

1 General Consideration

- * 1.1 Name:
- * 1.2 Email:
- * 1.3 Company: ENTSO-E on behalf of All TSOs
- * 1.4 Country
- * 1.5 Should the following answers to this public consultation be treated as confidential?

- Yes
- No

ACER will publish all non-confidential responses. It will process personal data of the respondents in accordance with Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data, taking into account that this processing is necessary for performing ACER's consultation task. For more details on how the contributions and the personal data of the respondents will be dealt with, please see [ACER's Guidance Note on Consultations](#) and the specific privacy statement referred to this consultation.

2 Background Information

Related documents:

- [Regulation \(EU\) 2019/942 of the European Parliament and of the Council of 5 July 2019 establishing a European Union Agency for the Cooperation of Energy Regulators \(recast\)](#)
- [Regulation \(EU\) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity \(recast\)](#)
- [Commission Regulation \(EU\) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management \(CACM Regulation\)](#)
- [Commission Regulation \(EU\) 2017/1485 of 2 August 2017 establishing a Guideline on electricity transmission system operation \(SO Regulation\)](#)
- [Decision No 04/2019 of the Agency for the cooperation of energy regulators of 1 April 2019 on the electricity transmission system operators' proposal for amendments of the determination of capacity calculation regions](#)
 - [Annex I - Amendment of the determination of capacity calculation regions in accordance with Article 9\(13\) of the Commission Regulation \(EU\) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management](#)
 - [Annex III - Consolidated list of capacity calculation regions with assigned bidding zone borders and attributed TSOs](#)
- [All TSOs' capacity calculation regions assessment report](#)
- [Decision of the board of appeal of the European Union Agency for the cooperation of energy regulators A-001-2017_R \(consolidated\)](#)
- [All TSOs's proposal for the 'Definition of the capacity calculation regions in accordance with Article 15\(1\) of the Commission Regulation \(EU\) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management'](#)
- [ACER Guidance Note on Consultations](#)

Background

The first determination of the capacity calculation regions came into effect on 17 November 2016 with the ACER Decision 06/2016 on the TSOs proposal for the determination of capacity calculation regions.

A first revision of the determination of the capacity calculation regions added the new bidding zone border between Belgium and Great Britain and its corresponding TSOs to the Channel CCR and came into effect on 18 September 2017 with the approval by all regulatory authorities.

The second revision of the determination of the capacity calculation regions came into effect with the ACER Decision 04/2019 on the all TSOs' amendment proposal, which was referred to ACER and approved on 1 April 2019. Following an introduction of the bidding zone border between DK1-NL, ACER assigned this border to the Hansa CCR to avoid interference with ongoing implementation processes in the regional capacity calculation methodologies. However, ACER also concluded in its Decision that with the introduction of this new bidding zone border it would be more efficient, in the long-term, to place the DK1-NL together with the DK1-DE/LU bidding zone border in the Core CCR. Therefore, the Decision included a provision for all TSOs to:

1. assess the future determination of bidding zone borders in the respective regions around these bidding zone borders; and
2. submit a proposal including the reassignment of the DK1-NL and the DK1-DE/LU bidding zone borders and an implementation timeline for such reassignment unless the assessment proves that the current Determination of CCRs is the most efficient one.

An assessment was submitted to ACER by all TSOs within the required deadline (18 months after Decision 04/2019) on 1 October 2020. This assessment aimed to prove that the current CCR determination is the most efficient assignment of bidding zone borders and was therefore not submitted together with an amendment proposal.

On 22 May 2020, ACER's Board of Appeal issued its decision A-001-2017 (consolidated) inviting the relevant parties to initiate the procedure to replace the currently applicable ACER Decision 06/2016. Following this, all TSOs submitted the Proposal to ACER on 9 November 2020, which, once approved by ACER, will replace the CCR determination established with the ACER Decision 06/2016 and its subsequently approved amendments.

The submitted Proposal reflects the currently established CCR determination with the addition of the SE4-DE/LU to the Hansa CCR following the certification of Baltic Cable AB as a TSO, as well as amendments following the Italian bidding zone review. Besides the description of the current CCR determination, Article 14 of the Proposal also addresses the requirement for a CCR assessment and the future reassignment of the DK1-NL and DK1-DE/LU bidding to the Core CCR stemming from the ACER Decision 04/2019.

