

ENTSOE consultation on the methodology for coordinating operational security analysis

A Eurelectric response paper

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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September 2020

KEY MESSAGES

This is the Eurelectric's response to ENTSOE's consultation on the all TSOs proposal for **the methodology for coordinating operational security analysis** (CSAm) developed in accordance with article 75(1) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (SO GL).

In accordance with the ACER Decision of June 2019, Article 21 and Article 27 of CSAm shall be amended and submitted to ACER by 19 December 2020.

The following amendments are included in the proposed CSAm Amendments:

- Amendment to CSAm Art. 21 Remedial actions inclusion in individual grid models
- Amendment to CSAm Art. 27 Coordination of XNEs and XRAs in Overlapping zones (inter-CCR)

The following amendment is yet under discussion with ACER/NRAs but a high-level description is provided in the explanatory document:

- Amendment to CSAm Art. 27 Cost-sharing for XNEs and XRAs in Overlapping zones (inter-CCR)

Article 21 Remedial actions inclusion in individual grid models

1. *The status or set point of any network element modelled in the Individual Grid Models referred to in Article 33(1)(a) shall be defined to reflect the best forecast operational situation, in accordance with the provisions of Article 12 of CGM Methodology.*
2. *For topological configuration, no distinction is made between remedial actions and forecasts within the initial day-ahead IGMs.*
3. *Monitoring of topology included in the IGMs shall be performed by RSCs as a solution for improvement of forecasts and to prevent unfair behaviour of TSOs that could impact the Cost Sharing.*

- [Article 21: Explanation from ENTSOE to the amendments](#)

Does the proposed amendment to Article 21 "Remedial actions inclusion in individual grid models" require a change or clarification?

Please propose an alternative wording and add an explanation why this change is needed, or specify your question(s) regarding the article:

Eurelectric's Response

From a formal point of view, Eurelectric would appreciate that TSOs highlight changes compared to the initial state in a mark-up version of the methodology.

Paragraph 1

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Paragraph 2

The proposed draft does not make it clear whether the principles also hold for non-topological configuration. If not, Eurelectric would be interested to know what is foreseen for non-topological remedial actions given they can highly influence power flows in the network. Eurelectric does not understand what would prevent TSO to identify changes compared to an initial state.

Paragraph 3

What does monitoring mean in this context? What does the word "unfair" mean? And to whom this is unfair?

Eurelectric believes that the present methodology should target efficiency first, before any consideration of cost allocation. In any case, TSOs taking decisions to maximize their revenues against the overall welfare should be subject to in-depth investigations in terms of integrity and competition rules.

Article 27 Overlapping zones, XNEs and XRAs

1. *Where a network element has been defined as XNE in a Bidding Zone belonging to two or more different CCRs and where the physical flows on this XNE are significantly impacted by activation of XRA in two or more CCRs as referred in paragraph 4, this XNE shall be defined as overlapping XNE. Such XNEs shall be grouped into overlapping zones and the concerned CCRs shall be considered as impacting CCRs for these overlapping zones.*
2. *The operational security violations on the overlapping XNEs shall be addressed at a regional level first, in a single CCR, together with other XNEs of this CCR. This unique CCR shall be appointed by the overlapping XNE connecting TSO(s). In case an Overlapping XNE is a tie-line, this overlapping XNE shall be appointed to the CCR the border it belongs to. Subsequently, in day-ahead timeframe the residual operational security violations, resulting after each coordinated regional operational security assessment is finalised, shall be addressed with a common cross-regional coordination process involving TSOs and RSCs of all impacting CCRs.*
3. *For intraday timeframe, default approach is to run a cross-regional coordination after any intraday coordinated regional operational security assessment. In case within a CCR that a coordinated regional operational security assessment is not followed by a cross-regional coordination process due to time constraints or according to an agreement between involved CCRs, then a conservative approach shall be implemented for intraday coordinated regional operational security assessment. The participation within the cross-regional run after intraday shall be communicated at least on a yearly basis. This conservative intraday coordinated regional operational security assessment shall not increase the loading of overlapping XNEs more than a maximum percentage of the remaining available margin obtained in the CGM, which includes all the agreed XRAs from the previous cross-regional coordination process and regional coordination processes from all CCRs. It will ensure that neighbouring CCRs do not create residual overloads within intraday time frame in case no cross-regional coordination can be performed. This maximum percentage of the remaining available margin is described in Annex II.*
4. *Overlapping XNEs shall be identified through a quantitative approach by RSCs in cooperation with TSOs, according to the following process:*

