ACER
Agency for the Cooperation of Energy Regulators

DECISION OF THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS No 06/2016

of 17 November 2016

ON THE ELECTRICITY TRANSMISSION SYSTEM OPERATORS' PROPOSAL FOR THE DETERMINATION OF CAPACITY CALCULATION REGIONS

THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

HAVING REGARD to the Treaty on the Functioning of the European Union,

HAVING REGARD to Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators[1], and, in particular, Article 8(1) thereof,

HAVING REGARD to Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management[2], and, in particular, Article 9(11) thereof,

HAVING REGARD to the outcome of the consultation with the concerned national regulatory authorities and transmission system operators,

HAVING REGARD to the favourable opinion of the Board of Regulators of 8 November 2016, delivered pursuant to Article 15(1) of Regulation (EC) No 713/2009,

WHEREAS:

1. INTRODUCTION

(1) Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management ('CACM Regulation') laid down a range of requirements for cross-zonal capacity allocation and congestion management in the day-ahead and intraday markets in electricity. These also include specific requirements for capacity calculation regions which, according to the definition in Article 2(3) of the CACM Regulation, are the geographic areas in which coordinated capacity calculation is applied. The determination of the capacity calculation regions is the first step towards the

[1] OJ L 211, 14.8.2009, p. 1.
[2] OJ L 197, 25.7.2015, p. 24.

implementation of the CACM Regulation and, as such, the basis for further implementing acts.

(2) Under Article 9(1) and (6)(b) and Article 15(1) of the CACM Regulation, transmission systems operators ('TSOs') are required jointly to develop a common proposal regarding the determination of capacity calculation regions and submit it to all regulatory authorities for approval. Then, according to Article 9(10) of the CACM Regulation, the regulatory authorities receiving the proposal on the determination of capacity calculation regions shall reach an agreement and take a decision on that proposal, in principle, within six months after the receipt of the proposal by the last regulatory authority. According to Article 9(11) of the CACM Regulation, if the regulatory authorities fail to reach an agreement within the six-month period, or upon their joint request, the Agency is called upon to adopt a decision concerning the TSOs' proposal.

(3) The present Decision of the Agency follows from the regulatory authorities' failure to reach an agreement on the proposal concerning the determination of capacity calculation regions which the TSOs submitted to the regulatory authorities for approval. Annex I to this Decision sets out the capacity calculation regions, pursuant to Article 15(1) of the CACM Regulation, as determined by the Agency.

2. PROCEDURE

2.1 Proceedings before Regulatory Authorities

(4) On 24 August 2015, the European Network of Transmission System Operators for Electricity ('ENTSO-E') and the TSOs responsible under Article 15(1) of the CACM Regulation published an 'All TSOs' draft proposal for Capacity Calculation Regions' ('draft CCRs Proposal') for public consultation. The consultation lasted from 24 August until 24 September 2015.

(5) Following the public consultation, the draft CCRs Proposal was updated with respect to the following elements:

a) the inclusion, in the Central East Europe (CEE) region, of the bidding zone borders between Croatia and Slovenia, between Croatia and Hungary, and between Romania and Hungary from the beginning and of a bidding zone border between Germany/Luxembourg and Austria 'in line with the implementation calendar agreed upon by the relevant regulatory authorities and TSOs in accordance with the Agency Opinion No 09/2015 and at the latest when implementation of flow-based capacity calculation takes place in the CEE CCR in accordance with the CACM Regulation';

b) the commitment from the TSOs in the Central West Europe (CWE) and the CEE regions to cooperate towards a merger of those two CCRs, on the basis of existing solutions for the flow-based day-ahead and intraday capacity calculation methodology.

(6) On 13 November 2015, ENTSO-E published and submitted 'on behalf of all TSOs' to the Agency an 'All TSOs' proposal for Capacity Calculation Regions (CCRs) 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' dated 29 October 2015[3] ('CCRs Proposal'), together with an explanatory document[4].

(7) By 17 November 2015, all TSOs required by the CACM Regulation submitted the CCRs Proposal and the explanatory document to their respective regulatory authorities.

(8) On 3 March 2016, the TSOs of the CWE and CEE regions signed a 'Memorandum of Understanding on the development of a common CWE and CEE CCR's day-ahead flow-based capacity calculation methodology and the merger of the CEE and CWE CCR' ('MoU of 3 March 2016'). The MoU of 3 March 2016 indicates the intention of all TSOs from the CWE and CEE regions to develop a common flow-based capacity calculation methodology for the day-ahead timeframe within the deadline provided for in the CACM Regulation and to implement it by Q1 of 2019 at the latest.

(9) By letter of 13 May 2016, the Austrian regulatory authority, Energie-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft ('E-Control'), requested unilaterally all European TSOs (as listed in the annex to the letter) to amend the CCRs Proposal to the effect that the bidding zone border between Germany/Luxembourg and Austria is removed and that the CEE CCR and CWE CCR are merged into one common CWE-CEE CCR.

2.2 Proceedings before the Agency

(10) In a letter of 17 May 2016, the Chair of the Energy Regulators' Forum - i.e. the regulatory authorities' platform to consult and cooperate for reaching a unanimous agreement on a TSOs proposal - informed the Agency that the regulatory authorities, despite their best endeavours, could not reach a unanimous decision on the CCRs Proposal and that, therefore, the Agency should adopt a decision concerning the CCRs Proposal within six months, in accordance with Article 9(11) of the CACM Regulation and Article 8(1) of Regulation (EC) No 713/2009. In the letter, the regulatory authorities' positions were summarised as follows:

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3 https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/ccr/151103_CCRs%20Proposal_approved_updated_clean_and_final_for_submision.pdf

4 https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/ccr/151103_CCRs_explanatory_document_approved_final_and_clean_for_submission.pdf

a) All regulatory authorities agreed with the majority of the CCRs Proposal. However, there appeared to be a common agreement that an amendment to the CCRs Proposal is required, in order to merge the CWE and CEE regions to create a CORE region, subject to appropriate governance arrangements. In addition, there appeared to be a common agreement that the CCRs Proposal should be amended to require TSOs to resubmit a revised translation of the original English proposal if there is a translation issue.

b) Regulatory authorities did not agree on whether the German-Austrian border should be included in the CCRs Proposal.

(11) By letter of 7 June 2016, the Agency's Director asked the services of the European Commission's Directorate-General for Energy for their view on the decision-making process for the CCRs Proposal, in particular with regard to E-Control's request of 13 May 2016 and potential amendments to the CCRs Proposal which the Agency may consider necessary.

(12) On 22 June 2016, the Agency launched a public consultation - PC_2016_E_02 - with regard to the CCRs Proposal, inviting interested stakeholders to submit their comments by 20 July 2016. In that context, the Agency raised five questions, seeking comments on specific issues of the CCRs Proposal, as well as general comments regarding the elements of the CCRs Proposal which were introduced after the public consultation held by ENTSO-E from 24 August to 24 September 2015. A summary and evaluation of the responses received is attached as Annex II to this Decision.

(13) On 22 June 2016, the Agency also directly informed the TSOs which submitted the CCRs Proposal and the respective regulatory authorities about the opening of public consultation PC_2016_E_02 and invited them to send any comment they may have on the CCRs Proposal, in particular on the questions listed in the consultation document, by 20 July 2016.

(14) By letter of 4 July 2016, the services of the European Commission's Directorate-General for Energy informed the Agency that, in their view, first, E-Control's unilateral request of 13 May 2016 did not trigger the amendment process under Article 9(12) of the CACM Regulation so that the responsibility to take a decision on the CCRs Proposal passed to the Agency as of 18 May 2016, and, second, the Agency can decide on the CCRs Proposal in full, including by introducing any change that it considers necessary.

(15) By email of 24 August 2016, the Agency consulted the regulatory authorities about its preliminary findings and conclusions. As regards the issues singled out in the letter of 17 May 2016 (see above para. 10), of those regulatory authorities which responded, all supported the merger of the CWE and CEE CCRs into one CCR[5] and only E-Control

[5] Two regulatory authorities however stressed that this merger should not impact the ongoing regional projects both in the CWE and CEE regions.

opposed the inclusion of a bidding zone border between Germany/Luxembourg and Austria; the German regulatory authority, Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen, stated the need for congestion management on the German-Austrian border.

(16) In addition, the Agency also provided the services of European Commission's Directorate-General for Energy with an opportunity to comment on the Agency's preliminary findings. In their reply of 15 September 2016, the Commission's services provided comments with regard to the potential inclusion of a bidding zone border between Germany/Luxembourg and Austria and with regard to a potential merger of CCRs. They expressed concerns over the inclusion of a bidding zone border between Germany and Austria, as in their view decisions on bidding zones should be taken in the framework of the bidding zone review under the CACM Regulation; therefore, the Agency's decision on the CCRs Proposal should at least make clear that any inclusion of a bidding zone border between Germany/Luxembourg and Austria would not pre-empt the outcome of the bidding zone study. However, they supported the merger of the CWE and CEE CCRs as the best way to ensure the consistency of capacity calculations in Central Europe, and moreover proposed also to merge the 'Channel' and 'Hansa' regions with other regions and to set up a roadmap for merging the 'SWE', 'Baltic' and 'SEE' regions with neighbouring regions as soon as possible.

(17) By email of 15 September 2016, the Agency consulted the regulatory authorities and the TSOs on its preliminary draft decision, which indicated that the CCRs should be defined as proposed in the CCRs Proposal (including the Germany/Luxembourg - Austria biding zone border) subject to the only amendment of merging the CWE and CEE CCRs. Of those regulatory authorities who replied, only E-Control disagreed on substance in that it repeated its objection against the inclusion of the Germany/Luxembourg - Austria bidding zone border. The TSOs, in a joint response of all TSOs, expressed concerns over a merger of the CWE and CEE CCRs. In its individual response, the Austrian TSO APG supported a merger of the CWE and CEE CCRs, while objecting to the inclusion of the Germany/Luxembourg - Austria bidding zone border. A summary and evaluation of the responses received is attached as Annex III to this Decision.

