

Consultation feedback for SWE CCR

Submission document

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1. Introduction

This document answers the questions raised by stakeholders interested into the coordinated capacity calculation methodology for the day-ahead and intra-day market timeframes to be applied in the South-Western Europe Area (SWE). It contains feedbacks both from the consultation workshop held in Madrid and from the formal consultation held via ENTSO-E website.

The participating TSOs for this calculation are REE (ES), REN (PT) and RTE (FR), following borders are considered: France – Spain and Spain – Portugal.

2. Questions and answers during the consultation workshop in Madrid

On July the 5th 2017, SWE TSOs invited stakeholders to participate into a workshop where SWE TSOs presented their implementation plan and answered the questions that stakeholders could have.

Please find bellow the questions and answers that were given during the workshop.

Q1. What does "the first unsecure situation" mean?

The capacity calculation process can be described as a calculation by dichotomy. This means that a starting exchange level is defined and it is checked if this level allows the transmission system to be operated within its operational security limits. If the level is secure, a higher exchange level is tested. Otherwise, a lower exchange level is tested. This process is repeated until the scenario with the maximum level of exchange compatible with the security criteria (i.e. TTC) is found. This is called the "last secure scenario". As the dichotomy is set with a 50 MW step, the scenario with a level of exchange equal to TTC plus 50 MW, is called "the first unsecure scenario".

Q2. Who is the responsible to perform the dichotomy process?

SWE TSOs are working with CORESO to be the coordinated capacity calculator for this region.

Q3. Could you explain why you are going to perform only one recalculation in intraday?

A good capacity calculation process needs time and good inputs, which is not compatible with too many recalculations.

Remark post workshop: Following NRAs feedback two recalculations for the intra-day market are planned. The second recalculation will be implemented once the first is working properly and TSOs are confident with the process.

Q4. Why are you going to wait two years to perform the CBA about applying more recalculations for intraday market?

Two years is the deadline established in CACM GL. The CBA could be done before this deadline depending on the complexity of the implementation of such a calculation.

Q5. How often is the capacity currently calculated?

Currently, the capacity is calculated in several timeframes: yearly, monthly and weekly timeframes. After the weekly calculation, the capacity is reevaluated only if there is an important change in the forecast compared to weekly calculation or if there is unplanned grid situation.

Q6. How often will the capacity be calculated in this new coordinated capacity calculation process?

The initial proposal establishes one calculation for day-ahead market and one recalculation for intraday market, besides the calculations that are already done (Q5).

Remark post workshop: *Following NRAs feedback two recalculations for the intra-day market are planned. The second recalculation will be implemented once the first is working properly and TSOs are confident with the process.*

Q7. Have you performed a task to harmonize the CNTC approach used in the different regions or it is a task to be performed in the future? According to the objective of 2020 established in CACM GL.

TSOs are in the move to align all the methodologies of capacity calculation, even where CNTC is applicable. The same principles are being used to perform all the calculations.

Q8. Taking into account the objective of 2020, do you expect to propose a new methodology for this date?

In the Capacity Calculation Biennial Report, TSOs will justify if the conditions to use the applied methodology and approach are still fulfilled and, if appropriate, propose measures to improve the methodology.

Q9. When you detect that a remedial action can relieve a constraint, what rule do you use to decide applying the remedial action as a preventive action or as curative action?

TSOs have to define the rules depending on how TSOs operate their network. These rules have to be included in the inputs sent by TSOs to the coordinated capacity calculator.

Q10. Can you show data or evidences that proves that CNTC approach is better than flowbased approach for SWE region?

A study with the comparison between CNTC and flow-based approaches will be part of the approval package to be submitted to NRAs in September, as required. This study will include figures and the sensitivity study performed to justify that CNTC approach is as good or even better than flow-based approach, for SWE region.

Q11. Related to the reductions performed by TSOs in the validation phase, how are these reductions going to be monitored? Who is going to receive the information about these reductions?

Firstly, TSOs have to inform coordinated capacity calculator about the reason of the reductions. Secondly, according to CACM GL (article 26 (5)), the coordinated capacity calculator shall, every three months, report all reductions made during the validation of cross-zonal capacity 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.

Q12. Could you explain more about the cases where you could apply reductions in the values calculated by coordinated capacity calculator?