Individual remedial action influence factor shall be computed for each XRA appointed to a specific CCR against all the XNEs with contingencies which are appointed to a different CCR according to paragraph 2;

XRAs made up of multiple devices operated simultaneously in a common way (e.g. parallel PSTs operated with same tap position) shall be considered as an individual XRA and are therefore associated to an individual remedial action influence factor. Such XRAs constituting of multiple devices shall be defined by TSOs;

All XRAs which have an individual remedial action influence factor below 1% shall be discarded. The remaining XRAs shall be grouped per CCR in accordance to Article 27 paragraph (9);

The maximum potential XRAs impact of a given CCR A on XNEs with contingencies which are appointed to a different CCR B according to paragraph (c) is computed as the sum of the absolute values of the remedial action influence factors of the group of XRAs of CCR A;

If the maximum potential XRAs impact of a given CCR A on at least one XNE with contingencies appointed to a different CCR B is higher than or equal to 5%, this XNE is labelled as Overlapping XNE and CCR B is labelled as impacted by CCR A.

5. *Overlapping XNEs are assessed on an yearly basis using the CGMs built for the year ahead scenarios established according to article 65 of SO Regulation and on TSO request in case of significant changes occurred in the grid (e.g. commissioning/decommissioning of relevant network elements, forced outages, etc.), using updated year-ahead common grid models in accordance with SO Regulation Article 68. Requesting TSO shall provide a sound justification for such a reassessment. If an XNE is identified as overlapping XNE during the assessment of at least one of the models, this XNE becomes an overlapping XNE as long as there is no new yearly assessment and it participates in further steps of the cross-regional coordination process.*

6. *When residual violations are identified during the common cross-regional coordination process:*

If the violations are located on Overlapping XNEs as referred to in paragraph (4)(e), the effective XRAs (i.e. Overlapping XRAs) of the impacting CCRs should be used to solve such violations;

If the violations are on XNEs which are not Overlapping XNEs as referred to in paragraph (4)(e), the XRAs offered to the CCR to which the XNE is assigned according to paragraph 2 should be used.

7. *To ensure a consistent interaction between coordinated regional operational security assessment and coordinated cross-regional operational security assessments, residual violations shall be identified with application of the contingency list from each CCR and the application of all XRAs from each CCR agreed within each coordinated regional operational security assessment. All the XRAs made available during each coordinated regional operational security assessment can be re-evaluated during this step.*
8. *RSCs of the concerned CCRs shall identify and propose solutions to manage residual violations with the available input data and supporting tools, and with respect to the time constraints of day-ahead and intraday processes. The identification of economically efficient remedial actions to address residual operational security violations at cross-regional level shall be done with the aim to limit deviation with agreed XRAs within each coordinated regional operational security assessment while:*

Solving the residual overloads

Not generating new overloads on XNEs

Minimizing the costs of remedial actions

Respecting the technical, operational, procedural and legal constraints defined by each TSO within the coordinated regional operational security assessment.

9. *The XRA connecting TSO(s) shall decide on a single impacting CCR to which it shall provide such remedial action. This decision shall take account of the assumptions on remedial actions considered in capacity calculation methodologies established pursuant to Articles 20 and 21 of the CACM Regulation.*
10. *In the implementation of Articles 78, 80 and 81 of the SO Regulation, RSCs and TSOs shall take into account the agreements reached in accordance with paragraphs 1 to 8.*

- [Article 27: Explanation from ENTSOE to the amendments](#)

Does the proposed amendment to Article 27 "Overlapping zones, XNEs and XRAs" addressing the Coordination of XNEs and XRAs in overlapping zones (inter-CCR) require a change or clarification?

Please propose an alternative wording and add an explanation why this change is needed, or specify your question(s) regarding the article:

Eurelectric's Response

Paragraph 1

Eurelectric would like to emphasize the importance of the proper definition of CCRs. Eurelectric has constantly emphasized this point in all the consultations of ENTSOE and ACER on the definition of CCRs.