3. THE AGENCY'S COMPETENCE TO DECIDE ON THE CCRs PROPOSAL

3.1 No agreement by the concerned regulatory authorities

(18) Pursuant to Article 9(11) of the CACM Regulation, where the regulatory authorities have not been able to reach an agreement on terms and conditions or methodologies within six months following the receipt of the proposal for such terms and conditions or methodologies by the last regulatory authority concerned, the Agency shall adopt a decision concerning the submitted proposal within six months and in line with Article 8(1) of Regulation (EC) No 713/2009.

(19) As evidenced by the letter of the Chair of the Energy Regulators' Forum of 17 May 2016, all concerned regulatory authorities received the CCRs Proposal by 17 November 2015 and were not able to reach an agreement on the CCRs Proposal by 17 May 2016, i.e. within six months. In particular, the regulatory authorities could reach an agreement neither on a final decision concerning the CCRs Proposal, nor on a decision to request an amendment of the CCRs Proposal by the TSOs.

(20) Therefore, under the provisions of Article 9(11) of the CACM Regulation, the Agency has become responsible to adopt a decision concerning the submitted CCRs Proposal as of 18 May 2016.

3.2 E-Control's request for an amendment

(21) With regard to E-Control's request of 13 May 2016 for an amendment of the CCRs Proposal, some stakeholders considered in their responses to public consultation PC_2016_E_02 that this request was not dealt with in line with the procedure outlined in Article 9(12) of the CACM Regulation and that this procedure ought to be upheld.

(22) Article 9(12) of the CACM Regulation provides for the possibility of amendment requests by regulatory authorities, which may have an impact on the transfer of the responsibility to take a decision to the Agency:

'In the event that one or several regulatory authorities request an amendment to approve the terms and conditions or methodologies submitted in accordance with paragraphs 6, 7 and 8, the relevant TSOs or NEMOs shall submit a proposal for amended terms and conditions or methodologies for approval within two months following the requirement from the regulatory authorities. The competent regulatory authorities shall decide on the amended terms and conditions or methodologies within two months following their submission. Where the competent regulatory authorities have not been able to reach an agreement on terms and conditions or methodologies pursuant to paragraphs (6) and (7) within the two-month deadline, or upon their joint request, the Agency shall adopt a decision concerning the amended terms and conditions or methodologies within six months [...].

(23) The first sentence of Article 9(12) of the CACM Regulation refers to *'the event that one or several regulatory authorities request an amendment to approve the terms and conditions or methodologies submitted in accordance with paragraphs 6, 7 and 8'*.According to E-Control's request for amendment, this wording suggests that a single regulatory authority can request an amendment of the terms and conditions or methodologies which the TSOs submitted in accordance with Article 9(6), (7) and (8) of the CACM Regulation.

(24) Article 9(6), (7) and (8) of the CACM Regulation divide the terms and conditions or methodologies which require approval by regulatory authorities into three different layers: (i) those which are subject to the approval by all regulatory authorities in the EU, pursuant

to Article 9(6); (ii) those which are subject to the approval by all regulatory authorities of the concerned region, pursuant to Article 9(7); and (iii) those which are subject to the individual approval by each regulatory authority or other competent authority of the Member State concerned, pursuant to Article 9(8).

(25) If a single regulatory authority requested an amendment of the terms and conditions or methodologies which are subject to the approval by all regulatory authorities in the EU or by all regulatory authorities of the concerned region, any resubmitted amended terms and conditions or methodologies would still need the approval by all those regulatory authorities and all those regulatory authorities would have to reach an agreement on this approval pursuant to Article 9(11) of the CACM Regulation. It is obvious that such an agreement would not be reached where the request for an amendment had been made unilaterally by one regulatory authority and not agreed upon by all competent regulatory authorities. The submission of an amended proposal, on which the other competent regulatory authorities did not agree, would be of no use. The TSOs cannot reasonably be expected to submit to their respective regulatory authorities amended terms and conditions or methodologies which are not agreed by those regulatory authorities.

(26) Therefore, the amendment request procedure under Article 9(12) of the CACM Regulation is meant to address the concerns of all the regulatory authorities responsible for the approval and to enable finally the approval of the amended terms and conditions or methodologies by all those regulatory authorities. Accordingly, the right to request an amendment can be exercised only in coordination and in agreement with all regulatory authorities that are responsible for the approval of the specific terms and conditions or methodologies at issue.

(27) Therefore, with regard to the context and purpose of an amendment request under Article 9(12) of the CACM Regulation, the latter provision is to be interpreted to the effect that one regulatory authority can request an amendment unilaterally only where it is solely responsible for approving terms and conditions or methodologies pursuant to Article 9(8) of the CACM Regulation.

(28) Since, for the approval of the CCRs Proposal, all regulatory authorities are competent, an amendment of the CCRs Proposal could be requested, pursuant to Article 9(12) of the CACM Regulation, only by all regulatory authorities jointly, but not by one regulatory authority individually.

(29) For these reasons, and as also confirmed by the services of the European Commission's Directorate-General for Energy in the letter of 4 July 2016 (see above para. 0), E-Control's request for amendment of 13 May 2016 does not qualify as a valid amendment request pursuant to Article 9(12) of the CACM Regulation which would require TSOs to resubmit an amended CCRs Proposal. Therefore, this request does not prevent the Agency from becoming responsible to decide on the CCRs Proposal due to the regulatory authorities' failure to reach an agreement.

4. SUMMARY OF THE CCRs PROPOSAL

(30) The CCRs Proposal defines eleven CCRs: 'Nordic', 'Hansa', 'Central-west Europe (CWE)', 'Italy North', 'Greece-Italy (GRIT)', 'Central Eastern Europe (CEE)', 'South-west Europe (SWE)', 'Ireland and United Kingdom (IU)', 'Channel' 'Baltic' and 'South-east Europe (SEE)' (Articles 3 to 8 and 10 to 14).

(31) The CCRs Proposal defines the bidding zone borders within the CCRs (Articles 3 to 8 and 10 to 14). According to the CCRs Proposal (Article 1(1)), they include:

a) all existing bidding zones borders within and between Member States to which the CACM Regulation applies;

b) future bidding zone borders due to interconnections operated by legal entities certified as TSOs which are under construction and planned to be commissioned before 2018; and

c) the bidding zone border between Germany/Luxembourg and Austria.

(32) The CCRs Proposal provides a duty on the TSOs of the CWE and CEE CCRs to cooperate closely towards the merger of the two CCRs and to submit, within four months after the submission of the CCRs Proposal, a roadmap on how to merge the two CCRs (Article 9).

(33) The CCRs Proposal provides that the proposed CCRs shall apply as soon as the regulatory authorities have approved them or the Agency has decided on them (Article 15).

(34) The CCRs Proposal describes the expected impact of the proposed CCRs on the objectives of the CACM Regulation (Recitals (8) to (16)).

(35) In addition, the explanatory document to the CCR Proposal explains the legal context, offers justification and further description of the proposed CCRs, assesses the comments received during the public consultation, provides further information on the inclusion of the bidding zone border between Germany/Luxembourg and Austria, as well as on the CWE-CEE cooperation initiative, contains an overview of the future composition of CCRs (Annex 1) and of future bidding zone borders (Annex 2), presents a roadmap for future CCRs integration (Annex 3) and lists the comments to the public consultation on the draft CCRs Proposal (Annex 4).

5. ASSESSMENT OF THE CCRs PROPOSAL

5.1 Legal framework

(36) Article 15 of the CACM Regulation sets out specific requirements for the common proposal regarding the determination of CCRs.

(37) According to Article 15(1), the common proposal shall be subject to consultation in accordance with Article 12 of the CACM Regulation.

(38) According to Article 15(2), the common proposal shall define the bidding zone borders attributed to TSOs who are members of each CCR and shall meet the following requirements:

a) the regions specified in point 3.2. of Annex I to Regulation (EC) No 714/2009 of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003[6] shall be taken into consideration;

b) each bidding zone border, or two separate bidding zone borders if applicable, through which interconnection between two bidding zones exists, shall be assigned to one CCR; and

c) at least those TSOs shall be assigned to all CCRs in which they have bidding zone borders.

(39) As a general requirement, Article 9(9) of the CACM Regulation demands that every proposal for terms and conditions or methodologies includes a proposed timescale for their implementation and a description of their expected impact on the objectives of the CACM Regulation.

(40) Further, for coherence reasons and as confirmed by Article 9(9) of the CACM Regulation, the common proposal must be in line with the objectives of the CACM Regulation defined in its Article 3.

(41) Moreover, the CACM Regulation has been adopted on the basis of Article 18(3)(b) and (5) of Regulation (EC) No 714/2009.

(42) According to its Recital (33), the CACM Regulation supplements Annex I to Regulation (EC) No 714/2009, in accordance with the principles set out in Article 16 of that Regulation. Accordingly, the common proposal must be consistent also with the requirements of Regulation (EC) No 714/2009, including Article 16 and Annex I thereto.

5.2 Public consultation

(43) The draft CCRs Proposal was consulted Union-wide with stakeholders from 24 August to 24 September 2015.

[6] OJ L 211, 14.8.2009, p. 15.

(44) The explanatory document to the CCRs Proposal describes the comments received from stakeholders, assesses them and explains why comments have or have not been taken into account. The explanatory document was published together with the CCRs Proposal on 13 November 2015.

(45) Therefore, the CCRs Proposal has been subject to a public consultation in accordance with Article 12 of the CACM Regulation and complies with Article 15(1) of the CACM Regulation.

5.3 Definition of the bidding zone borders

(46) The CCRs Proposal includes the bidding zone borders covered by the respective CCRs and attributed to the TSOs.

(47) All regulatory authorities, all TSOs and the stakeholders who responded to public consultation PC_2016_E_02 agreed with all the bidding zone borders included in the CCRs Proposal, except for the bidding zone border between Germany/Luxembourg and Austria in the CEE CCR.

(48) With regard to the bidding zone border between Germany/Luxembourg and Austria in the CEE CCR, E-Control, Austrian Power Grid AG and a few stakeholders claimed that this bidding zone border should not be included in the CCRs Proposal. In essence, they argued, firstly, that a (new) bidding zone border between Germany/Luxembourg and Austria cannot be considered under Article 15 of the CACM Regulation, but can only be established after a review process pursuant to Articles 32 to 34 of the CACM Regulation, and, secondly, that such border is not necessary, contrary to the principle that TSOs shall not limit interconnection capacity to solve congestion inside their own control area, and an artificial split of an integrated market, infringing Articles 101 and 102 TFEU, as well as an artificial trade barrier, infringing Articles 34 and 35 TFEU.

