacity calculation process the minimum RAM, the inclusion of LTA and the RAO are applied. Same applies for the amended ID CCM proposal: articles 13 and 14 of it shall be merged accordingly to better understand at which point of the ID capacity calculation process the RAO is applied.

### 10. On the adjustment for minimum RAM (Article 13 DA CCM)

Core NRAs welcome the approach for minimum RAM. Core NRAs require more information on how Core TSOs evaluate whether or not they have insufficient available RAs as mentioned in Article 13(6) of the amended DA CCM proposal given that this assessment would take place before the DA market clearing. An explanation should be given in the explanatory note and it should be described if RAs within national processes and/or within the process in accordance with Article 35 of the CACM Regulation is referred to. In the latter case, a reference to the respective article is required.

### 11. On the long term allocated capacities (LTA) inclusion (Article 14 DA CCM)

According to Article 21(1)(b)(iii) of the CACM Regulation, the description of the capacity calculation approach shall include rules for taking into account, where appropriate, previously allocated cross-zonal capacity.

According to Article 14(1)(b) of the DA CCM proposal, until the entry into force of the long-term capacity calculation methodology pursuant to the Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation (FCA Regulation), "*LTA will be commonly coordinated on an annual basis during an all Core TSOs meeting*". Core NRAs are of the opinion that such a provision is not detailed enough to be an adequate rule in line with the CACM Regulation.

In Core NRAs' opinion the parameter $LTA_{margin}$ cannot be in equation 12, as this is the one that checks whether or not it is needed to adopt this parameter. Therefore, either the parameter $LTA_{margin}$ should be suppressed in equation 12, or Article 14(3) of the amended DA CCM proposal should state "if at least [...] is smaller than zero before the application of the $LTA_{margin}$".

### 12. On the rules on adjustment of power flows on critical network elements due to remedial actions (Article 15 DA CCM and Article 14 ID CCM)

Since the number of non-costly RAs the RAO can use is limited, it could be possible that some CNECs remain congested. In this case, the consequence of needing costly RAs shall be described and a reference to the methodology in accordance to Article 35 of the CACM Regulation shall be made. If the implementation of the methodology in accordance with Article 35 of the CACM Regulation is later than the implementation of the CCM itself, a description on the interim phase shall be added (e.g. congested CNECs after RAO shall be relieved by national costly RAs).

All Core NRAs are of the view that the objective function is to be further analysed (relevance of the chosen criterion), as well as the fact that the optimization is performed around the foreseen operating point of the grid (which does not appear in the formula given by Article 15(2)(a) of the amended DA CCM proposal). In addition the selection of CNEs and CNECs as well we the order of RAs used by the RAO, a detailed description on the information exchange of applied RAs with neighbouring CCRs as well as information on the additional loading on CNECs, resulting from the application of RAs, is missing.

Transparency on the use of the RAO through a clear description of the objective function, the foreseen operating point and the CNEC-characteristics before and after the RAO implementation must be foreseen. The latter is also needed to ensure that the optimization performed on the CNEC does not structurally increase the RAM on the lines of some TSOs in detriment of the RAM on the line of other TSOs.

The same requirement count for the RAO in ID capacity calculation.

### 13. On the calculation of the final flow-based domain (Article 18 DA CCM and Article 17 ID CCM)

For reasons of clarity Core NRAs prefer that the mathematical description of the capacity calculation contains references to the overall steps mentioned in Article 4(6) of the amended DA CCM proposal, respectively in article 4(7) of the amended ID CCM proposal.

### 14. On the ATCs for fallback process (Article 20 DA CCM)

See remark in §5 of this paper On the methodology for operational security limits.

Article 20(1) of the amended DA CCM proposal should be modified in order to take into account that the methodology in accordance with Article 44 of the CACM Regulation to be developed by Core TSOs is no longer a proposal from Core TSOs as it has been transferred to the Agency for decision. One neutral wording suggestion could be: *"According to Article 21(3) of the CACM Regulation, in the event that the single day-ahead coupling process is unable to produce results, a fallback methodology as developed under Article*

*44 of the CACM Regulation will be applied. This process requires the determination of bilateral Available Transmission Capacities (ATCs) (hereafter referred as "ATCs for fallback process") for each market time unit."*

### 15. On the capacity validation methodology (Article 21 DA CCM and Article 19 ID CCM)

The way Articles 21(1)(c) of the amended DA CCM proposal and 19(1)(c) of the amended ID CCM 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. Core NRAs question this possibility, which may be too permissive. They invite the Agency to adopt a wording that simultaneously enables to address a real problem of corrupt input data if it really happens, and to prevent any abuse by TSOs. Core NRAs are of the opinion that a monitoring of the cases where the use of default parameters is requested due to corrupt input data should be introduced in the DA and ID CCMs if it is not already covered by the Article 24(3)(q) of the amended DA CCM proposal and Article 22(3)(m) of the amended ID CCM proposal.