1. In the case of big differences with the forecast. For covering all the possible forecast errors TSOs would have to take into account a reliability margin (hereafter RM) too big, which would lead to smaller NTC values for every hour. It is more economically efficient to leave RM low and open the possibility to reduce in case of big difference with the forecast.
2. If there is an unplanned topology, e.g. one TSO is informed of an unplanned outage at 04:00 am. Coordinated capacity calculator does not have enough time to perform a recalculation but TSOs have time to take it into account in the validation phase and to analyze if a reduction in the capacity is needed.
3. For particular grid situations that occur not very often, some contingencies or critical network elements could be missing in the lists provided to the capacity calculator if these particular outages were not taking into account in the sensitivity studies to create those lists. In these cases, TSO could take into account those elements during the validation until the lists for the capacity calculator are updated.

Q13. Don't forget the recommendation number 3 from ACER: The capacity to be offered to the market should be maximized applying counter-trading and redispatching.

SWE TSOs are using the Remedial Action Optimization in order to obtain the highest capacity values maintaining the security of the grid. SWE TSOs take into account not only the third but the three ACER recommendations:

1. Avoid internal trades privilege in front of cross-border trades → a sensitivity study to identify the elements significantly impacted by cross-border power exchanges will be performed.
2. No capacity reductions to accommodate loopflows → the definition of loopflows is not applicable in SWE region as Portuguese and French borders do not touch.
3. Sharing costs related to counter-trading and redispatching → it is not a part of this common capacity calculation methodology, but there is a dedicated SWE Countertrading and Redispatching project team in charge of it.

Q14. If it is detected that a costly remedial action could relieve a constraint, what type of analysis is performed to evaluate if the remedial action is economically efficient?

An analysis that could be performed is to compare the benefit (associated to an increase of capacity) with the cost (redispatching).

Q15. Will this comparison between benefit and cost be included in this common capacity calculation methodology?

No, it will be developed in another methodology. In this common capacity calculation methodology the possibility to apply remedial actions (hereafter RAs) with cost in specific situations is given, but an economic optimization of these RAs will not be done. These RAs will be applied in accordance with national legislation of each country.

Q16. How long will it take the transitory period of the RM methodology? When will the target model be implemented?

For day ahead market: second semester of 2019, after collecting 1 year of data and with a period of three months to compute the data. For intraday market: first semester of 2021.

Q17. What RM values are you going to consider during the transitory period of the intraday market?

As a starting point for intraday, the same RM values utilized for D-2 calculation will be used. Once enough data has been collected, TSOs will be ready to implement the target methodology based on probabilistic distribution functions applied to the corresponding inputs.

Q18. Can you precise how you are going to perform the merit order in GSKs?

The merit order will be based on statistical/historical data, taking into account the number of hours that power plants have been connected in the network, their real productions and the offers made in the wholesale market.

Q19. Prices in the market should be taking into account to create the merit order.

SWE TSOs will take this recommendation into consideration.

Q20. All the available remedial actions should be included in the tool in order to obtain maximum values of capacity.

SWE TSOs plan to include for the calculation all the RAs which are available on TSOs side. The capacity calculation tool optimizes the use of all preventive and curative RAs in order to obtain maximum values of capacity ensuring the security of supply.

Q21. The final value of capacity that you are going to publish, will it include the optimal coordination of the remedial actions?

All the non-costly RAs are going to be included, preventive and curative. Some costly curative RAs are going to be implemented where allowed by the regulation.

Q22. Would it be possible during the transient period before performing intraday-calculations to release the values of capacity at real time basis?

Today, TSOs do not calculate capacity in real time, they just validate that the capacity values provided to the market are safe by performing a security analysis in real time. If the values are not safe and there are not available effective RAs, they are reduced. The process of capacity calculation takes time because it is a complex process, so enough time and good inputs are essential for this process.

Q23. Can you explain how you define the values for RM for the transitory phase? Can you explain why you use different values for unintended deviations in both borders (100 MW S-P and 200 MW F-S)?

The probability density function of the unintended deviations shows that a value of 200 MW for France-Spain border and a value of 100 MW for Portugal-Spain border cover unintended deviations in 95% of the cases. In the Iberian Peninsula, 80% of the frequency adjustment comes from the rest of Europe, so the 80% of any variation of the production comes through the France-Spain border, leading to significant unscheduled exchanges in real time.

The different values for the uncertainties (7.5% for France-Spain border and 10% for Portugal-Spain border) are explained because Portugal-Spain border is more sensible to forecast errors, e.g. RES amount and location.

Q24. Are you going to provide the slides shown during the presentation?

Yes, we will provide them to you.

Remark post workshop: *The slides were sent to the attendees by email on July 7th.*

3. Questions and answers from the consultation via ENTSO-E website

From June 14th till July 20th 2017, SWE TSOs held a consultation on their capacity calculation methodology. During this consultation period, the opportunity was given to stakeholders to give their opinion on the methodology and to ask for details or improvements.