If there exist XNEs that are significantly impacted by exchanges on borders belonging to different CCRs, this means that the corresponding CCRs should be merged.

Hence, the case of overlapping XNEs and XRAs should be extremely rare or related to exceptional circumstances, and Eurelectric would welcome that such cases are duly reported and their frequency and impact finely monitored so that the CCR delineation can be amended if need be.

Also, the paragraph needs more clarity in terms of the definition of overlapping XRAs.

Paragraph 2

There is ambiguity on certain wordings of the text. "The operational security violations on the overlapping XNEs shall be addressed at a regional level first, in a single CCR, together with other XNEs of this CCR". In this statement, it is not clear who (which RSC) is going to address the operational security violations on the overlapping XNEs at a regional level.

In that context, it would be interesting to detail the case of a XNE in a TSO that belongs to 2 CCRs (eg: Germany in HANSA and CORE CCRs). From this perspective, the methodology should detail the approach to select the CCR that will handle the case in the first place. This is key to ensure that the Redispatching & Countertrading are efficiently managed, and also key in terms of sharing the related costs.

We also consider that the countertrading on all borders of the CCRs involved should be considered as a potential remedial action, even though only one CCR is leading the activation of remedial actions and sharing the related costs.

It seems that the process is a two-step process defined by a regional OSA and then cross-regional coordination. If this is the case, the text could be much clearer to make the distinction between those two steps that entail different actors and governance.

Paragraph 3

The text requires more clarity in terms of the processes described. The text is not clear in terms of cross-regional cooperation. What does that entail?

It is mentioned that a conservative approach shall be implemented for intraday coordinated regional operational security assessment in case a coordinated regional operational security assessment is not followed by a cross-regional coordination process. What does this conservative approach mean?

Also, it is stated that the participation within the cross-regional run after intraday shall be communicated at least on a yearly basis. Once again the text is ambiguous, to whom this shall be communicated?

Furthermore, there is mention of a constraint of the loading of overlapping XNEs more than a maximum percentage of the remaining available margin obtained in the CGM. It seems to be a static approach what would not contribute to the economic efficiency to the best extend possible.

Also, how a certain percentage can be applied if the value of the remaining available margin is less than zero (because a constraint is identified on this specific XNE). What happens if this maximum percentage cannot be respected, will that trigger another process?

Paragraph 4

Identifying the XNE considering the effect of all XRA seems to be a good approach. However, the way to calculate the individual remedial action influence factor may pose some difficulties:

1. For network topology, the methodology looks fine as there is no change in generation/consumption patterns
2. For Redispatching and Countertrading: the complementary re-balancing action has to be defined properly so that the impact of the redispatching on the XNE can be assessed. Using a proportional re-balancing action is not correct because this is not how it will be done in the operations so that it does not reflect properly the influence factor of the RA on the XNE. For the first year, however, this seems a fair approach but as from the second assessment year, we urge TSOs to consider RD&CT combination that effectively took place during the past year to render the assessment realistic.

Paragraph 5

It is mentioned that overlapping XNEs assessment is done on a yearly basis or based on TSO request. Rather than capturing overlapping XNEs in one yearly deterministic scenario, it would be better to have a frequent assessment as far as possible. In case of TSO request, the requesting TSO shall provide a sound justification for a reassessment. However, the text is not clear about the party to whom this sound justification shall be provided. And it is also not clear who is going to make the final decision.

Paragraph 6

The text states the effective XRAs in 6 a. How to consider an XRA effective and the other not? Moreover, there is no mention of 'effective' with the XRAs mentioned in 6 b. Why?

Paragraph 7

It is not clear why this paragraph is kept here. What value does this paragraph add to the article?

"All the XRAs made available during each coordinated regional operational security assessment can be re-evaluated during this step". What does 'this step' refers to in this sentence?

Again, we ask more clarity on the process linking both coordinated regional operational security assessment and coordinated cross-regional operational security assessment and how do they contribute to the detection of the residual violation.