ACER has to adopt a decision on the Proposal by 9 May 2021. In the context of adopting this decision, ACER seeks an opinion of the stakeholders on ACER's proposed amendments to the Proposal. Other comments and concerns are also welcome.

3.1 Topic 1: The status of DK1-NL and DK1-DE/LU bidding zone borders

Previous processes related to these two borders

As described above, all TSOs submitted a CCR assessment report aiming to prove that the currently established CCR determination is more efficient than the foreseen shift of DK1-NL and DK1-DE/LU bidding zone borders to Core CCR. Since this CCR assessment report was submitted shortly before the submission of the Proposal, recital (10) of the Proposal acknowledges that the evaluation of the submitted CCR assessment report is ongoing and therefore Article 14 of the Proposal still reflects the same requirement from ACER Decision 04/2019 (i.e. for TSOs to perform an assessment and submit a proposal for amendment).

Regarding the content of the submitted CCR assessment report, ACER deems that the aim and specific requirements for the CCR assessment report following ACER Decision 04/2019 was misunderstood by TSOs. In its Decision 04/2019, ACER acknowledged the drawbacks of immediate reallocation of the concerned bidding zone borders due to ongoing implementation projects and rather requested an

assessment looking into future determination of CCRs after the ongoing projects are finished. The submitted CCR assessment report on the other hand mainly focuses on the current status of the CCR determination and does not:

- sufficiently assess the possibility of applying solutions for addressing unscheduled allocated flows (e.g. application of advanced hybrid coupling) in alternative CCR configurations (e.g. DK1-DE/LU and DK1-NL bidding zone border in Core CCR);
- sufficiently address the impact of future grid topology (in particular the addition of the west coast line on the AC bidding zone border connecting DE/LU with DK1);
- assess the effects on regional operational security coordination pursuant to Article 76 of the SO Regulation under different CCR determinations in accordance with the requirement from Article 6(2)(c) of Annex I of the Decision 04/2019;
- invalidate the arguments for the foreseen reallocation of the relevant bidding zone borders presented in the Decision 04/2019.

Therefore, ACER is of the opinion that the submitted CCR assessment report does not constitute a reason to conclude that no change is needed in future regarding the DK1-NL and DK1-DE/LU bidding zone borders.

ACER agrees that the foreseen reallocation of DK1-NL and DK1-DE/LU bidding zone borders should not be implemented in a timeframe that would interfere with ongoing, high-priority implementation processes (e.g. Core DA and ID CCM). Nevertheless, ACER deems it important to allow for efficient planning of the long-term development of the internal energy market by providing timely signal regarding the future evolution of CCRs. This is important in order to plan future integration projects in a way that changes in CCR do not significantly affect them. As the scope of such exercise is to provide a long-term signal for planning, ACER deems it reasonable to allow for some more time for an appropriate assessment regarding efficient placement of the DK1-NL and DK1-DE/LU bidding zone borders. Thus, ACER considers it appropriate to provide TSOs additional 12 months to perform such an assessment.

Regarding the scope of the assessment, ACER intends to improve the requirements for a CCR assessment on the basis of which changes of the CCR determination should be made. Also, to simplify the process and discussion regarding the placement of DK1-DE/LU and DK1-NL, ACER proposes that these two borders are by default allocated to the Core CCR and thereby the TSOs assessment would only require to define the appropriate timing for this reallocation. Alternatively, if TSOs disagree with the default solution, they may prove that the default solution is not the most efficient one in which case they would need to demonstrate such efficiency and make a proposal which cancels such reallocation.

In what follows, ACER presents the arguments why it believes that in the long-run the DK1-DE/LU and DK1-NL bidding zone borders should be allocated to Core CCR.

ACER's view regarding efficient capacity calculation

While the argumentation from ACER Decision 04/2019 for moving the relevant bidding zone borders remains equally valid for the present Decision, ACER would like to further elaborate on the reasons why the future reallocation of the DK1-DE/LU bidding zone border into the Core flow-based capacity calculation would be more efficient than the currently foreseen application of a coordinated net transmission capacity (cNTC) approach.