Please find below the questions anonymized and organized by topics, followed by the answers from SWE TSOs.

3.1. Transparency

The following should be published in day-ahead (for Flow-Based a small subset is still published in D+2, and generation is not broken down):

- List of CNEC with their explicit names
- Fmax, Fref and RM (once that is not a standard value any longer) of each CNEC.
- A PTDF-like indicator (this is not mentioned in the document because it is likely not used as such in the capacity calculation, but could be a simple by-product of the dichotomy).
- Aggregate inputs of the CGM, by bidding zone:
 - o Load.
 - o Generation, broken down at least by RES/conventional.
 - o Net position, broken down by border, and including the non-SWE borders.

SWE TSOs can publish this information toward NRAs, with the following precisions:

1. Only information about the limiting CNEC(s) will be published.
2. The PTDF-like indicator is not relevant with this capacity calculation methodology since preventive RAs can be different between the last secure and the first unsecure level of exchange.
3. CGM indicators are ENTSO-E CGM Project responsibility. SWE TSOs do not plan to publish any additional data.

The following should be published as needed, but with a reasonable notice period (unless of course in case of incidents):

- Notification when new CNEC are introduced/withdrawn

- Impact assessment in case of new grid elements or major changes in generation.

NRAs will receive limiting CNECs with all relevant information. New grid elements or major change in the generation will be published through relevant channels, it is not under SWE Capacity Calculation Project responsibility.

The following should be published before go-live:

- The same data as above, during the parallel-run.
- Operational procedure to explain how Phase-Shifter Transformers are used.
- Operational procedure to explain how Remedial Actions are used.
- Operational procedure and parameters (updated when needed) used to compute the forecast Net Positions (NP) in the individual and Common Grid Model.
- Set up a (working) Q&A during the parallel-run.

1. The same data published after Go-Live will be publish for the external parallel run.
2. If applicable, Phase shifter transformers and RAs operational procedures would be published through relevant channels, not though the capacity calculation process.
3. CGM indicators are ENTSO-E CGM Project responsibility. SWE TSOs do not plan to publish any additional data.
4. We agree on setting up a Q&A during the external parallel run.

The critical parameters determining the cross-zonal exchange capacity in practice

This includes providing information on:

1. The Common Grid Model used for capacity calculation (including expected flows on all CNEs),
2. The full list of non-anonymous Critical Network Elements (or elements likely to limit cross-zonal capacities in case of CNTC) to be considered in capacity calculation.
3. Operational Security Limits and Reliability Margins on all CNEs
4. PTDF or extent to which cross-zonal flows affect the CNE for CNTC.
5. The methodologies and the results of the “likely market directions” that are used in the capacity calculation. Transparency on the methodology should be included in the CCM. The daily information of these likely directions should be published as soon as available.
6. Full transparency on the GSK methodologies. We are opposed to vague elements such as “custom” GSK. A fully transparent and prescriptive methodology should be adopted. In addition, operational transparency on GSKs, i.e. the value per node and per hour.
7. “Basic” elements such as the definition of “peak” and “off-peak”. By observing GSK patterns (where already in place), we have the impression that the definition of “peak” does not correspond to the market definition (i.e. H9-H20 weekdays).
8. Vertical Load should be broken down into final load and RES/distributed generation (similar breakdown as foreseen in the ENTSO-E Transparency Platform)
9. The binding documents shall also mention that outages of all significant CNE should be published in a timely and usable manner on ENTSO-E Transparency platform, and that failure to do so shall be considered as a breach to transparency obligations.
10. As soon as the capacity is validated for a bidding zone border, the total CNTC/Flow-Based domain should be disclosed so that market participants can take updated values into account. The CACM Regulation indeed foresees that “information on available capacity should be updated in a timely manner based on latest information”.

11. Last but not least, the level of commitment towards “qualitative” transparency (e.g. alerting the market of seasonal FMAX changes, the Standardized Procedure for Assessing the Impact of Changes – SPAIC) should be formalized in the binding documents.
12. Should there be any national legal barriers to the disclosure of these elements, we urge NRAs to assess and report on them and to identify possible ways to overcome them.