The proposal states that "(…) *Core TSOs may use, but are not limited to, the tools developed by the CCC for analysis and might also employ verification tools not available to the CCC*." Core NRAs wonder how and when one TSO decides to use other verification tool(s) than CCC and how in that case transparency of the verification process is ensured.

### 16. On the reviews and updates (Article 22 DA CCM and Article 20 ID CCM)

On the basis of Article 22(1) of the amended DA CCM proposal (and Article 27(4) of the CACM Regulation) Core TSOs are obliged to regularly and at least once a year review and update the key input and output parameters listed in Article 27(4)(a) to (d) of the CACM Regulation. Article 22(5) of the amended DA CCM proposal states that any changes of the parameters listed in Article 27(4) of the CACM Regulation have to be communicated to market participants and Core NRAs. Core NRAs are of the opinion that TSOs should also share the results of the review if TSOs do not foresee any changes of parameters listed in Article 27(4) of the CACM Regulation.

### 17. On the publication of data, monitoring and information to regulatory authorities (Article 23, 24 DA CCM and Article 21, 22 ID CCM)

Ideally, the adopted document contains a list, definitions and formats of the data to be provided to Core NRAs and to market participants. Core NRAs would welcome workshops mentioned in Articles 23(3) and 24(4) of the amended DA CCM proposal to be organised in time for the methodology to be decided upon by the Agency. In these workshops, relevant parties could discuss 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), parameters requested by Core NRAs by now (applied RAs on an hourly basis, justifications for reductions made during the validation of cross-zonal capacity in accordance with Article 26(5) of the CACM Regulation, phase shift transformer (hereafter 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 power transfer distribution factor (hereafter PTDF), cross-zonal CNEC with average RAM/Fmax and PTDF, Imax, cos(phi) and Tambient per line and hour, etc…) and any further parameters that may be needed for efficient monitoring.

### 18. On the timescale for implementation of the Core flow-based day-ahead capacity calculation methodology (Article 25 DA CCM)

Article 25(4) of the amended DA CCM proposal states go-live preparations aiming for S1-2020 as the go-live window for the market. This article should contain a specific deadline instead. Further on, the implementation plan provided in this article and the descriptions are too general and not as required by Article 9(9) of the CACM Regulation. Concrete milestones with interdependencies and dates are missing, as well as an estimated go-live date for the advanced hybrid coupling.

### 19. On the number of recalculations for the intraday calculations (Article 5 ID CCM)

Article 5 of the amended ID CCM proposal currently explains that capacity calculations for the ID timeframe are done two times per day. Two years after the implementation of the methodology, Core TSOs will review, as obliged under Article 5(2) of the amended ID CCM proposal, the frequency of the re-calculations. Core NRAs are of the opinion that the current wording provides no framework regarding the obligatory review, i.e. that the review should take place on a continuous basis. Core NRAs are also of the opinion that an obligation for Core TSOs should be incorporated to implement further recalculations as a result of the review.

**Core NRAs do not jointly agree:**

### 1. On avoidance of undue discrimination

Article 21(1)(b)(ii) of the CACM Regulation requires that the CCMs shall include rules to avoid undue discrimination between internal and cross-zonal exchanges. The amended DA CCM proposal states in Article 5(6)(a) that maximum zone-to-zone PTDF in conjunction with the adjustment for minimum RAM are measures to mitigate possible discrimination between the treatment of internal and cross-zonal transactions, in response to Article 21(1)(b)(ii) of the CACM Regulation and Article 1.7 of Annex I of Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 (hereafter Regulation 714/2009). However, the amended DA CCM proposal lacks a motivation why a 20% minimum RAM and a 5% PTDF threshold lead to the avoidance of undue discrimination between internal and cross-zonal exchanges.