Once the new west coast line on the AC bidding zone border DK1-DE/LU is operational, this border will constitute from six AC interconnectors (i.e. three double circuits). The application of cNTC approach on this border would not be efficient, because such approach incorrectly makes a static

assumption about the source and the sink behind the electricity exchange on DK1-DE/LU border. Typically, TSOs would assume that exchange from DK1 to DE/LU will be produced in DK1 and consumed in DE/LU. In reality, however, the source of this exchange will depend on the market outcome which is known only in capacity allocation. Consequently, the cNTC approach will make a static ex-ante assumption of the flow pattern at the interconnectors on this border, whereas in reality the location and size of the congestion depends on the market outcome in Core and Nordic CCR (i.e. net positions of those bidding zones), which can only properly be modelled with flow based approach. Therefore, the location and size of physical congestion on this border can only be accurately simulated within the flow-based capacity calculation. Depending on the many different possibilities regarding the sources and sinks behind the exchange on the DK1-DE/LU bidding zone border, a congestion might occur on either AC interconnectors of the western line or eastern line on the DK1-DE/LU bidding zone border (also the size of the congestion will differ). While before the implementation of the western link the flow pattern on this border was almost independent of market outcome outside DK and DE/LU, this is no longer the case with the additional western link. If the inaccuracy about the location and size of physical congestion is not properly addressed with the flow-based approach, it would need to be addressed with higher reliability margin in cNTC approach, which would thereby reduce the effectively available cross-zonal capacities.

Such alignment between availability of capacities for the market and the related physical availabilities also provides the necessary transparency on the size and location of physical congestion, which is much better in the flow-based approach. This also allows for accurate monitoring of the margin available for cross-zonal electricity trade (MACZT) values to monitor the fulfilment of the 70% requirements. In contrast, the monitoring of MACZT in the AC networks with cNTC approach can never accurately determine whether the 70% requirement has been effectively fulfilled.

The advanced hybrid coupling (AHC) in the AC borders with cNTC approach, as proposed by all TSOs, is not an appropriate solution to address the impact of one CCR on the other CCR. This is because in the cNTC approach an exchange over such border assumes a fixed distribution of flows over the concerned AC interconnectors, whereas in reality the distribution of such flows depend on the set of net positions of bidding zones in the vicinity. For this reason, the AHC is only appropriate for the HVDC bidding zone borders (i.e. between the Continental Europe Synchronous Area and the Nordic Synchronous Area) as the physical flows resulting from exchanges on such borders can be correctly simulated without any loss of efficiency and accuracy.

ACER's view regarding efficient regional operational security coordination

In addition to the higher efficiency in capacity calculation and allocation by applying the flow-based approach on AC bidding zone borders as argued above, ACER is also of the opinion that regional operational security coordination and related processes can be more efficiently performed if the three bidding zone borders between DK1, NL and DE/LU are assigned to the same CCR. Any significant event, which requires regional operational security coordination (e.g. an outage of assets or deviation of forecasts) and takes place in proximity to this triangle of bidding zone borders, will need to involve the common optimisation of remedial actions from DK1, NL and DE/LU. An outage of the DK1-NL HVDC interconnector would, for example, require a large amount of remedial actions located in these bidding zones but, under the current determination of CCRs, these bidding zones are not applying a common methodology for i) regional operational security coordination in accordance with Article 76(1) of the SO Regulation, ii) coordinated redispatching and countertrading in accordance with Article 35 of the CACM Regulation and iii) redispatching and countertrading cost sharing in accordance with Article 74 of the CACM Regulation. A cross-regional coordination of remedial actions and the related sharing of costs cannot be considered as possible enduring solution to address the problems related to these three borders, since such coordination is always suboptimal (i.e. less efficient) and uncertain (unclear whether the problem can always be resolved). Cross-regional coordination should, for this reason, only be applied as a temporary solution until the determination of CCRs can be improved. Only on HVDC interconnectors, the cross-regional coordination could be

considered as a more permanent solution, since managing the congestions on those elements is much easier and they have limited impact on other TSOs.