1. According to CGM methodology, CGMs will not be published.
2. NRAs will receive limiting CNECs with all relevant information.
3. Operational security limits are already published when required by national regulation, no extra publication from SWE Capacity Calculation Project is planned. For the RM, the formula is available in the methodology, please refer to it. In CNTC Transmission RM is applied, not RM per grid element.
4. The PTDF-like indicator is not relevant for this capacity calculation methodology since preventive RAs can be different between the last secure and the first unsecure level of exchange.
5. See ENTSO-E CGMA methodology. As starting point SWE TSOs will use 0 MW exchange.
6. SWE TSOs consider that the proposed methodology is clear enough. GSLKs will not be published.
7. Peak/off-peak scenarios are not considered as one calculation by hour will be performed.
8. It is not the responsibility of the SWE Capacity Calculation Project.
9. SWE TSOs respect REMIT transparency regulation and do not plan to go further in the SWE Capacity Calculation Project.
10. SWE TSOs agree to publish the values as soon as they are validated. Besides, they will still be able to update these values until Market coupling firmness deadline for D-1 (or equivalent for other timeframes).
11. Not the responsibility of SWE Capacity Calculation Project.
12. NRAs responsibility.

Items we not achieved for Flow-Based

The following should be published in day-ahead (for Flow-Based GSLK could probably be calculated by painstakingly processing the rest of the data):

- GSLK per node
- List of Remedial Actions and their impact of each on the capacity of each CNEC.
- An indicator relating to voltage and phase angle problems.

1. GSLKs and RAs will not be published.
2. The Explanatory Note includes an explanation about the consideration of voltage and phase angle in the capacity calculation.

This means TSOs should maintain online a documentation describing the applied capacity calculation methodology, including full details on how all parameters of the capacity calculation methodology are set. Documents subject to consultation for most of the regions (e.g. SWE, Hansa, CORE, Channel...) are incomplete in this regard.

And

The capacity calculation methodology

This means that TSOs should make available online a documentation describing the applied capacity calculation methodology in full details, including full details on how all parameters (e.g. reliability margins,...) used in the capacity calculation methodology are set. [ACTOR] expected this documentation to be subject to consultation this summer as part the “capacity calculation methodology” as foreseen by the CACM Regulation. However, the description of each step of the capacity calculation process provided in the explanatory document is short and general, contrary to the level of detail required by Article 21 of the CACM Regulation, and we believe that the parameters used in capacity calculation need to be further justified. As mentioned above, [ACTOR] believes that an adequate level of detail should be already ensured at the public consultation stage and wishes that the development of the detailed methodology could be subject to the same governance process.

SWE TSOs consider the Explanatory Note as the document answering this need of transparency. It will remain public and will be updated if significant changes are implemented.

The critical parameters determining the cross-border exchange capacity. This includes providing full information on:

1. The Common Grid Model used for capacity calculation (including expected flows on all CNEs).
2. The elements likely to limit cross-border capacities and considered in capacity calculation.
3. Operational Security Limits, Reliability Margins; and realized physical flows on all of those elements.
4. The extent to which cross-border flows affect the CNE for the calculation of the CNTC.
5. Furthermore, as soon as the capacity is validated for a border, the total CNTC should be disclosed so that market participants can take updated values into account.

1. CGMs will not be published, according ENTSO-E CGM methodology.
2. The CNE list will be determined and keep updated by a transparent methodology, the list will not be published.
3. Operational security limits are already published when required by national regulation, no extra publication from SWE Capacity Calculation Project will be done; the methodology of the RM is available in the document, please refer to it (in CNTC Transmission RM is applied, no RM per grid element); Realized physical flows on those elements: Not the responsibility of the SWE Capacity Calculation Project.
4. The PTDF-like indicator is not relevant with this capacity calculation methodology since preventive RAs can be different between the last secure and the first unsecure level of exchange.
5. SWE TSOs agree to publish the values as soon as they are validated. Besides, they will still be able to update these values until Market coupling firmness deadline for D-1 (or equivalent for other timeframes).

3.2. Granularity

CACM GL Art 14.2 mandates that individual values should be calculated for each day-ahead market time unit (i.e. at least hourly values as of today) and for each remaining intraday market time units.

And

Article 14.2 of the CACM Regulation mandates that individual values of cross-border exchange capacities should be calculated for each market time unit. We understand that for the SWE CCR, the market time unit corresponds to one hour, as of today. It might be necessary, however, to clarify this explicitly within the methodology description.

It has been updated specifying that market time unit means hourly resolution.

3.3. Coordination of capacity calculation process on the different SWE borders

CACM GL Art 21.1.b.vi foresees that TSOs should detail how power flow capabilities of critical network elements are shared among different borders.

The study performed by SWE TSOs and submitted to the NRAs shows that there is no impact of one border on the other, therefore no rules are needed for this purpose.

[ACTOR] understands that the capacity calculation process will be performed separately for each border in the SWE CCRs. Nevertheless, [ACTOR] wishes to underline that Article 21.1.b.vi of the regulation foresees that TSOs adopting the coordinated NTC approach should specify the rules for sharing the power flow capabilities of critical network elements among different bidding zone borders.