(49) In this context, it is first to note that the CCRs Proposal included new, currently non-existing bidding zone borders. Besides the envisaged border between Germany/Luxembourg and Austria (hereafter 'the DE-AT border'), the CCRs Proposal included also the new borders between Belgium and Germany/Luxembourg in the CWE CCR and between Hungary and Slovenia in the CEE CCR. All regulatory authorities – including E-Control – agreed with the inclusion of these other new bidding zone borders.

(50) Secondly, the wording of the CACM Regulation does not restrict the bidding zone borders to be defined in the common proposal for CCRs to such borders which are already existing. Article 15(2) of the CACM Regulation refers to *'define the bidding zone borders attributed to TSOs who are members of each capacity calculation region'* and does not refer to 'existing' bidding zone borders or, contrary to Article 32 of the CACM Regulation, to 'existing bidding zone configurations'. The bidding zone review process under Articles 32 to 34 of the CACM Regulation has also not been set as a prerequisite for the inclusion of a

bidding zone border in the common proposal for CCRs pursuant to Article 15(2) of the CACM Regulation. The step of defining the bidding zone borders is explicitly provided for in Article 15 of the CACM Regulation and, given the deadline set by the CACM Regulation to submit a common proposal for CCRs, including bidding zone borders, this is the only possible legal procedure to 'define' bidding zone borders by three months after the entry into force of the CACM Regulation.

(51) The CACM Regulation has indeed created a dedicated process for a comprehensive review of the bidding zones in an entire region in Article 32 to 34. However, the bidding zone review process under Articles 32 to 34 of the CACM Regulation is not a prerequisite for the inclusion of a bidding zone border already in the common proposal for CCRs pursuant to Article 15(2). It is also clear that the definition of the bidding zone borders in the context of the determination of CCRs is without prejudice to the outcome of a subsequent bidding zone review and that the present Decision would have to be reviewed in case the final decision taken in the framework of the bidding zone review process resulted in a configuration of bidding zones different from the one emerging from the definition of bidding zone borders in this Decision[7].

(52) Thirdly, any proposals for capacity allocation based on the CACM Regulation should be in conformity with the essential requirements laid down in Regulation (EC) No 714/2009, as the CACM Regulation – which implements Regulation (EC) No 714/2009 – can amend only non-essential elements of Regulation (EC) No 714/2009 pursuant to Article 18(5) of that Regulation. One essential element of Regulation (EC) No 714/2009 is the requirement to implement a capacity allocation procedure in case of congestion pursuant to Article 16(1) of Regulation (EC) No 714/2009 and points 1.2., 1.4. and 3.1. of its Annex I. A derogation from this essential duty would go beyond amending a non-essential element of Regulation (EC) No 714/2009. Therefore, the CACM Regulation cannot and did not define whether, at the time of its adoption, the existing capacity allocation practices were compliant with Regulation (EC) No 714/2009; nor can and did the CACM Regulation exempt from the requirement to implement a capacity allocation procedure in case of congestion pursuant to Article 16(1) of Regulation (EC) No 714/2009 and points 1.2., 1.4. and 3.1. of its Annex I. This context confirms that new bidding zone borders may be defined also outside the bidding zone review process under Articles 32 to 34 of the CACM Regulation, to enable the implementation of a capacity allocation procedure that is compliant with Regulation (EC) No 714/2009; and that it is in the interest of a coherent application of the law to include such a new bidding zone border in the definition of bidding zone borders pursuant to Article 15(2) of the CACM Regulation.

[7] It is to be noted that in the ongoing informal bidding zone review, different scenarios will be considered. While the model-based scenarios are not defined yet, the expert based scenarios, which focus on the splitting of bidding zones in order to address congestion problems in the CEE region, do in fact include the DE-AT border as a bidding zone border.

(53) Fourthly, it is also in the interest of a coherent application of the law that a new bidding zone border is included in the definition of bidding zone borders pursuant to Article 15(2) of the CACM Regulation, where such inclusion is necessary to meet the objectives of the CACM Regulation as defined in its Article 3.

(54) In the Agency's view, with which the majority of stakeholders who participated in public consultation PC_2016_E_02 effectively concur, that the implementation of a capacity allocation procedure on the DE-AT border is indeed necessary to comply with Regulation (EC) No 714/2009 and also to meet the objectives of the CACM Regulation as defined in its Article 3, for the reasons laid out in paragraphs 0 to (61) below.

(55) With regard to the compliance with Regulation (EC) No 714/2009, it is to be noted that this Regulation and its Annex I laying down 'Guidelines on the management and allocation of available transfer capacity of interconnections between national systems' require capacity allocation in case of congestion. Pursuant to Article 16(1) of Regulation (EC) No 714/2009, network congestion problems shall be addressed with non-discriminatory market-based solutions which give efficient economic signals to the market participants and transmission system operators involved. Pursuant to points 1.2. and 1.4. of Annex I to Regulation (EC) No 714/2009, there need be no capacity allocation procedure for access to a cross-border transmission service where there is usually no congestion, while appropriate congestion-management methods and arrangements, defined and agreed upon in advance, shall be implemented immediately by the TSOs if structural congestion appears. Further, pursuant to point 3.1. of Annex I to Regulation (EC) No 714/2009, capacity allocation at an interconnection shall be coordinated and implemented using common allocation procedures by the TSOs involved in cases where commercial exchanges between two countries (TSOs) are expected significantly to affect physical flow conditions in any third country. Regulatory authorities and TSOs shall ensure that no congestion-management procedure with significant effects on physical electric power flows in other networks is devised unilaterally.

(56) As shown by the evidence presented in Annex IV to this Decision and as also already demonstrated in the Agency's Opinion No 09/2015 of 23 September 2015 (Annex V to this Decision), the cross-border exchanges between Germany/Luxembourg and Austria (hereafter 'the DE-AT cross-border exchanges') significantly affect network elements in other parts of the CWE and CEE regions, which are unambiguously defined as structurally congested (on average, about 59% of the physical flows resulting from the DE-AT cross-border exchanges are not realised through the DE-AT border, but are flowing as loop flows through other borders. See Part 1 of Annex IV to this Decision for further details). The Agency would like to emphasise that the impact of the DE-AT cross-border exchanges on the network elements in other parts of the CWE and CEE regions will not significantly change with the installation of phase-shifting transformers (PSTs)[8]. The use of a PST to

[8] The PTDF values are calculated assuming a constant phase angle of a PST. Thus, the PST has almost no effect on how the flows resulting from 100 MW of exchange are distributed across the AC network. Nevertheless, some

alter the physical flows over a congested network element should be seen as a remedial action which allows accommodating more electricity exchanges causing a physical flow over such element. In the absence of capacity allocation on the DE-AT border, the PST would facilitate exchanges between Germany and Austria whose welfare gain is unknown. On the other hand, a coordinated capacity allocation on the DE-AT border would enable the PST to facilitate electricity exchanges at regional level, bringing then a higher social welfare. For this reason, the installation of a PST should not be considered as an efficient alternative to a coordinated capacity allocation in the case of structural congestion problems. Further, assuming that all the DE-AT cross-border exchanges actually physically flow on the DE-AT border, Part 2 of Annex IV to this Decision shows that, 53% of the time, the network between Germany and the main part of Austria would not be able physically to accommodate all the requests for DE-AT cross-border exchanges.

(57) As a consequence, the DE-AT border needs to be considered as usually unable to accommodate all physical flows resulting from international trade requested by market participants, i.e. as usually and structurally congested pursuant to Article 2(2)(c) of Regulation (EC) No 714/2009 and points 1.2. and 1.4. of Annex I to the same Regulation, as well as Article 2(19) of the CACM Regulation. Due to the usual and structural congestion of the DE-AT border, the implementation of a coordinated capacity allocation procedure on the DE-AT border is required by Article 16(1) of Regulation (EC) No 714/2009 and points 1.2., 1.4. and 3.1. of Annex I to the same Regulation. According to the Agency's findings, the implementation of a coordinated capacity allocation on the DE-AT border is the only measure addressing the congestion on that border in compliance with Regulation (EC) No 714/2009; the Agency could not identify any alternative measure which could equally ensure compliance with Regulation (EC) No 714/2009 (see in particular the analysis in Annex IV, pp. 6 and 7, and Annex V, paras. 114-120).

(58) The Agency deems it important to clarify that the purpose of implementing a coordinated capacity allocation procedure on the DE-AT border is to address usual and structural congestion on that (congested) interconnection in accordance with Regulation (EC) No 714/2009, and not to solve an internal structural congestion elsewhere in the network. In the Agency's views, the existence of internal structural congestions elsewhere in the network – in Austria, Germany or any other Member State – falls outside the scope of this Decision.

(59) Therefore, a capacity allocation procedure on the DE-AT border is legally required under Regulation (EC) No 714/2009 to manage the congestion problems caused by the DE-AT cross-border exchanges in a market-based way. In fact, it is the legislator's response to a situation of inadequate interconnection capacity which, by its nature, is an obstacle to free cross-border trade in electricity and to a real competitive European electricity market. Recital (11) of the CACM Regulation makes it particularly clear that the splitting of

limited effect may be observed since a PST slightly increases the impedance of the transmission corridor (line + PST).

bidding zones may also be necessary 'to ensure efficient congestion management and overall market efficiency'. As such, the implementation of a capacity allocation procedure on the DE-AT border is only enabling competitive access to transmission lines and promoting non-discriminatory trade in electricity in the CWE and CEE regions. Therefore, it does not constitute an artificial split of an integrated market infringing Articles 101 or 102 TFEU or an artificial trade barrier infringing Articles 34 or 35 TFEU; on the contrary, it contributes to competition and market integration by creating a level-playing field for market participants on the European wholesale market.