ACER's proposed amendments to the Proposal

For the above reasons, ACER aims to amend the Proposal such that:

1. DK1-DE/LU and DK1-NL are by default reallocated to Core CCR and, consequently, the DK1-SE3 and DK1-DK2 bidding zone borders are assigned to Hansa CCR together with the other bidding zone borders of DC interconnectors between the Continental Europe Synchronous Area and the Nordic Synchronous Area.
2. All TSOs are required to submit an amendment to the determination of CCR by 12 months after the adoption of the present decision. Such an amendment should propose the appropriate timeline for the reallocation of the concerned borders, taking into account the impact on ongoing implementation processes of terms and conditions or methodologies in the existing CCRs.
3. All TSOs have the right to disprove ACER's opinion that the reallocation in point 1 is not efficient in which case they should propose an amendment of the proposal cancelling such reallocation and complemented by an EU-wide assessment, which proves that the proposed change in the CCR determination would not provide higher efficiency in terms of:
 - efficiency of capacity calculation and allocation in all timeframes; and
 - efficiency of regional operational security coordination in accordance with Article 76(1) of the SO Regulation, coordinated redispatching and countertrading in accordance with Article 35 of the CACM Regulation and redispatching and countertrading cost sharing in accordance with Article 74 of the CACM Regulation in all CCRs.

Q1 - Please provide your comments concerning the ACER's reasoning for default reallocation of Hansa CCR bidding zone borders and the request to TSOs to make a proposal on a suitable timeline for such reallocation.

Impact on methodology implementation

The position of ACER that a reallocation should not interfere with ongoing implementation processes is fully supported.

In this respect it is important to underline that, aside from Core DA and ID CCM implementations, Core parties will also be implementing RDCT and LT CCM in the years to come.

Capacity calculation

The implementation of flow-based in CCR Core and CCR Nordic and AHC will improve the quality of calculation and coordination in CCR Core and CCR Nordic compared to today. This should be taken into account when deciding on moving CCR borders. Also, these ongoing developments should not be delayed by reallocation of bidding zone borders due to their wider importance. If the implementation of AHC and flow-based in CCR Core cannot reduce the unscheduled flows, then all-TSOs should consider a possible CCR reconfiguration in the longer run.

ACER argues that the use of C-NTC methodology is not suitable for the DK1-DE/LU border as in reality the location and size of the congestion depends on the market outcome in Core and Nordic CCR, which can only properly be modelled with flow based approach. The TSOs believe that the outcomes of a flow-based capacity calculation are largely similar to the cNTC approach for the DK1-DE/LU bidding zone border.

An interconnection between two bidding zones A and B, is considered to be radial when there is no alternative AC-path other than directly across the bidding zone border between A and B, for example the Danish-German AC border. There is a one-to-one translation from the commercial power exchange between those bidding zones into a physical cross-border flow on the lines. Translated into the flow-based parameters, this means the combined interconnection has a PTDF = 1.

The full change in net position (NP) between the bidding zones A and B fully manifests onto the capacity of the interconnection. In case there are several lines connecting the two radially connected substations, the individual PTDFs of these lines sum up to 1 in total. I. e. the same amount of power that enters the line also must leave it again. In the described radial setup, there are no synchronous connections to other bidding zones. Therefore, any exchanges between other bidding zones have a PTDF = 0 onto this interconnection. Bidding-zone borders connected by HVDC lines also have no effect on the interconnection between A and B.

In case of an NTC calculation, the NTC value between the bidding zones A and B is equivalent to the full change in net position since the whole flow must pass through the interconnection between A and B. Therefore, both methods will lead to the same results.

This shows that the cNTC method is an efficient means to allocate the commercial exchanges in grids with radial connections, and therefore also on the DK1-DE/LU bidding zone border. The situation in meshed grids – like the Continental European and Nordic power systems – a commercial exchange between the two bidding zones A and B results in a physical flow fanning out through the meshed system. It is exactly this behaviour that is captured by the flow-based methodology, which makes it the preferred solution in meshed grids.