Therefore, we believe that the proposed capacity calculation methodology for the SWE region should envisage, at least in the medium term, specific solutions to take into account the interdependences between the different borders of the regions having an impact on the availability of cross-zonal capacity. In particular, we believe that the development of new interconnections in the region, such as the Gulf of Biscay project between France and Spain, will increase the need to take into account these interdependences for cross-zonal capacity calculation.

Thus, TSOs should present in their current proposal their target solution to take into account interdependencies between different borders and they should provide stakeholders with a clear roadmap for the implementation of this solution.

The study performed by SWE TSOs and submitted to the NRAs shows that there is no impact of one border on the other, therefore no rules are needed for this purpose.

CACM requirements will be followed by doing a similar study for the biennial report or more often if there is a significant change (e.g. commissioning of Gulf of Biscay project between France and Spain).

3.4. Reliability Margin (RM)

As mentioned in CACM Art.22.1, the reliability margin shall be calculated on the basis of the probability distribution of deviations between the expected power flows at the time of the capacity calculation and the realized power flows. In addition, Art. 21.4 requests that the reliability margin computation should take due consideration of the share of the deviation that results from remedial actions taken by the TSOs, such as for example topological changes, HVDC or PST settings, countertrading or redispatching actions.

We call for clarity in all capacity calculation methodologies on whether “controlled” deviations are considered or not in the setting of transmission reliability margins.

Also, deviations related to a change in net positions of the bidding zones with respect to the forecasted CGM should be neutralized.

When outage rates are considered for the unavailability of some transmission assets, we recommend that it should include only outages that occur after the Long Term Firmness Deadline (i.e. 11h DA). Furthermore, to reinforce stakeholder confidence and help market participants better anticipate the Flow-Based domains/CNTC settings, TSOs shall report systematically on the historical record of deviations for any network element likely to limit cross zonal trades. We believe that historically realized and forecasted flows on CNE should be part of the list of indicators followed by NRAs. This would allow a proper “feedback loop” in the process.

The "controlled" deviations (change in topology, PST taps, ...) will not be taken into account in the SWE RM methodology since TSOs will always compare real time flows with capacity calculation inputs with the same topology applied. It is the same for Net positions, only situations with the same level of exchange will be compared.

Regarding outage rates and deviations on network elements, it is not planned to be taken into account. SWE will report to NRAs all the information required by CACM guideline.

Article 6.3 foresees that the RM will not be defined according to article 22 CACM for a transitory period and presents the alternative method. However, article 22 CACM does not foresee such deviation. Should this deviation be nonetheless compliant with the CACM Regulation, we request a justification in the binding document for deviating from article 22 CACM.

SWE TSOs intend not to delay the project implementation because of the lack of data to calculate the RM with the definitive methodology which requires inputs that do not exist for the past. The justification will be available in the submitted Explanatory Note.

As mentioned in Art.22.1 of the CACM Regulation, the reliability margin shall be calculated based on the probability distribution of deviations between the expected power flows at the time of the capacity calculation and the realized power flows. In addition, Article 21.4 requests that the reliability margin computation should take in due consideration the share of the deviation that results from remedial actions taken by the TSOs, such as for example topological changes, HVDC or PST settings, countertrading or redispatching actions. [ACTOR] calls for clarity on whether “controlled” deviations (including also deviations of physical flows related to an evolution of net positions of all bidding zones) are considered or not in the setting of transmission reliability margins.

Also, when outage rates are considered for the unavailability of some transmission assets, we consider that they should include only outages that occur after the Long Term Firmness Deadline (i.e. 11h DA), as those that occur before can be properly addressed by TSOs before the DA capacity allocation.

Furthermore, to enforce stakeholders’ confidence and help market participants to better anticipate the CNTC settings, TSOs shall report systematically on the historical record of deviations for any network element likely to limit cross-border trades.

[ACTOR] also wishes to highlight the following additional points:

- The calculation of reliability margin described in the consultation seems to apply to single CNEs rather than to the whole border. In particular, the uncertainties due to forecast errors have a direct impact on power flows on specific network elements and only an indirect impact on the available cross-zonal capacity.
- Since we can imagine that the greatest share of the identified uncertainties is related to RES production forecasts, we suggest that the values to be used be differentiated at least according to the season. This solution would be justified since the same forecast error can have different impacts on power flows on grid elements according to the amount of available RES production.

- The proposed temporary values to be used for the calculation of reliability margins until statistical data are available are not adequately justified.