(60) With regard to the objectives of the CACM Regulation as defined in its Article 3, it has to be pointed out that the non-inclusion of this border in the CCRs Proposal would clearly prevent meeting the objectives of the CACM Regulation, as:

- the absence of a coordinated capacity allocation method on the DE-AT border implies that the DE-AT cross-border exchanges, while having a significant impact on structural congestions in the CWE and CEE regions, do not have to compete with other cross-border exchanges in the CWE and CEE regions for the limited capacity of these congested network elements. This *de facto* gives DE-AT cross-border exchanges priority access over other cross-border exchanges in the CWE and CEE regions, which constitutes a clear violation of objectives (a) ("promoting effective competition in the generation, trading and supply of electricity"), (b) ("ensuring optimal use of the transmission infrastructure"), (e) ("ensuring fair and non-discriminatory treatment of [...] market participants"), (h) ("respecting the need for a fair and orderly market and fair and orderly price formation") and (j) ("providing non-discriminatory access to cross-zonal capacity") in Article 3 of the CACM Regulation;

- the fact that a significant and variable volume of cross-border exchanges on the DE-AT border is accepted unconditionally by the Austrian and German TSOs implies that the TSOs on other CWE and CEE borders need to reduce the cross-border capacities on those borders not only for the expected volume of physical flows resulting from the cross-border exchanges on the DE-AT border, but also due to the uncertainty of their level (i.e. actual flows may be larger than the expected ones). This situation implies that TSOs in the regions cannot rely on transparent and reliable information (objective (f) in Article 3 of the CACM Regulation) to optimise the calculation and allocation of cross-zonal capacity in the regions (objective (d)) and ensure operational security (objective (c));

- finally, the absence of a coordinated capacity allocation method on the DE-AT border and all the distortive effects it creates do not give the right investment signals and therefore do not contribute to the efficient long-term operation and development of the electricity transmission system and of the electricity sector in the Union (objective (g) in Article 3 of the CACM Regulation).

(61) Further details about the various concerns raised by stakeholders during the consultation process regarding the inclusion of the DE-AT border, as well as how the Agency evaluated them, can be found in Annexes II and III to this Decision.

(62) Therefore, the CCRs Proposal may and shall include a bidding zone border between Germany/Luxembourg and Austria in defining the bidding zone borders attributed to the TSOs who are members of each CCR in accordance with Article 15(2) of the CACM Regulation.

5.4 Consideration of the regions pursuant to point 3.2. of Annex I to Regulation (EC) No 714/2009

(63) The eleven CCRs proposed in the CCRs Proposal cover all the regions specified in point 3.2. of Annex I to Regulation (EC) No 714/2009.

(64) Therefore, the CCRs Proposal took those regions into consideration in accordance with Article 15(2)(a) of the CACM Regulation.

5.5 Proposed timescale for the implementation

(65) Article 15 of the CCRs Proposal provides that the proposed CCRs shall apply as soon as approved by all regulatory authorities or decided upon by the Agency.

(66) Therefore, the CCRs Proposal complies with the requirement of the implementation timescale in Article 9(9) of the CACM Regulation.

5.6 Expected impact on the objectives of the CACM Regulation.

(67) Recitals (8) to (16) of the CCRs Proposal describe the expected impact of the proposed CCRs on the objectives listed in Article 3 of the CACM Regulation.

(68) Therefore, the CCRs Proposal complies with the requirement of the impact description in Article 9(9) of the CACM Regulation.

(69) As regards the substance of the described impact, the Agency agrees with the description in the CCRs Proposal with the exception of the impact concerning the merger of the CWE and CEE regions (see below paras. 0 to 0).

5.7 Consistency with the requirements for coordinated capacity allocation and congestion management - the merger of the CWE CCR and CEE CCR

(70) Articles 5 and 8 of the CCRs Proposal propose a CCR for CWE and a CCR for CEE. With regard to a merger of those two CCRs, Article 9 of the CCRs Proposal provides for a close cooperation of the TSOs concerned towards such a merger, which shall take place as soon

as possible, and the submission of a clear roadmap within four months after the submission of the CCRs Proposal. The TSOs of the CWE and CEE regions signed the MoU of 3 March 2016 and indicated the TSOs' intention to develop a common flow-based capacity calculation methodology for the day-ahead timeframe within the deadline provided for in the CACM Regulation and to implement it by Q1 of 2019 at the latest.

(71) The majority of the stakeholders who responded to public consultation PC_2016_E_02 considered the commitment from the CWE and CEE TSOs to cooperate towards a merger of the CWE and CEE CCRs and the MoU of 3 March 2016 as insufficient to ensure that the CWE and CEE regions will develop and implement a common congestion management procedure.

(72) The majority of TSOs expressed concerns over a merger of the CWE and CEE CCRs in that the deadlines in the CACM Regulation are too short and hence very challenging in case of a direct merger; a direct merger would also risk to put ongoing regional projects on hold as the prime focus in the merged region would be on developing a common flow-based day-ahead capacity calculation methodology. By contrast, Austrian Power Grid AG supported a merged CWE-CEE CCR, *inter alia*, because the existing two regions consist of a highly meshed transmission grid and therefore this approach will ensure best compliance with the required common congestion management procedures and also because it is important that the CWE and CEE TSOs together continue to develop one common flow-based capacity calculation concept.

(73) In that context, it is to be noted that point 3.1. of Annex I to Regulation (EC) No 714/2009 requires that *'[i]n cases where commercial exchanges between two countries (TSOs) are expected to affect physical flow conditions in any third-country (TSO) significantly, congestion-management methods shall be coordinated between all the TSOs so affected through a common congestion-management procedure.'*

(74) The commercial exchanges within the CWE and CEE regions are significantly interdependent in the sense that exchanges in one region induce significant physical flows over network elements which are considered critical network elements for capacity calculation in the other region. This strong interdependency is particularly obvious for the DE-AT cross-border exchanges as a significant share (58.8% on average) of these exchanges (which represented respectively 28.9% (35.3%)[9] and 38.3% (42.5%) of all cross-border exchanges observed in the CWE and CEE regions in 2014 (2015)) is being realised through the neighbouring CWE and CEE networks. Therefore, pursuant to point 3.1. of Annex I to Regulation (EC) No 714/2009, this strong interdependency requires a common congestion management procedure for the CWE and the CEE regions.

[9] Assuming the DE-AT border as part of the CWE region.

(75) This common congestion management procedure for the CWE and the CEE regions must also achieve the objectives of Article 3 of the CACM Regulation, in particular the objectives of promoting effective competition in the generation, trading and supply of electricity (paragraph (a)), of ensuring optimal use of the transmission infrastructure (paragraph (b)), of ensuring operational security (paragraph (c)), of optimising the calculation and allocation of cross-zonal capacity (paragraph (d)), of ensuring and enhancing the transparency and reliability of information (paragraph (f)), and of providing non-discriminatory access to cross-zonal capacity (paragraph (j)).

(76) In the Agency's view, a common congestion management procedure for the CWE and the CEE regions can only achieve the above-mentioned objectives of Article 3 of the CACM Regulation if it is applied at the level of a single CCR resulting from the merger of the CWE CCR and the CEE CCR. The absence of a common congestion management procedure at the level of the two regions would inevitably lead to inefficiencies in the calculation and allocation of cross-zonal capacity, in the overall use of transmission infrastructure, as well as in the management of the operational security of the network, and would therefore prevent TSOs from fulfilling the aforementioned objectives.

(77) Defining separate CWE and CEE CCRs would indeed result in cross-zonal electricity exchanges within one region causing unscheduled allocated flows[10] on another region. These unscheduled allocated flows would, in turn, significantly reduce the amount of cross-zonal capacities on the other region and thus inevitably lead to a significant loss of social welfare[11]. On the contrary, a merged CWE-CEE CCR would establish a common capacity calculation procedure which would not result in any unscheduled allocated flows in the CWE region created by exchanges in the CEE region and *vice versa*.

(78) The merger of CWE and CEE CCRs is also important for the coordination of remedial actions (i.e. redispatching), as the latter may have significant effect both in terms of operational security and capacity calculation. This is particularly true when internal exchanges within a given bidding zone area create severe congestion problems in both the CWE and CEE regions[12], which, in the absence of capacity allocation procedures to manage these congestions, can only be managed with remedial actions (i.e. redispatching). It is therefore essential that these remedial actions are fully coordinated and optimised

[10] Unscheduled allocated flows are physical flows created by cross-zonal electricity exchanges on bidding zone borders where capacity calculation is not coordinated with the bidding zone borders where these flows are observed.
[11] E.g. in the case where the bidding zone border between Germany/Luxembourg and Austria were to be allocated to the CEE region as per the draft CCRs Proposal, this would result in 220 MW of unscheduled allocated flows on the DE-NL, NL-BE, BE-FR borders and 163 MW on the DE-FR border (this estimation is done by multiplying the average exchanges on the DE-AT border (3189 MW) by the average PTDF values on the DE-NL, NL-BE, BE-FR and DE-FR borders). A maximum exchange observed so far on the DE-AT border (i.e. 7688 MW) would result in 530 MW of unscheduled allocated flows on the DE-NL, NL-BE, BE-FR borders and 392 MW on the DE-FR border. As shown in the Agency's Market Monitoring Report 2015, the unscheduled flows result in a significant loss of cross-zonal capacities and social welfare.
[12] See paragraph 120 of the Agency's Opinion No 9/2015.

within a common region and involve all TSOs and networks which are potentially affected. The coordination requirement stipulated by point 3.1. of Annex I to Regulation (EC) No 714/2009 should in this case apply not only to exchanges between Member States, but also to exchanges between and within TSO areas[13].

(79) While the commitment of all TSOs from the CWE and CEE regions in the MoU of 3 March 2016 to develop a common flow-based capacity calculation methodology for the day-ahead timeframe within the deadline provided for in the CACM Regulation and to implement it by Q1 of 2019 is indeed very welcomed, it is also to be noted that this commitment is not legally binding and, more importantly, does not cover all the aspects of a common congestion management procedure. In particular, it does not cover the methodologies to calculate capacity for the intraday timeframe, to coordinate redispatching and countertrading and to share the costs of remedial actions. Accordingly, this commitment does not guarantee that the CWE and the CEE regions will develop and then implement a common congestion management procedure as required by point 3.1. of Annex I to Regulation (EC) No 714/2009 and in accordance with the objectives in Article 3 of the CACM Regulation.