Paragraph 8

In the text, it is mentioned that the identification of economically efficient remedial actions to address residual operational security violations at cross-regional level shall be done with the aim to limit deviation with agreed XRAs within each coordinated regional operational security

assessment while minimizing the costs. Why is this objective function more important than the minimization of the costs? What objective function do RSCs intend to implement in the algorithm? What does it mean to limit the deviation? What is the limit? Why not an exact mathematical formula to select the RA and make it transparent?

Eurelectric would like to remind that efficiency (contributing to higher welfare level) should be the primary objective and operational applicability considered as a constraint in the optimization issue.

Paragraph 9

What does an impacting CCR mean? There is no clear definition.

“This decision shall take account of the assumptions on remedial actions considered in capacity calculation methodologies established pursuant to Articles 20 and 21 of the CACM Regulation”. This statement needs more clarity as this is clear how a TSO can decide to which CCR a RA is provided.

Annex II

In accordance with Article 27, the maximum percentage of the remaining available margin is x% for the conservative approach within Intraday timeframe.

Eurelectric's Response

When this x % will be defined? Why this is mentioned in the annexe. Again, to maximize social welfare and make sure the most efficient RA is selected, we consider that this percentage should be low so that cross-regional coordination can take place as much as possible under the operational constraint.

Article 27 Cost sharing for XNEs and XRAs in Overlapping zones (inter-CCR)

Information about Cost Sharing Methodology

Cross-regional Cost Sharing principles are still under discussion but general concept is:

- *the costs of the Overlapping XRAs aiming at solving residual operational security violations on an Overlapping XNE shall be borne by the CCR where the operational security violations on such XNE were not addressed at the regional level.*
- *this is to avoid that the CCR which has solved operational violation on the XNE during the regional optimization does not pay twice, at regional level and cross-regional level.*
- *The following exceptions apply to the above principles, when considering an Overlapping XNE with a residual operational violation:*
 - *in case regional operational security violations was not fully solved at regional level*
 - *in case not all the XRAs agreed at regional level were consistently included in the CGM used for the cross-regional process*
 - *in case there was remaining available margin in the initial CGM and both CCRs increased burdening flows resulting from regionally agreed XRAs. In that case both CCRs would bear the costs proportionally to their additional burdening flows on this Overlapping XNE. This condition applies if the Overlapping XNE is considered as a Scanned element in the CCR not in charge of optimizing it at regional level.*
- *in case the agreed XRAs from one CCR have not an impact equal or higher than 5% over another CCR*

- *The costs for solving residual overloads to be borne by TSOs of involved CCR(s) should be shared using the following principles:*
- *Market flows, internal flows and loop flows from involved CCR(s) should pay for costs for solving the residual overload. For a dedicated Overlapping XNE, for TSOs located in two or more involved CCRs, amount of flow types from those TSOs which have already be paid in the regional cost-sharing of the involved CCR should not be paid again.*
- *The share of internal flows or loop flows should be borne directly by the concerned TSOs.*
- *The rules for Flow Decomposition and the rules for identifying the overlapping XRAs activated to address residual operational security violations on overlapping XNEs and to attribute the related costs to individual overlapping XNEs are also still under discussion.*

Please comment on the general concept described in the explanatory note for the amendment to Article 27 "Overlapping zones, XNEs and XRAs" addressing the Cost-sharing for XNEs and XRAs in Overlapping zones (inter-CCR).

Please propose an alternative wording and add an explanation why this change is needed, or specify your question(s) regarding the article:

Eurelectric's Response

Eurelectric would like to remind that the calculation of MACZT and the activation of RAs should primarily aim at maximizing the efficiency of the dispatch at European level.

Cost-sharing should not interfere with this primary objective when exchanges in multiple CCRs impact the same overlapping XNE that faces congestion.

The second bullet point is not clear. It seems to us that the negation should not be used in the sentence. It would become: *this is to avoid that the CCR which has solved operational violation on the XNE during the regional optimization does pay twice, at regional level and cross-regional level.*

The first exception is not clear and contradictory to the first bullet point.

In terms of flow decomposition, it seems fair to us to use the same methodology than the one used under article 74 of CACM for the sake of consistency and to avoid cost-sharing distortion amongst TSOs.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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