The "controlled" deviations (change in topology, PST taps, ...) will not be taken into account in the SWE RM methodology since we will always compare real time flows with capacity calculation inputs with the same topology applied. It is the same for Net positions, only situations with the same level of exchange will be compared.

Regarding outage rates and deviations on network elements, they are not planned to be taken into account. SWE will report to NRAs all the information required by CACM guideline.

The proposed RM methodology applies to the whole border: unintended deviations plus uncertainties measure with global variables.

Regarding the RES impact in RM, SWE TSOs will look into it once relevant/enough data is available.

Regarding the temporary RM parameters, they will be justified in the final Explanatory Note submitted to NRAs.

3.5. Cross-border relevant constraints

Inclusion of remedial actions

We believe that costly remedial actions should be systematically considered in the capacity calculation, to the same extent that they are considered in coordinated security assessment. Where economically efficient, costly remedial actions should be taken in order to allocate the maximum of cross-zonal capacity to the market. The use of HVDC setting should also be included in the list of remedial actions.

Congestion "rents" and redispatching "costs" are both financial redistributions elements that should be considered on an equal footing in order to optimize regional welfare.

SWE TSOs will use costly RAs in curative mode only for particular contingencies where allowed by the regulation. HVDC modulation is a curative RA already made available to the Remedial Actions Optimization. Congestion "rents" and redispatching "costs" are not considered in SWE Capacity Calculation Project, they will be handled in the specific Counter-trading and redispatching methodology.

- The way cross-zonal relevant constraints are foreseen in the CCM proposals is very problematic. We believe that a global paradigm shift is necessary, in order to comply with Article 16(3) of Regulation No 714/2009 ("TSOs shall not limit interconnection capacity in order to solve congestion inside their own control area") and with the ACER Recommendation 02/2016 of 11th November 2016.

The starting point of CCMs should be that no internal constraint is considered. The regulatory framework (as well as the ACER Recommendation) however foresees that derogation to this principle is possible where economically justified, as explained in article 1.7 of Regulation No 714/2009:

When defining appropriate network areas in and between which congestion management is to apply, TSOs shall be guided by the principles of cost effectiveness and minimization of negative impacts on the internal market in electricity. Specifically, TSOs shall not limit interconnection capacity in order to solve congestion inside their own control area, save for the abovementioned reasons and reasons of operational security. If such a situation occurs, this shall be described and transparently presented by the TSOs to all the system users. Such a situation shall be tolerated only until a long-term solution is found. The methodology and projects for achieving the long-term solution shall be described and transparently presented by the TSOs to all the system users.

In the proposed CCM, this approach is not respected:

The proposed approach to define a fixed PTDF threshold under which CNEs should be disregarded from the FB domain computation does not provide any consideration for the economic efficiency of the restrictions. No justification is provided.

- Moreover, this approach would probably lead to significant propagation of constraints. Once an element is "labelled" as influent, it will remain there, limiting any exchanges in the CCR. We believe that a more dynamic approach should be put in place, where CNE are only limiting relevant flows and only where economically efficient.

- Also, where TSOs intend to consider voltage or network stability issues in capacity calculation, the involved TSOs should make the demonstration that these phenomena are significantly influenced by cross-zonal exchanges and that the proposed restriction is economically efficient. Indeed, most frequently, costly remedial actions can address the issue in a much more efficient way than restricting cross zonal exchanges.

Regarding "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", this means that we should not neither prefer cross zonal exchanges before internal exchanges. The proposed selection criteria fulfill this requirement.

Regarding the list of CNEs, SWE TSOs will indeed dynamically adapt the list of monitored elements in order to keep calculation time feasible and respect the sensitivity methodology. The same selection criteria will be applied for voltage constraint as explained in the Explanatory Note. In addition, please note that costly curative RAs will be used to handle voltage phase angle constraint where allowed by the regulation.

The CACM Regulation (Article 21.1.i.b) requires that that the description of the capacity calculation approach shall include rules to avoid undue discrimination between internal and cross-zonal exchanges to ensure compliance with point 1.7 of Annex I to Regulation (EC) No 714/2009.

Such rules are missing, or at least there is no explanation how the proposed methodologies would avoid such undue discrimination. TSOs seem to argue that by selecting both interconnectors as well as internal network elements as critical network elements and by applying "Advanced Hybrid Coupling", undue discrimination would be avoided. However, there is no proof that this avoids undue discrimination.

On the contrary, internal trade within a bidding zone remains possible without limitations, whereas trade is not only restricted because of congestions at the interconnector but also for the purpose of managing internal congestions. Moreover, the concept of "advanced hybrid coupling" is not clearly described.