On the one hand, several Core NRAs understand the aim of Article 21(1)(b)(ii) of the CACM Regulation as to provide equal treatment between trade within a bidding zone and trade across bidding zone borders. The amended DA and ID CCM proposals include internal flows in the grid before calculating capacity for cross-border trade. This is by definition a prioritisation of internal trade over cross-zonal trade, which according to these Core NRAs is not in line with Article 21(1)(b)(ii) of the CACM Regulation and Article 1.7 of Annex I to Regulation 714/2009. To avoid this, these NRAs demand that the selection of CNECs is adequate, with a stricter selection criterion or even removal of internal lines. Furthermore, the use of cross-zonal lines by domestic trade before capacity calculation – in the called base case (i.e. loop flows) – shall be reduced, according to the defenders of this opinion. To do so, these Core NRAs demand that (i) the individual grid models (hereafter IGM) that will be merged to the common grid model (hereafter CGM) as the basis for the flow-based calculation shall be congestion-free, (ii) the CNEC selection criteria shall be raised to substantially higher PTDF-thresholds and/or limited to cross-zonal lines, (iii) the minimum RAM targets on interconnectors be substantially increased through measures taken in the base case. These Core NRAs underline that the amended DA and ID CCM proposals are not in accordance with the recommendation No. 02/2016 of 11 November 2016 of the Agency. Some Core NRAs consider all input parameters as possible factors for undue discrimination and require a frequent re-assessment of all of them. In the sense of congestion-free IGMs, the RAO should seek to use the coordinated non-costly RAs for maximizing the flow-based domain. This approach would consequently mean, that the RAO in the ID CCM should not be steered towards including the market clearing point, but at enhancing the flow-based domain.

On the other hand, several other NRAs underline that the very target model of the European energy legislation is a zonal market coupling which allows the matching of bids across bidding zone borders only as far as there is sufficient transmission capacity available to fulfil the respective market outcome. These NRAs argue that it is inherent for such a zonal system that internal and cross-border trades are treated differently. While the former benefit from a free use of the grid inside a given zone with a uniform price, the latter are subject to a limitation, which gives rise to a price differential between zones when the cross-border transmission capacity is saturated. The implicit underlying assumption is that there is no capacity limitation inside a zone; however, it must be recognized that, depending on the bidding zone configuration, such limitations may, in reality, exist, either temporarily or structurally, and that cross-border trade may affect these internal congestions. The flow-based approach for capacity calculation is defined as a methodology in which energy exchanges between bidding zones are limited by PTDFs and available margins on CNEs in accordance with Article 2(9) of the CACM Regulation, and these CNEs can be indifferently located between two zones or inside a zone. Although a purely literal reading of the provisions of the CACM Regulation and of the Regulation 714/2009 regarding non-discrimination between internal and cross-border flows would neither be legally sound nor practicable since this discrimination cannot be eliminated, the capacity calculation methodology can, and should, mitigate its effects: by ignoring certain internal limitations, it should allow an increase of cross-border trade possibilities. However, since this comes at a cost due to the potential associated remedial actions needed, the overall goal of the capacity calculation methodology should be to find, through adequate parameters, a trade-off between welfare increase due to cross-border trade and welfare loss due to redispatching which is optimal from a global welfare point of view. In that sense, the request for congestion-free IGM would not be optimal. If RAs are used to reach a congestion-free grid, flows increase on free lines which bears the risk that this capacity is taken away from cross-border trade.

Furthermore, in the light of the above and in the light of Union primary law, at least one NRA emphasizes that the discrimination of internal and cross-zonal exchange is a legally errant concept since only persons, i.e. legal entities and human beings, can be subject to discrimination. In law, only legal subjects (i.e. human beings and legal entities) may be the addressees of rights and obligations. Legal objects (i.e. “things”, e.g. goods such as electricity) do under no legal concept have rights and obligations, such as the right to not be discriminated against or the obligation to equal treatment. The addressees of the non-discrimination obligation under Article 34 of the Treaty on the Functioning of the European Union (hereafter TFEU), i.e. the free trade of goods within the Union (specified by 714/2009 Regulation and CACM Regulation) are the Member States, NRAs and TSOs. The ones that shall benefit from it are the market participants, i.e. producers, traders and consumers; only the latter have the right not to be discriminated against by the former. The electricity exchanges are the object of that equal treatment regime, not its subject – if at all. However, that right to free trade of electricity of producers, traders and consumers is not given without limitations. Union law itself allows *inter alia* for limitations on grounds of grid security and environmental policies, see Article 36 of the TFEU. By providing the CACM CCM approval procedures, the Union law legislator provided for measures for the NRAs and TSOs (and ultimately the Agency) to find an appropriate and proportionate compromise between free cross-border trade in electricity and national grid security concerns and energy transformation policies.