(80) Therefore, the CCRs Proposal is not compliant with point 3.1. of Annex I to Regulation (EC) No 714/2009 and the objectives a), b), c), d), f) and j) in Article 3 of the CACM Regulation to the extent that it does not merge the CWE CCR and the CEE CCR into one CCR. The CWE CCR and the CEE CCR as described in Articles 5 and 8 of the CCRs Proposal need to be merged.

(81) Finally, with regard to the TSOs' concerns about the potential consequences of a direct merger, i.e. the impact on the ongoing regional projects and the risk of not meeting the ambitious deadlines set in the CACM Regulation, the Agency considers that the following aspects mitigate these concerns:

- Article 9(9) of the CACM Regulation explicitly allows TSOs to propose the appropriate implementation timescale for each methodology;
- the CACM Regulation does not prohibit the TSOs to propose the implementation of the requirements through a step-by-step approach and sub-regional projects, provided the latter are consistent with the common methodologies developed at regional level;
- the efforts and progress achieved already in the framework of the ongoing regional projects should actually foster the development of common methodologies at the level of the merged region.

[13] I.e., in cases where commercial exchanges within a TSO or between two TSOs are expected to affect physical flow conditions in any third TSO significantly, congestion-management methods shall be coordinated between all the TSOs so affected through a common congestion-management procedure.

5.8 Overall number of CCRs and its evolution over time

(82) With the exception of the CWE-CEE CCR merger, the Agency broadly agrees with the TSOs that the CCRs Proposal represents a pragmatic approach, which will need progressively to evolve towards a smaller number of CCRs.

(83) To ensure such an evolution, the Agency considers important that the relevant TSOs regularly review the definition of CCRs in the light of forthcoming developments (in particular regarding infrastructure developments, bidding zone reconfiguration, level of interdependencies between regions and with respect to the conditions set out in Article 15(3) and Article 20(5) of the CACM Regulation) and propose amendments when appropriate with a view to reducing the number of CCRs as defined in this Decision.

(84) Since the CACM Regulation aims at extending market coupling beyond the EU borders[14], the Agency stresses the importance to prepare the future extension of CCRs to third countries well in advance. The Agency therefore welcomes that the CCRs Proposal provides for a planning for the future extension of the current CCRs, including to third countries[15].

5.9 Conclusion

(85) For all these reasons, the Agency considers the CCRs Proposal in line with the requirements of the CACM Regulation and Regulation (EC) No 714/2009, provided that the CWE CCR and the CEE CCR are merged. Point 3.1. of Annex I to Regulation (EC) No 714/2009 and the objectives a), b), c), d), f) and j) in Article 3 of the CACM Regulation require that the CWE CCR and the CEE CCR as described in Articles 5 and 8 of the CCRs Proposals be merged into one CCR.

(86) Therefore the Agency approves the CCRs Proposal subject to the necessary amendments related to:

- the merger of the CWE CCR and the CEE CCR into one CCR, i.e. the inclusion of a CORE CCR combining the CWE CCR and the CEE CCR, the deletion of the commitments to work towards a merger of the CWE and CEE CCRs and the corresponding renumbering of the subsequent provisions and CCRs, and
- the Agency's decision taking, i.e. omission of the references to the regulatory authorities' approval.

To provide clarity, Annex I to this Decision sets out the CCR Proposal as approved, including the amendments.

[14] See e.g. Article 20(4) of the CACM Regulation.
[15] See page 33 et seq. of the "Explanatory document to all TSOs' proposal for Capacity Calculation Regions (CCRs)" of 29.10.2015.

(87) The definition of bidding zone borders in this Decision is without prejudice to the outcome of the bidding zone review process under Articles 32 to 34 of the CACM Regulation and shall be reviewed if such a process results in a different bidding zone configuration.

(88) The Agency invites ENTSO-E, in the framework of its biennial report on capacity calculation and allocation pursuant to Article 31 of the CACM Regulation, to develop statistical indicators to evaluate the level of interdependency between the defined CCRs and the expected efficiency gains that further mergers could bring. When doing so, the relevant TSOs are invited to focus, in particular, on the level of interdependency between the CWE-CEE region and the Channel, Italy-North, South-east, Hansa and Nordic regions.

HAS ADOPTED THIS DECISION:

Article 1

The capacity calculation regions pursuant to Article 15 of Regulation (EU) 2015/1222 shall be determined as set out in Annex I of this Decision.

Article 2

The definition of bidding zone borders in Annex I of this Decision is without prejudice to any decision which will be taken in the framework of the bidding zone review process under Articles 32 to 34 of Regulation (EU) 2015/1222. If such decision results in a configuration of bidding zones different from the one emerging from the definition of bidding zone borders in this Decision, this Decision shall be reviewed.

Article 3

This Decision is addressed to 50Hertz Transmission GmbH, Amprion GmbH, Austrian Power Grid AG, AS Augstsprieguma tīkls, BritNed Development Limited, ČEPS, a.s., Creos Luxembourg S.A., Croatian Transmission System Operator Ltd. (HOPS d.o.o.), East-West Interconnector Company, EirGrid plc, Elering AS, ELES d.o.o., Elia System Operator SA, Energinet.dk, Electroenergien Sistemen Operator EAD, Fingrid Oyj, Independent Power Transmission Operator S.A., Litgrid AB, MAVIR Magyar Villamosenergia-ipari Átviteli Rendszerirányító Zártkörűen Működő Részvénytársaság, Moyle Interconnector Limited, National Grid Electricity Transmission plc, National Grid Interconnectors Limited, Polskie Sieci Elektroenergetyczne S.A., Red Eléctrica de España S.A.U., Rede Eléctrica Nacional S.A., Réseau de Transport d'Electricité, Slovenská elektrizačná prenosová sústava a.s., System Operator for Northern Ireland Ltd, Affärsverket Svenska kraftnät, TenneT TSO BV, TenneT TSO GmbH, Terna – Rete Elettrica Nazionale SpA, Compania Nationala de Transport al Energiei Electrice "TRANSELECTRICA" S.A., TransnetBW GmbH, Vorarlberger Übertragungsnetz GmbH.

ACER
Agency for the Cooperation of Energy Regulators

Done at Ljubljana on 17 November 2016.

For the Agency:

Alberto Pototschnig
Director

ACER
Agency for the Cooperation of Energy Regulators

Annexes:

Annex I - Definition of the Capacity Calculation Regions (CCRs) 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

Annex Ia – Track change version of Annex I compared to the CCRs Proposal (for information only)

Annex II - Evaluation of responses to the public consultation on the CCRs Proposal

Annex III - Evaluation of responses to the NRA and TSO consultation on the preliminary draft Agency Decision on the CCRs Proposal

Annex IV - Technical Justification document for the inclusion of the border between Germany/Luxembourg and Austria in the determination of CCRs

Annex V - Agency's Opinion No 09/2015 of 23 September 2015 on the compliance of national regulatory authorities' decisions approving the methods of allocation of cross-border transmission capacity in the Central-East Region with Regulation (EC) No 714/2009 and the Guidelines on the management and allocation of available transfer capacity of interconnections between National Systems contained in Annex I thereto

ACER
Agency for the Cooperation of Energy Regulators

Annex I

Definition of the Capacity Calculation Regions (CCRs) 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 (CACM Regulation)

17 November 2016

TITLE 1
General Provisions

Article 1
Subject matter and scope

1. The CCRs cover the following:
   a) all existing bidding zones borders within and between Member States, to which the CACM Regulation applies;
   b) future bidding zone borders due to interconnections operated by legal entities certified as TSOs which are under construction at the time of the approval of this proposal and planned to be commissioned before 2018; and
   c) the Germany/Luxembourg – Austria bidding zone border (DE/LU - AT) in accordance with Article 5 of this document.

2. Based on the CACM Regulation, the following terms and conditions or methodologies shall be developed in each CCR and submitted for approval to the competent regulatory authorities:
   a) the common capacity calculation methodology in accordance with Article 20 of the CACM Regulation;
   b) the methodology for coordinated redispatching and countertrading in accordance with Article 35(1) of the CACM Regulation;
   c) the fallback procedures in accordance with Article 44 of the CACM Regulation; and
   d) the redispatching or countertrading cost sharing methodology in accordance with Article 74(1) of the CACM Regulation.

3. Any changes in the bidding zone border configuration in the Member States shall be taken into account for amendment proposals concerning this document in accordance with Article 9(13) of the CACM Regulation.

Article 2
Definitions and interpretation

1. Terms used in this document shall have the meaning of the definitions included in Article 2 of the CACM Regulation.

2. In this document, unless the context requires otherwise:
   a) the singular indicates the plural and vice versa;
   b) the table of contents, headings and examples are inserted for convenience only and do not affect the interpretation of this document;
   c) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force; and
   d) in case of inconsistency between any of the provisions in Title 2 and the maps included in the Appendix to this document the provisions in Title 2 shall prevail; and
   e) any reference to the bidding zones of Germany/Luxembourg (DE/LU) or Austria (AT) for the definition of the bidding zone borders in this document shall also be read as the bidding zone of Germany/Austria/Luxembourg (DE/AT/LU) for the purposes of capacity allocation on the affected bidding zone borders until the requirements described in Article 5(3) of this document are fulfilled.

3. This document shall be binding upon and shall ensure to the benefit of the TSOs as referred to herein and their permitted successors and assigns and irrespective of any change in the TSOs' names.

TITLE 2
Capacity Calculation Regions

Article 3
Capacity Calculation Region 1: Nordic

The CCR Nordic shall include the bidding zone borders listed below and shown on the map No 1 included in the Appendix to this document as attributed to the referred TSOs:

a) Denmark 1 - Sweden 3 (DK1-SE3), Energinet.dk and Svenska kraftnät;
b) Denmark 2 - Sweden 4 (DK2-SE4), Energinet.dk and Svenska kraftnät;
c) Denmark 1 - Denmark 2 (DK1-DK2), Energinet.dk;
d) Sweden 4 - Sweden 3 (SE4-SE3), Svenska kraftnät;
e) Sweden 3 - Sweden 2 (SE3-SE2), Svenska kraftnät;
f) Sweden 2 - Sweden 1 (SE2-SE1), Svenska kraftnät;
g) Sweden 3 - Finland (SE3-FI), Svenska kraftnät and Fingrid Oyj; and
h) Sweden 1 - Finland (SE1-FI), Svenska kraftnät and Fingrid Oyj.