We consider that undue discrimination may only be avoided if there is a clear justification - based on an economic efficiency assessment - for the selection of internal network elements as critical network element.

Regarding "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", this means that we should not neither prefer cross zonal exchanges before internal exchanges. The proposed selection criteria fulfill this requirement.

[ACTOR] notices that TSOs of the SWE region intend to consider voltage or network stability issues in capacity calculation. In this case we believe that the involved TSOs should make the demonstration that those phenomena are significantly influenced by cross-border exchanges. Indeed, most frequently, costly remedial actions at local level can address the issue in a much more efficient way than restricting cross-border exchanges.

More generally, for all internal constraints, TSOs should demonstrate that including the associated critical network elements in the capacity calculation is more efficient than remedial actions in order to justify their effective and temporary inclusion.

The same selection criteria will be applied for voltage constraint as explained in the Explanatory Note. In addition, please note that costly curative RAs will be used to handle voltage phase angle constraint where allowed by the regulation.

The process for the periodical update of the list of CNEs and contingencies should be clarified. In particular we wish to understand if TSOs envisage a seasonal update of these parameters. Furthermore, apart from cross-border transmission assets, CNEs should be selected with respect to efficiency, i.e. only when it is more efficient to limit cross-border trade instead of using (costly) remedial actions. If TSOs intend to use a sensitivity criteria for the selection of CNEs (sensitivity to an increase of cross-border exchanges in terms of additional transit), they should demonstrate that the selected threshold discriminates efficiently cross-border-relevant constraints.

The update of the lists of CNEs and contingencies will depend on the situation assessed by SWE TSOs, not only on the season. In any case elements limits will be updated when real time limits change (typically seasonally).

3.6. Remedial Actions (RAs)

[ACTOR] believes that costly remedial actions should be systematically considered in the capacity calculation, to the same extent that they are considered in coordinated security assessment, in order to maximize the cross-zonal capacity made available to the market. Moreover, [ACTOR] suggests considering the opportunity to optimize the use of the DC interconnection Baixas-Santa Llogaia between France and Spain as one of the remedial actions available to optimize capacity calculation.

The systematic use of costly RAs is not required by CACM (Article 25: "Each TSO shall take into account RAs without costs in capacity calculation."). Nevertheless, some costly RAs will be used for specific circumstances in curative mode where allowed by the regulation. Regarding the HVDC, it will be used as curative RA.

3.7. Generation and Load Shift Keys (GLSKs)

[ACTOR] asks for more detailed description of the shift methodologies used by TSOs, in particular on the following topics:

- According to Article 8 of the methodology proposal, it seems that load variations are only taken into consideration by REN while RTE and REE would use only generation shift keys. [ACTOR] wonders how GLSKs are then defined.
- Information on how the merit order is built, e.g. the costs assumptions for the different generation units, etc.

Portuguese regulation allows load to participate in the system service market. It will then be taken into account in the merit order.

GSKs for Spanish system will be based on statistical/historical data, taking into account the number of hours that power plants have been connected in the network and real productions. GSKs for Portuguese system will be based on recent historical prices.

3.8. LTA firmness

The firmness of Long-Term Allocated capacities should be guaranteed by the application of an “LTA patch”.

This is not required and therefore not foreseen in SWE Capacity Calculation Methodology.

3.9. Intra-Day

The CACM EU regulation established that the so-called Single Intraday Coupling should define a continuous implicit allocation of cross-zonal capacity. However, given the fact that:

- All TSOs’ proposal for the single methodology for pricing cross-zonal intraday capacity pledges for an auction-based mechanism which will handle all existing cross zonal capacity.
- This now consulted Capacity Calculation Methodology Proposal for SWE CCR does not establish but one only intraday capacity calculation per day (ahead it), presumably to be fully allocated just in the first of the above mentioned auctions.

In [Actor], we are concerned about the fact that in all day ahead congested hours there will not be but isolated regional continuous intraday trading since there will not be any spare capacity at all. We do think that this goes clearly against the aim of the EU Regulation.

The only way to at least partially overcome this problem is to calculate the cross zonal capacity several times, not only ahead but also within the day itself, as much as possible.

We do believe that TSOs at both sides of a given border are supposed to assess and monitor the cross-zonal capacity in real time basis in order to guarantee the system reliability.

Our proposal is then to redefine the methodology aiming at the maximum number of feasible cross border capacity calculations. Furthermore, in our opinion, during the interim period until this methodology entries into force by S2 2019, capacity calculation should be carried out not least than once per hour for the whole scope of the day, and released to the market accordingly. It would then provide a good chance to test just a continuous implicit allocation of cross zonal intraday capacity, as defined in the CACM EU Regulation, before the auction based mechanism entries into force. Should the capacity calculation rest calculated once per day as by this consulted proposal there would not ever be such a continuous cross border intraday trading but in price coupled hours.