Moreover, Article 24 of Regulation 714/2009 shows that the right of persons to non-discriminatory network access for cross-zonal electricity exchanges is established in order to contribute to consumer choice in the internal electricity market. The consumers choice, however, is surely not hampered by the amended DA and ID CCM proposals, especially not by a selection criterion of 5 % of the PTDF on CNECs and the usage of a minimum RAM on the thermal capacity of 20%, which reduces the prioritisation of internal trade on cross-zonal lines – compared to a case with lower PTDF and minimum RAM values – and ensures that loop flows are only considered until a certain level, thereby contributing to fulfilling the requirements of the recommendation No. 02/2016 of 11 November 2016 of the Agency.

## 2. On the methodology for critical network elements and contingencies selection (Article 5 DA CCM and Article 6 ID CCM)

Core TSOs state in Article 5(8) of the amended DA CCM proposal, that the common threshold to select CNECs shall be studied. Core NRAs agree on the study itself but do not have a common opinion on the definition of the social welfare, or on the parameters besides social welfare that shall be taken into account in the evaluation of the value of the threshold. Some NRAs underline that the analysis must be carried out on the net social welfare, i.e. on the welfare gain brought by the cross-border exchanges minus the welfare loss due the redispatching they require. Furthermore, a threshold or criteria for CNECs being sensitive to RAs could be part of the study.

Other NRAs recall from Regulation 714/2009 (Art. 2.1 of Annex I) that congestions should be managed by a market based congestion mechanism to provide the proper price signals for investments in production, demand side management and network reinforcement. In their view, a structural recourse to redispatching distorts the price signal and is thus market distorting and therefore not an appropriate congestion management methodology. Given that proper bidding zone delineation constitutes an alternative to the use of redispatching to solve congestions – since the congestions would then appear at the bidding zone borders and would thus be managed through the flow based market coupling, those NRAs consider the need for redispatching in large bidding zones to be a deliberate choice of the involved parties. Besides the fact that those NRAs have serious concerns about the market distorting character of redispatching, they therefore do not see any scientifically sound and fair justification for taking those redispatching costs into the equation. On this part of the methodology, some NRAs recommend to take the CREG CBCO (CNEC) – selection study of March 2017 into consideration as a basis for an improved CNEC-selection methodology. Some NRAs consider this to be a pragmatic short-term solution awaiting a proper bidding zone configuration and/or the implementation of the recommendation No. 02/2016 of 11 November 2016 of the Agency.

## 3. On the methodology for allocation constraints (Article 8 DA CCM and Article 9 ID CCM)

The CACM Regulation acknowledges – in its Article 23 – that a CCM based on CNECs cannot in all cases ensure grid security and allows TSOs to use allocation constraints under certain conditions. Core NRAs understand the necessity of this measure but underline that an allocation constraint – if actively limiting the flow-based domain – reduces the trading potentials given to market coupling and consequently should be monitored very critically by NRAs.

In the current proposal, the TSOs of the Netherlands, Belgium and Poland plan to apply allocation constraints. Core NRAs do not agree on whether (i) the justifications given in Appendix I of the amended DA CCM proposal are in line with Article 23(3) of the CACM Regulation and (ii) the description of the way the maximum import and export limits are implemented in Appendix I of the amended DA CCM proposal is sufficient. If the justifications of TSOs are accepted and include frequent studies, Core NRAs expect them to be yearly at least as part of the reassessment mentioned in Article 22(1)(b) of the amended DA CCM proposal and to be shared with all Core NRAs. In addition, Core NRAs disagree on whether allocation constraints shall have a common way of calculation that all respective TSOs shall use or have individual ones to address the TSO's individual grid security situation. No common opinion was found on whether justification and calculation of allocation constraints should be part of the methodology or rather be part of the explanatory note.

According to the amended DA CCM proposal, the allocation constraints shall be calculated based on the global net position of the bidding zone. This approach shall be better explained. To the understanding of Core NRAs that means that a maximum import or export constraint also cover borders outside the Core region. Some Core NRAs prefer more information to be added on (i) the application of a global net position (period of appliance, criteria for exclusion of allocation constraints etc), (ii) the cases when it is applied in market coupling and when – due to technical infeasibility – in flow based capacity calculation as described in

the explanatory note (iii) how it is applied in the respective non-Core region, and (iv) impact to neighbouring CCRs. That information shall be part of the proposal and further explanations part of the explanatory note.