Article 4
Capacity Calculation Region 2: Hansa

The CCR Hansa shall include the bidding zone borders listed below and shown on the map No 2 included in the Appendix to this document as attributed to the referred TSOs:

a) Denmark 1 - Germany/Luxembourg (DK1-DE/LU), Energinet.dk and TenneT TSO GmbH;
b) Denmark 2 - Germany/Luxembourg (DK2-DE/LU), Energinet.dk and 50Hertz Transmission GmbH; and
c) Sweden 4 - Poland (SE4 – PL), Svenska Kraftnät and PSE S.A..

Article 5
Capacity Calculation Region 3: Core

1. The CCR Core shall include the bidding zone borders listed below and shown on the map No 3 included in the Appendix to this document as attributed to the referred TSOs:
   a) France - Belgium (FR - BE), RTE – Réseau de transport d'électricité and Elia System Operator NV/SA;
   b) Belgium - Netherlands (BE - NL), Elia System Operator NV/SA and TenneT TSO B.V.;
   c) France - Germany/Luxembourg (FR - DE/LU), RTE– Réseau de transport d'électricité; Amprion GmbH and TransnetBW GmbH;
   d) Netherlands - Germany/Luxembourg (NL - DE/LU), TenneT TSO B.V. and TenneT TSO GmbH and Amprion GmbH; and
   e) Belgium - Germany/Luxembourg (BE-DE/LU), Elia System Operator NV/SA and Creos Luxembourg S.A..
   f) Germany/Luxembourg - Poland (DE/LU - PL), 50Hertz Transmission GmbH and PSE S.A.;
   g) Germany/Luxembourg - Czech Republic (DE/LU - CZ), TenneT TSO GmbH, 50Hertz Transmission GmbH and ČEPS, a.s.;
   h) Austria - Czech Republic (AT - CZ), Austrian Power Grid AG and ČEPS, a.s.;

i) Austria - Hungary (AT - HU), Austrian Power Grid AG and MAVIR Hungarian Independent Transmission Operator Company Ltd.;
j) Austria - Slovenia (AT - SI), Austrian Power Grid AG and ELES, d.o.o.;
k) Czech Republic - Slovakia (CZ - SK), ČEPS, a.s. and Slovenská elektrizačná prenosová sústava, a.s.;
l) Czech Republic - Poland (CZ - PL), ČEPS, a.s. and PSE S.A.;
m) Hungary - Slovakia (HU - SK), MAVIR Hungarian Independent Transmission Operator Company Ltd. and Slovenská elektrizačná prenosová sústava, a.s.;
n) Poland - Slovakia (PL - SK), PSE S.A. and Slovenská elektrizačná prenosová sústava, a.s.;
o) Croatia - Slovenia (HR - SI), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), ELES, d.o.o.;
p) Croatia - Hungary (HR - HU), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), MAVIR Hungarian Independent Transmission Operator Company Ltd.;
q) Romania - Hungary (RO - HU), Compania Națională de Transport al Energiei Electrice "Transelectrica" S.A., MAVIR Hungarian Independent Transmission Operator Company Ltd.;
r) Hungary - Slovenia (HU - SI), MAVIR Hungarian Independent Transmission Operator Company Ltd., ELES, d.o.o.; and
s) Germany/Luxembourg - Austria (DE/LU - AT), Austrian Power Grid AG, TransnetBW GmbH, TenneT TSO GmbH and Amprion GmbH.

2. The assignment of the bidding zone border BE-DE/LU to the CCR Core shall be effective from the date of operation of the interconnection on this bidding zone border.

3. For the avoidance of doubt, capacity allocation on the DE/LU - AT border shall be introduced in line with an implementation calendar to be agreed upon by the relevant regulatory authorities and TSOs and at the latest when implementation of flow-based capacity calculation takes places in the CCR Core in accordance with the CACM Regulation.

4. The assignment of the bidding zone border HU-SI to the CCR Core shall be effective from the date of operation of the interconnection on this bidding zone border.

Article 6
Capacity Calculation Region 4: Italy North

The CCR Italy North shall include the bidding zone borders listed below and shown on the map No 4 included in the Appendix to this document as attributed to the referred TSOs:
a) Italy NORD - France (NORD - FR), TERNA Rete Elettrica Nazionale S.p.A. and RTE– Réseau de transport d'électricité;
b) Italy NORD - Austria (NORD - AT), TERNA Rete Elettrica Nazionale S.p.A. and Austrian Power Grid AG; and
c) Italy NORD - Slovenia (NORD - SI), TERNA Rete Elettrica Nazionale S.p.A. and ELES d.o.o.

Article 7
Capacity Calculation Region 5: Greece-Italy (GRIT)

The CCR GRIT shall include the bidding zone borders listed below and shown on the map No 5 included in the Appendix to this document as attributed to the referred TSOs:
a) Italy BRNN - Greece (BRNN - GR), TERNA Rete Elettrica Nazionale S.p.A. and Independent Power Transmission Operator S.A.;

b) Italy NORD - Italy CNOR (NORD - CNOR), TERNA Rete Elettrica Nazionale S.p.A.;
c) Italy CNOR - Italy CSUD (CNOR - CSUD), TERNA Rete Elettrica Nazionale S.p.A.;
d) Italy CNOR - Italy SARD (CNOR - SARD), TERNA Rete Elettrica Nazionale S.p.A.;
e) Italy SARD - Italy CSUD (SARD - CSUD), TERNA Rete Elettrica Nazionale S.p.A.;
f) Italy CSUD - Italy SUD (CSUD - SUD), TERNA Rete Elettrica Nazionale S.p.A.;
g) Italy SUD - Italy BRNN (SUD - BRNN), TERNA Rete Elettrica Nazionale S.p.A.;
h) Italy SUD - Italy FOGN (SUD - FOGN), TERNA Rete Elettrica Nazionale S.p.A.;
i) Italy SUD - Italy ROSN (SUD - ROSN), TERNA Rete Elettrica Nazionale S.p.A.;
j) Italy ROSN - Italy SICI (ROSN - SICI), TERNA Rete Elettrica Nazionale S.p.A; and
k) Italy SICI - Italy PRGP (SICI - PRGP), TERNA Rete Elettrica Nazionale S.p.A.

Article 8
Capacity Calculation Region 6: South-west Europe (SWE)

The CCR SWE shall include the bidding zone borders listed below and shown on the map No 6 included in the Appendix to this document as attributed to the referred TSOs:

a) France - Spain (FR - ES), RTE - Réseau de transport d'électricité and REE - Red Eléctrica de España, S.A.U.; and
b) Spain - Portugal (ES - PT), REE - Red Eléctrica de España, S.A.U. and REN - Rede Eléctrica Nacional, S.A..

Article 9
Capacity Calculation Region 7: Ireland and United Kingdom (IU)

The CCR IU shall include the bidding zone border between Great Britain and Single Energy Market in Ireland and Northern Ireland attributed to the EirGrid, Moyle Interconnector (Moyle), National Grid Electricity Transmission plc (NGET) and SONI. The IU CCR is shown on the map No 7 included in the Appendix to this document.

Article 10
Capacity Calculation Region 8: Channel

The CCR Channel shall include the bidding zone borders listed below and shown on the map No 8 included in the Appendix to this document as attributed to the referred TSOs:

a) France - Great Britain (FR - GB), RTE - Réseau de transport d'électricité, National Grid Electricity Transmission plc (NGET) and National Grid Interconnectors Limited (NGIC); and
b) Netherlands - Great Britain (NL - GB), BritNed Development Limited (BritNed) and TenneT TSO B.V..

Article 11
Capacity Calculation Region 9: Baltic

The CCR Baltic shall include the bidding zone borders listed below and shown on the map No 9 included in the Appendix to this document as attributed to the referred TSOs:

a) Estonia - Latvia (EE - LV), Elering AS and Augstsprieguma tīkls;
b) Latvia - Lithuania (LV - LT), Augstsprieguma tīkls and Litgrid AB; and
c) Estonia - Finland (EE - FI), Elering AS and Fingrid Oyj;
d) Lithuania – Sweden 4 (LT-SE4), Litgrid AB and Svenska kraftnät; and

e) Lithuania- Poland (LT-PL), Litgrid AB and PSE S.A..

Article 12
Capacity Calculation Region 10: South-east Europe (SEE)

The CCR SEE shall include the bidding zone borders listed below and shown on the map No 10 included in the Appendix to this document as attributed to the referred TSOs:

a) Greece - Bulgaria (GR - BG), Independent Power Transmission Operator S.A. and Elektroenergien Sistemen Operator (ESO) EAD; and
b) Bulgaria - Romania (BG - RO), Elektroenergien Sistemen Operator (ESO) EAD and Compania Naţională de Transport al Energiei Electrice "Transelectrica" S.A..

TITLE 3
Final provisions

Article 13
Implementation date of CCRs

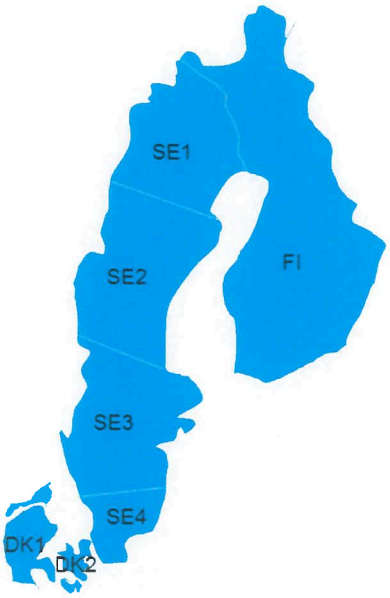
The TSOs shall apply the CCRs as described in Title 2 as soon as the decision has been taken by the Agency in accordance with Article 9(11) and 9(12) of the CACM Regulation.