Given the physical layout of the DK1-DE/LU bidding zone border and the DK1 bidding zone in general, the situation of the flow taking alternative paths cannot happen. In fact, in radially connected systems, the flow-based methodology does not provide different results and therefore has not any added value compared to cNTC, as there are no alternative AC-route from bidding zone A to bidding zone B.

Where are congestions actually likely to occur?

It is likely that congestion can occur on the DK1-DE/LU bidding zone border in the future as well, which can be caused both by the cross-border lines as well as internal critical network elements, also when accounting for the CEP70% requirement. Also, dynamic stability issues for this cross-border region need to be taken into account. Next to the Hansa CCM covering the cross-border elements, Core (at least for a transitional period) and Nordic flow-based will cover DK1 and DE to handle these internal congestions and allocate these efficiently, albeit the flow-based methodologies in DK1 and DE will be slightly different.

With the bidding zone border DK1-DE/LU being the only AC connection from Denmark to Germany and the east coast and west coast lines being located quite close to each other they are radial in an electric sense. All net-position deviations will materialise on the DK1-DE/LU border, on these combined lines, and will have insignificant impact on all other bidding zone borders due to the distance. Thus, the application of flow-based will also have insignificant impact on the market efficiency on this border. This impact should also be compared to all the other assumptions and simplifications which are made to enable the flow-based methodology, the GSK strategy, linearisation of electrical parameters etc. Flow-based has significant efficiency advantages in cases where there are several paths from A to B, whereas for the DK1-DE/LU BZB, there is only one AC-path.

Monitoring

All relevant grid and/or cross-border elements will be monitored in both situations, as such, the difference between the two options is limited. The CCR Hansa CCM covers the actual cross border CNEs and the flow-based methodologies of CCR Nordic and Core covers the relevant grid elements (both internal and on BZBs within the CCR). Therefore, only the distribution between the east and west coast lines will be undisclosed in the market monitoring and monitoring of MACZT in case the DK1-DL/LU BZB is located in CCR Hansa.

In the operational security analysis it will be determined, if any overloading's on these cross-border elements occurs. Congestion on the bidding zone borders itself is legally acceptable when in line with regulations (and accompanying action plans and derogations) and is therefore not a problem itself.

Application of advanced hybrid coupling (AHC)

When calculating the cNTC in CCR Hansa, this is done on the basis on the GSK's from the Nordic and Core Flow based methodologies for the same topology settings, as specified in the methodology. Thus, the NTC's calculated will assume the same distributions of flow as the PTDF matrix calculated in the flow based covered areas. For example, in a high wind forecast scenario, the east coast lines will likely be less loaded than the west coast lines, thus when doing the NTC calculation, these will probably be first to overload. Therefore, it will probably limit the exchange capability a bit more than in a more balanced scenario, which means it is not correct to specify that the distribution is fixed.

It has to be noted, that in the CCR Hansa case of calculating cNTC on the DK1-DE/LU AC border, there is no need to make assumptions on how to distribute the increase in net position among different AC borders, as it is a lot of other places. The reason for this is, that there is only one bidding zone border across which all power flows necessarily will pass, again due to the radial nature of the power system related to the DK1-DE/LU bidding zone border. The zone to zone PTDF=1 regardless if there are 1,2 or 6 circuits across the DK1-DE/LU bidding zone border.

Operational security analysis

In terms of efficient regional operational security ACER argues that regional operational security coordination and related processes can be more efficiently performed if the three bidding zone borders between DK1, NL and DE/LU are assigned to the same CCR, also in terms of common optimization of remedial actions.

As CCR Hansa has appointed TSCNet and Nordic RSC as RSCs for the region, it will be the task of TSCNet to carry out operational security analysis for the parts of the grid south of the CCR Hansa bidding zone border. This means, that they also need DK1 as a part of their area, just as it is the case today. Energinet already today sends CGMs for DK1 to be used by continental TSOs and RSC. Energinet will adjust to the continental procedures as they develop over time to ensure that DK1 can be part of the relevant procedures as needed.