On the other hand the application of capacity allocation constraints to tackle the overall bidding zone system constraints separate from the transfer capacities on individual lines allows for the more effective usage of the capacity of each of these interconnections, depending on the current price differences in individual markets.

### 4. On the reliability margin methodology (Article 9 DA CCM and Article 10 ID CCM)

For the determination of the RAM, the calculation of the FRM is considered crucial by all Core NRAs. Core TSOs did not until now give any explanation or justification for the values (e.g. 90$^{th}$ percentile of probability distribution or alternatives of 5 to 20 % or 10% of the maximum admissible power flow (hereafter $F_{max}$). Generally, Core NRAs prefer every TSO to use a percentile of probability distribution rather than a percentage of $F_{max}$, at least if Core TSOs put the necessary measures and processes in place to keep the load flow forecast errors as small as possible. Nevertheless, Core NRAs understand that it is needed for an interim period until a study in accordance with Article 22 of the amended DA CCM proposal is conducted; they would welcome a justification for the relevance of the default value (10% of $F_{max}$), e.g. based on the return on experience in the CWE region. For transparency reason, Core TSOs shall decide whether they perform the calculation of FRM based on the percentile of probability distribution for each CNE or for each CNEC and not mix both options.

According to the Core TSOs' description, the FRM can be calculated based on N-1 simulations ('CNEC level') or on N simulations ('CNE level'), Core NRAs did not agree so far which way of simulation they prefer. From the analysis of values for network elements already included in a flow-based approach, the respective NRAs learnt that the CNE basis results in smaller FRM values.

According to some Core NRAs, the proposal to calculate the FRM based on N-1 simulations is not in line with Article 22(1) of the CACM Regulation which states that realised power flows should be taken into account and does not mention simulated N-1 flows. Furthermore Article 22(5) of the CACM Regulation states that CNEs should be taken into account and not CNECs. Consequently, Article 9(2)(b)(ii) of the amended DA CCM proposal should be removed. Also from a statistical point of view, those Core NRAs do not understand why some Core TSOs propose to deviate from a FRM which covers a given percentage of the probability density function based on the historically observed deviations.

Other Core NRAs are of the opinion that TSOs operate their grid in N-1 state and therefore need to calculate the FRM accordingly – meaning on CNEC basis. It is also consistent with the following processes of TSOs such as security analysis, which are computed in N-1 state as well. In addition, CNEC-based calculation does not necessarily lead to higher FRM-values than CNE-based calculation.

Furthermore, at least one Core NRA is of the opinion that Core TSOs need to make it explicit that the impact of PSTs or other topological actions is neutralized in the FRM calculation, as is the case at the borders where a flow-based approach is already applied today. Contrary to unplanned outages, control actions taken by TSOs are not considered as uncertainties and should hence not be translated in the FRMs.

At least one Core NRAs notes that the choice of the FRM-calculation methodology is also crucial for the ID timeframe where the decreased uncertainty compared to D-2 forecasts and the market clearing should logically be reflected in lower FRM-values.

### 5. On the long term allocated capacities (LTA) inclusion (Article 14 DA CCM)

Since the LTA inclusion has a direct impact on the DA flow-based domain and may distort it to the detriment of certain market players, one Core NRA suggests that, during the interim phase where the coordinated

long-term capacity calculation pursuant to the FCA Regulation is not yet in force in the Core region, a cap is imposed on the maximum volume of long-term transmission rights (hereafter LTTRs) that is eligible to the LTA inclusion on each Core bidding zone border. The detailed calculation methodology of the caps should be developed by the Agency and included in the DA CCM. This solution would provide an incentive to TSOs not to offer an excessive volume of rights in the long-term timeframe, since the adequacy between the congestion rent they collect in DA and the remuneration of LTTRs they have to pay to LTTR holders would only be guaranteed for the volume of LTTRs that is below the cap, on a given bidding zone border.

### 6. On the capacity validation methodology (Article 21 DA CCM and Article 19 ID CCM)

In Articles 21(1)(b) of the amended DA CCM proposal and 19(1)(b) of the amended ID CCM proposals costly and non-costly RAs are mentioned. While the non-costly RAs are described in Article 11 of the amended DA CCM and Article 12 of the amended ID CCM proposals respectively, no further explanation on costly RAs is given.

Core NRAs who are in favour of including costly RA in the capacity calculation phase, are of the opinion that general information on costly RAs shall be added to the amended CCM, defining whether national or regional costly RAs in accordance with Article 35 of the CACM Regulation are referred to. More detailed information on them can be added to the explanatory note.