And

Article 12 is supposed to detail the capacity calculation methodology for the intraday timeframe, but fails to do so. The article is rather a description of the process that follows the capacity calculation. This is a major flaw of this methodology whose purpose is to describe the capacity calculation methodology in detail. Article 12 states the frequency at which intraday capacity will be calculated once at D-1. Section 5 of the explanatory note gives more detail, but disclaiming that the intraday capacity calculation project is not yet defined. Article 12.8 foresees that the TSOs shall review the recalculation frequency two years after the implementation. We think that it is important to foster the intraday recalculation project and to analyze higher frequencies as soon as possible and in a coordinated manner with the rest of the CCR.

And

The intraday methodology is still to be defined, according to section 5 of the explanatory note and the frequency of calculation is set initially at once in the end of D-1 in art. 12 of the proposal. We suggest a rewording of the main part of this article stating that the same process and methodology established for the day-ahead timeframe (art. 11) will be followed for the intraday timeframe and that relevant amendments will be provided in a precise deadline before the date of implementation foreseen in art. 14, jointly with a reassessment of the frequency. We consider that the review of the frequency established in art. 12.8 is not sufficiently ambitious. All these matters will be subject to consultation.

Based on regulators and stakeholder feedback, SWE TSOs have decided to implement initially two recalculations for intraday market. According to the requirements of CACM GL for the intraday methodology, a Cost-Benefit Analysis shall be carried out to see whether more (or less) calculations are relevant. Please keep in mind that a good capacity calculation process needs time and good inputs, which is not compatible with too many recalculations. Further details will be given when TSOs re-consult on the intraday capacity calculation.

3.10. Proposal vs Explanatory note

Article 11 and 12 are supposed to detail the capacity calculation methodology for respectively the day-ahead and intraday timeframes but the articles are rather a description of the process that follows the capacity calculation. The binding proposal should describe the capacity calculation methodology in detail. The articles notably fail to provide any of the details requested by article 21.1.b of the CACM Regulation, including:

- (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 22 network elements among different capacity calculation regions in order to accommodate these flows.

And

Overall, we see that the proposal does not provide enough detail in contrast with the explanatory note. We consider that the fulfilment of art. 21 of CACM requires a self-contained proposal. Therefore we suggest a rewording of the articles to include the relevant content of the explanatory note, even those aspects still to be fully defined.

Following NRAs and stakeholders comments, SWE TSOs are going to update these points in the proposal according to what is present in the Explanatory Note.

3.11. FB vs CNTC justification

CACM GL Art 20.7 specifies that this computation should be flow-based, unless TSOs demonstrate that a flow-based capacity calculation approach would not be more efficient.

- For ex. TSOs provide no demonstration of the equivalence of CNTC against FB for SWE.

And

We consider that the justification of the use of the coordinated net transmission capacity approach instead of the flow based approach according to art. 20.7 of CACM should be part of the proposal and be publicly available. Moreover, we suggest that TSOs publish a gap analysis of the region in the near future to prepare harmonization envisaged in art. 21.4 of CACM.

As it is not mandatory to consult the study with the comparison between CNTC and flow-based approach SWE TSOs have not published it, but this study will be part of the approval package to be submitted to NRAs in September. This study will include figures and the sensitivity study performed to justify that flow-based approach is not better than CNTC approach for SWE region.

3.12. Planning & next steps

Article 14.2 and 14.3 foresee that the capacity calculation methodologies should be applicable as of S1 2019 and S2 2020 for day-ahead and intraday, respectively. The commitment to more precise go-live dates, especially for the day-ahead capacity calculation methodology, would be welcome.

And

Article 14.7 foresees that the implementation of the capacity calculation methodology can be postponed upon request of the TSOs to their regulators. We request that the TSOs and NRAs provide appropriate information and justification to market participants when such a postponement occurs. Periodic regional workshops explaining the status of the methodology implementation and testing to stakeholders would be well advised.

And

Finally, we suggest to regional TSOs to organize workshops regularly in the future in order to show progress made in the implementation of this methodology.

More precision is not possible as the Go-Live date will depend on the results of the parallel run experimentation phase. Stakeholders will be informed about the evolution of our project with some new milestones:

- > Stakeholder meeting for the beginning of the external parallel run.
- > New consultation on the final methodology for D-2 CCM project before Go-Live.
- > New consultation on the final methodology for D-1 CCM project before Go-Live.