Article 14
Language

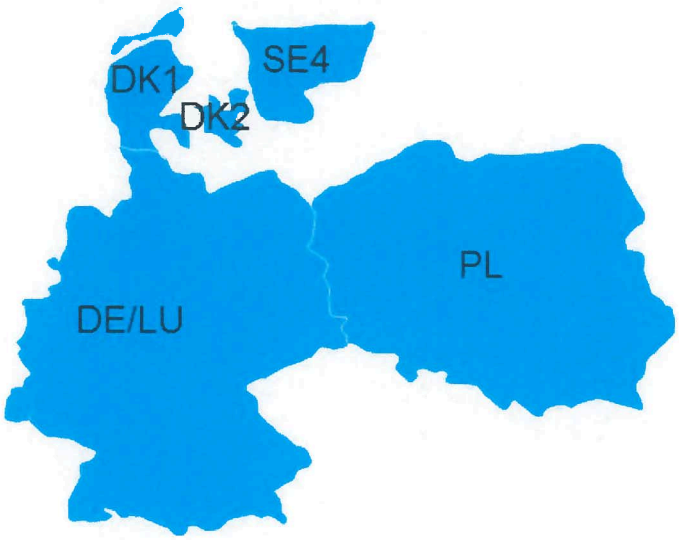
The official language for this document shall be English. For the avoidance of doubt, where TSOs need to translate this document into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 9(14) of the CACM Regulation and any version in another language, the interpretation of the English version published by TSOs shall prevail.

Appendix: Maps of the proposed CCRs

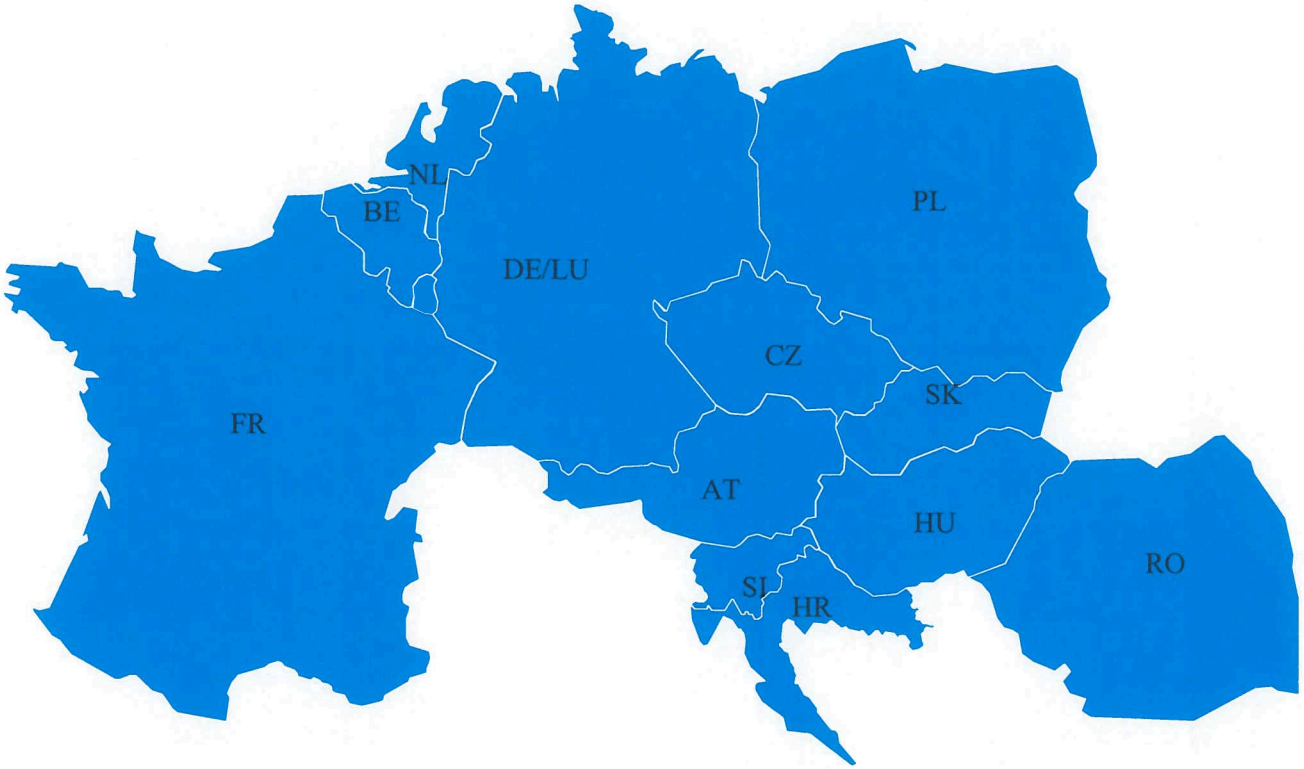
1. Capacity Calculation Region 1: Nordic



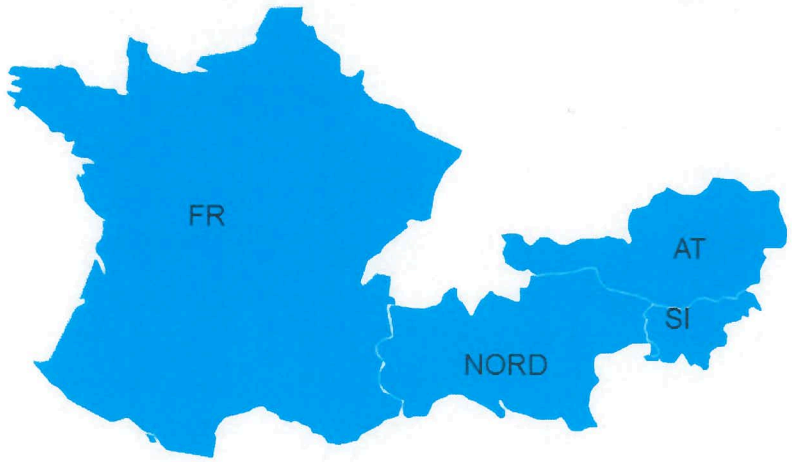
2. Capacity Calculation Region 2: Hansa (PL-DE/LU, DK2-SE4 and DK1-DK2 bidding zone borders are not part of this CCR)



3. Capacity Calculation Region 3: Core

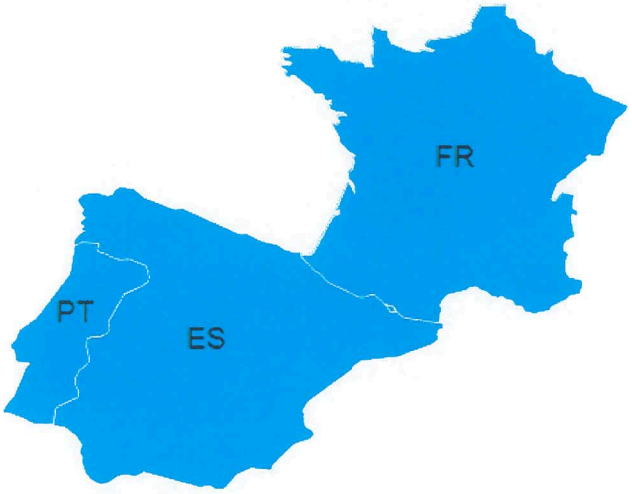


4. Capacity Calculation Region 4: Italy North (AT-SI bidding zone border is not part of this CCR)



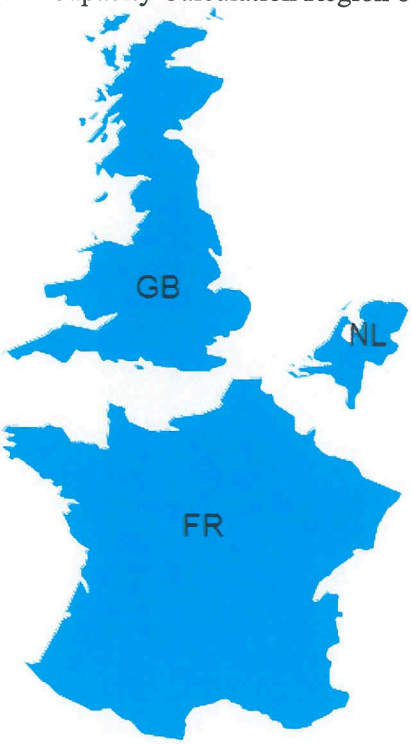
5. Capacity Calculation Region 5: Greece-Italy (GRIT)

6. Capacity Calculation Region 6: South-west Europe (SWE)

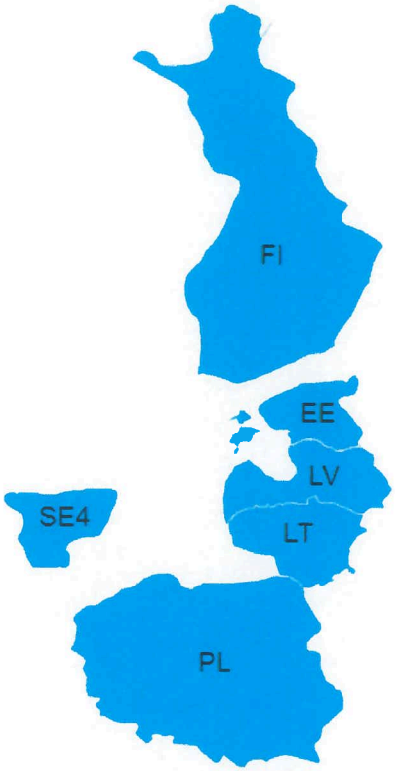


7. Capacity Calculation Region 7: Ireland and United Kingdom (IU)

8. Capacity Calculation Region 8: Channel



9. Capacity Calculation Region 9: Baltic (SE4-PL bidding zone border is not part of this CCR)



10. Capacity Calculation Region 10: South-east Europe (SEE)

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Annex Ia

(for information only)

~~All TSOs' proposal for Capacity Calculation Regions (CCRs) 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~~ Definition of the Capacity Calculation Regions (CCRs) 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 (CACM Regulation)

~~29 October 2015~~

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All TSOs, taking into account the following,

Whereas

(1) This document is a common proposal developed by all Transmission System Operators (hereafter referred to as "TSOs") regarding the determination of capacity calculation regions (hereafter referred to as "CCR(s)") (hereafter referred to as "CCRs Proposal"). The CCRs Proposal takes into consideration the regions specified in point 3(2) of Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as "Regulation (EC) No 714/2009") including all existing bidding zone borders from EU member states that joined the EU after the entry into force of Annex I of Regulation (EC) No 714/2009 and that were not yet listed in this Annex I.