Core NRAs who are not in favour of including costly RA in the capacity calculation phase, propose to not provide this option to Core TSOs and hence do not expect general information on costly RA to be included in the methodology proposals.

### 7. On the publication of data (Article 23 DA CCM and Article 21 ID CCM)

Core NRAs disagree on the level of parameters to be provided to market participants. The majority of NRAs expect TSOs to publish for all Core borders all the parameters listed in the proposals and consequently, keep the level of transparency stable for borders where a flow-based approach is already applied. Therefore, those NRAs would like the requirement for national analysis in the Article 25(3) of the amended DA CCM proposal to be deleted.

Some other NRAs think the parameters listed in the proposals are exceeding the level of transparency required by the Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integration and transparency and Directive 2008/114/EC of 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection and consider them not to be in line with their national regulations that have adopted European regulations.

### 8. On the cross-zonal capacities for the intraday market (Article 4 ID CCM)

Article 4(9) of the amended ID CCM proposal indicates that Core TSOs will not be able to calculate and provide capacities to the market at 3:00 pm which is the decided intraday cross-zonal gate opening time. In the understanding of one NRA, Core NRAs cannot approve that Core TSOs do not act in line with Article 58 of the CACM Regulation.

At least one of the Core NRAs finds that the amended ID CCM should state that Core TSOs commit to make a publication to the market about what time above-zero intraday capacities will be released.

### 9. On the timescale for implementation of the Core flow-based intraday capacity calculation methodology (Article 23 ID CCM)

The implementation plan provided in this article and the description are too general and not in line with the requirements of Article 9(9) of the CACM Regulation. Concrete milestones with interdependencies and dates are missing, as well as an estimated go-live date for the advanced hybrid coupling.

Article 23(4) of the amended ID CCM proposal indicates that the go-live of the ID CCM is in S1 2021 which exceeds the deadline set at 31 December 2020 for harmonised CCMs in all CCRs. In the understanding of one NRA, Core NRAs cannot approve that Core TSOs do not act in line with Article 21(4) of the CACM Regulation. Furthermore, a specific date for go-live needs to be mentioned instead of a reference to a period spanning half a year.

### 10. No Adjustment for minimum RAM in ID CCM proposal

Some Core NRAs question the non-application of an adjustment for minimum RAM in the ID CCM proposal. In particular, they underline that, in case the remedial actions used to guarantee the minimum RAM in the DA timeframe would not be reflected in the intraday common grid model, an additional adjustment would be compulsory in the ID CCM so that this minimum RAM is also available in intraday (notably, the initial market clearing point in intraday cannot be outside the ID flow-based domain). On the contrary, others consider the application in the ID timeframe to jeopardize system security.

## IV. Conclusions and actions

On 16 August 2018, the members of CERRF did not reach a unanimous agreement to either approve the proposals, to request the Agency to extend the deadline for decision or to request the Agency to adopt a decision on the amended Core DA and ID CCM proposals pursuant to Article 21 et seqq. of the CACM Regulation. In that case, the Rules of Procedure of CERRF require the CERRF Chair to refer the decision to the Agency – in accordance with Article 9(12) of the CACM Regulation – on behalf of the Core NRAs. Nevertheless, Core NRAs agree to provide this non-paper to the Agency to give an indepth view on common and on dissenting opinions of Core NRAs to contribute to the letter by the CERRF Chair. Core NRAs anticipate that the Agency will, when adopting its decision, give utmost consideration on Core NRAs' and Core TSOs assessment of all elements of the amended proposals for DA and ID CCM, especially those that were identified and presented in this paper.

Core NRAs are ready to assist the Agency to develop and adopt its decision and would highly welcome the set-up of a dedicated taskforce to facilitate a continuous exchange between NRAs and the Agency throughout the decision process.

Based on the above rationale, NRAs agree that the amended proposals for the DA and ID CCM do not meet all requirements of the CACM Regulation, are far from being enforceable and as such cannot be approved by all Core NRAs.

Summarizing the above, the proposals still do not contain:

- detailed, consistent and fully CACM-compliant descriptions (see points raised in this document)
- conclusive, unambiguous and enforceable methodology (clear, transparent and harmonized definitions, defined and justified thresholds or values avoiding discretionary powers for individual TSO to use or modify several inputs, clear, transparent and harmonized (ideally automated) criteria for processing)