Energinet will supply its remedial action list to Nordic RSC, and the RSCs (TSCNet and Nordic RSC) will have to exchange information on availability of remedial actions to handle any foreseen overloading. This means that it will be an iterative process to determine how many remedial actions that will have to be exchanged between the Nordic area and the continental area. This coordination

process will have to be done, irrelevant whether the interface between CCR Core and CCR Nordic is on the Nordic HVDC lines or on the southern DK1 BZBs.

Q2 - Please provide your comments concerning the option to cancel such reallocation and the assessment criteria for making such a proposal.

TSOs are concerned about the fact that the request for this change is not accompanied by a objective assessment that shows the change results in the desired outcome, which TSOs deem a reasonable requirement.

ACER gives the TSOs the right to disprove ACER's opinion that the reallocation is not efficient with an amendment of the proposal cancelling such reallocation and complemented by an EU-wide assessment. Such an EU wide assessment within 12 months after ACERs decision based on methodologies which are not implemented and therefore the tools and data need will not be available, will be a difficult assessment to correctly perform.

This is not seen as a proportionate approach for TSOs to disprove ACERs opinion as the TSOs previously indicated that such analysis first of all should be made on valid data when the effect of AHC and flow-based is known, and risk of unscheduled flows in the CCR Core grid can be determined.

The difference between the way ACER substantiates it's opinion in this matter and the way TSOs are required to substantiate their opinion or disproof of ACER's opinion is concerning for TSOs, as this does not show a cooperation on the basis of equality. In such a discussion, the requirements for substantiating the position should be similar for both parties.

3.2 Topic 2: The status of Channel and UI CCR

Following the consequences of Brexit, ACER concluded in discussions with the European Commission that the Brexit will lead to the deletion of the Channel and UI CCRs, since these CCRs would no longer contain any bidding zone borders under the scope of the capacity calculation regions in accordance with Article 15 of the CACM Regulation.

Q3 - Please provide any comments related to the necessary amendments due to Brexit.

TSOs understand this is the consequence of Brexit, and therefore understand the proposed deletion by ACER. However, TSOs would like to emphasize the added value in an coordinated approach to new working arrangements between the UK and EU member states. This will require a cooperation framework between EU and UK parties, as stipulated in the UK/EU Trade and Cooperation Agreement. It will be important to understand the impact this proposed deletion of the IU and Channel CCRs has on the IU System Operation Region (IU SOR) and the RCC proposal for the IU SOR. Additionally given the isolated nature of Ireland and Northern Ireland who continue to utilise the SDAC platform to conduct Day Ahead trading (albeit in an isolated manner) we would welcome further clarity from ACER on whether there are wider impacts on the IE/NI bidding zone and continued application of EU Regulations in this regard, especially as there will also be a requirement to establish new multi region loose volume coupling arrangements with GB.

3.3 Topic 3: Other issues

Besides the above mentioned foreseen amendments, ACER does not foresee any further significant content amendments to the Proposal at the moment.

Q4 - Please provide any further comments on the proposed CCR determination.

TSOs are pleased to notice that ACER has accepted the proposed amendment of article 7 concerning Greece-Italy CCR. As a matter of fact, the update was necessary in order to take into account the changes in Italian bidding zone configuration entered into operation from January 2021.

TSOs are pleased to also see the inclusion of BalticCable AS in CCR Hansa being accepted by ACER. Additionally, TSOs would appreciate ACER, the relevant NRAs and relevant TSOs to clarify and formalize the situation regarding the allocation of the Kraftnat Aland connections.

TSOs highlights the additional consequences of this decision as the change in the CCR configuration can lead to unintentional reconfiguration of the SORs (according to Art. 3(5) of the ACER Decision 10/2020), which in turn would require an amendment of the RCC Establishment proposal for Central SOR (Art.35 Regulation (EU) 943/2019). Furthermore, according to art. 37 of Regulation (EU) 943/2019, TSCNET would perform RCC tasks for Energinet, which does also not seem to be the intention. However according to article 36 (3) of regulation 943/2019 a change of the SORs must follow the process defined in that article and can not automatically be done by a CCR reconfiguration.

Lastly, TSOs appreciate the legal validity of the CCR determination being resolved again in a rather swift fashion.