(2) This CCRs Proposal takes into account the general principles and goals set in the Commission Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management (hereafter referred to as the "CACM Regulation") as well as Regulation (EC) No 714/2009. The goal of the CACM Regulation is the coordination and harmonisation of capacity calculation and allocation in the day-ahead and intraday cross-border markets, and it sets requirements for the TSOs to co-operate on the level of CCRs, on a pan-European level and across bidding zone borders.

(3) Capacity calculation for the day-ahead and intraday market timeframes should be coordinated at least at the regional level to ensure that capacity calculation is reliable and that optimal capacity is made available to the market. For this purpose, regions where such coordination is needed should be defined by all TSOs. In accordance with Article 2 (Definitions) of the CACM Regulation these regions are defined as "capacity calculation regions", meaning "the geographic area in which coordinated capacity calculation is applied". Therefore, a CCR needs to consist of a set of bidding zone borders for which the capacity calculation shall be coordinated by TSOs in accordance with the CACM Regulation.

(4) This CCRs Proposal includes a detailed description of the CCRs, covering the existing bidding zone borders between and within European Union (EU) Members States, to which the CACM Regulation applies, and some new ones expected to be established by the end of 2018 and to be operated by TSOs certified at the moment of submission of this proposal to all regulatory authorities. The inclusion of future bidding zone borders allows for an early approval of the assignment of these bidding zones borders in the relevant CCR and as such for a smooth implementation of the CACM Regulation.

(5) The CCRs Proposal also includes the Germany/Luxembourg – Austria (DE/LU – AT) bidding zone border under the following grounds:

a. the DE/LU – AT bidding zone border is included into the CEE CCR after the public consultation period, following the Opinion of the Agency for the Cooperation of Energy Regulators No 09/2015 dated 23 September 2015 (hereinafter referred to as "the Agency Opinion No 09/2015"). In this opinion the Agency stated that the *"implementation of a capacity allocation procedure on the DE-AT border is required pursuant to Article 16(1) of Regulation (EC) No 714/2009 and points 1.2, 1.4 and 3.1 of Annex I to this Regulation.*

Moreover, such implementation shall be coordinated at least at the level of the CEE region. Thus, the DE-AT border should form a constituent part of the CEE region for the application of coordinated capacity calculation, optimisation of allocation and secure operation of the network, as required by point 3.5 of Annex I to Regulation (EC) No 714/2009." The Agency asks further the TSOs and the regulatory authorities of the CEE region to "*commit, within 4 months of the date in which this Opinion is adopted and published, to the adoption of a coordinated capacity allocation procedure on the DE-AT border, with a realistic but ambitious implementation calendar with concrete steps*" for the capacity allocation on this border.

b. All TSOs understand that the Agency Opinion No 09/2015 explicitly requires the *implementation* of a capacity allocation procedure on the DE – AT border which according to the same opinion shall form a constituent part of the CEE region. All TSOs understand that this opinion has been approved by regulatory authorities in accordance with the applicable governance rules of the Agency's Board of Regulators. The Agency Opinion No 09/2015 therefore reflects a common position of the regulatory authorities. With this CCRs Proposal all TSOs take over and implement this common decision of regulatory authorities, also in anticipation of an amendment requirement or an Agency's decision according to Article 9 (12) of the CACM Regulation which would otherwise be imposed. With the approval of this CCRs Proposal according to Article 9 (6) (b) of the CACM Regulation the approving regulatory authorities are able to inherently reconfirm the decision included in the Agency Opinion No 09/2015 requesting an assignment of the bidding zone border Germany Austria (DE-AT) to the CEE region and the understanding of TSOs outlined in this paragraph.

(6) This CCRs Proposal, with the proposed CCRs configuration, represents a dynamic and pragmatic pan-European approach with a short- and mid-term view of the geographical scope of CCRs that supports coordination across the bidding zone borders where there is the highest observed interdependence. The need for larger CCRs will be assessed in due time and as early as possible by the relevant TSOs after some experience on coordination within a CCR and between CCRs in accordance with the CACM Regulation has been gained.

(7) According to Article 9 (9) of the CACM Regulation, the expected impact of the proposed CCRs on the objectives of the CACM Regulation has to be described. The impact is presented below (points 8 to 16 of the Whereas) taking into account that the CACM Regulation places the definition of these CCRs as well as the methodologies to be applied in these regions within a framework of continuous harmonisation, applying the most efficient capacity calculation methodology within each CCR.

(8) The proposed CCRs contribute to and do not in any way hamper the achievement of the objectives of Article 3 of CACM Regulation. In particular, the proposed CCRs serve the objective ensuring optimal use of transmission infrastructure by linking bidding zone borders, where coordination needs are high in capacity calculation. Within the CCR, the interdependencies between the cross-zonal capacities can be modelled most accurately and efficiently, and the optimal level of cross-zonal capacity can be given to the market. The number of CCRs across Europe also affects the optimal use of transmission infrastructure and the calculation of cross-zonal capacity. Large number of CCRs decrease the coordination

possibilities across bidding zone borders, implying less optimal use of transmission infrastructure.

(9) However, some smaller CCRs are proposed in order to ensure operational efficiency and better consideration of regional features, such as generation mix, consumption behavior and grid topology, in capacity calculation. This possibility implies an optimal level of cross-zonal capacity for the market without endangering the operational security in case the need for coordination across bidding zone borders is low. On the other hand, where coordination needs across bidding zone borders are high, as in highly meshed transmission grids, a geographically larger CCR (and a smaller number of CCRs) is beneficial to ensure the optimal use of transmission infrastructure. Thus, the optimal number of CCRs is a mixture of CCRs, according to which in continental Europe a few, geographically large CCRs exist, and in other parts of Europe, smaller CCRs are proposed. This CCR configuration contributes to the optimal use of transmission infrastructure in accordance with Article 3(b) of the CACM Regulation.

(10) The proposed CCRs configuration also affects positively operational security in accordance with Article 3(c) of the CACM Regulation. If interdependency between bidding zone borders is not correctly taken into account in capacity calculation, cross-zonal capacity given to the market might be too high, enabling too high power flows on transmission lines and thus, endangering the operational security of the transmission system. Usually in these cases, less cross-zonal capacity would be given to the market to ensure operational security at the expense of optimal use of transmission infrastructure. The proposed CCRs configuration allows for a proper coordination between bidding zone borders and for modelling of regional features based on a common grid model, which give a high level of cross-zonal capacity to the market without endangering operational security.

(11) The CCRs serve the objective of optimising the calculation and allocation of cross-zonal capacity in accordance with Article 3(d) of the CACM Regulation as CCRs lay down coordination within a CCR and between CCRs. This is the first time that CCRs will be commonly and comprehensively defined in Europe, laying the ground for the development of regional common capacity calculation methodologies and establishment of Coordinated Capacity Calculator for each CCR. Given, for example, the need for manual operations during the calculation process, the proposed number and size of CCRs are the most feasible approach towards the objective of optimising capacity calculation. Coordination and compatibility across the regions is also explicitly required by the CACM Regulation in Articles 21 (1) (b) (vii) and 29 (9). By respective standardization and coordination, TSOs will ensure both compatible capacity calculation methodologies across CCRs and a coordinated application of the methodologies across the regions.

(12) One of the objectives of the CACM Regulation is to contribute to the efficient long-term operation and development of the electricity transmission system (Article 3(g) of the CACM Regulation). The coordinated capacity calculation within a CCR will reveal constraining elements in the transmission network that contribute to the long-term operation and development of the electricity transmission system and electricity sector in the Union.

(13) When preparing the CCRs Proposal, TSOs took careful consideration of understanding the long-term target of the CACM Regulation with regard to capacity calculation and allocation. As a long-term target, the CACM Regulation aims at harmonisation of the capacity calculation

methodology within the CCRs and merging of CCRs when efficiency reasons justify doing so. This CCRs Proposal is an important step on the roadmap towards this long-term target. It is crucial that this roadmap is efficient and does not jeopardise progress towards the long-term target. The CCRs Proposal builds, thus, on current practice and existing projects, and represents a progressively pragmatic harmonisation of capacity calculation.

(14) The CCRs Proposal contributes somewhat to the objective of promoting effective competition in generation, trading and supply of electricity (Article 3(a)) of the CACM Regulation) because it takes into account market specificities on bidding zone borders by allowing optimally configured CCRs to be established.

(15) Regarding the objective of transparency and reliability of information (Article 3(i) of the CACM Regulation), the CCRs, being proposed by all TSOs and approved by all regulatory authorities, will be the basis for further work towards market integration in the most transparent way. The proposed CCR configuration shows where coordination between bidding zone borders in capacity calculation is necessary and all TSOs of each CCR will develop common methodologies as defined in CACM Regulation. These methodologies will be consulted upon, approved by regulatory authorities when applicable and published by TSOs, thus, increasing transparency and reliability of information.

(16) In conclusion, the limited number of CCRs contributes to the general objectives of CACM Regulation to the benefit of all market participants and electricity end consumers.

SUBMIT THE FOLLOWING CCRs PROPOSAL TO ALL REGULATORY AUTHORITIES:

TITLE 1
General Provisions

Article 1
Subject matter and scope

1. The CCRs as determined in this CCRs Proposal shall be considered as the common proposal of all TSOs in accordance with Article 15 of CACM Regulation and following the Agency Opinion No 09/2015 and they shall cover the following:

1. The CCRs cover the following:
   a) all existing bidding zones borders within and between Member States, to which the CACM Regulation applies;
   b) future bidding zone borders due to interconnections operated by legal entities certified as TSOs which are under construction at the time of the approval of this proposal and planned to be commissioned before 2018; and
   c) the Germany/Luxembourg – Austria bidding zone border (DE/LU - AT) following the Agency Opinion No 09/2015 dated 23 September 2015 in accordance with Article 85 of this CCRs Proposaldocument.
2. Based on the CACM Regulation, the following terms and conditions or methodologies shall be developed in each CCR and submitted for approval to the competent regulatory authorities:
   a) the common capacity calculation methodology in accordance with Article 20 of the CACM Regulation;

b) the methodology for coordinated redispatching and countertrading in accordance with Article 35(1) of the CACM Regulation;
c) the fallback procedures in accordance with Article 44 of the CACM Regulation; and
d) the redispatching or countertrading cost sharing methodology in accordance with Article 74(1) of the CACM Regulation.

3. Any changes in the bidding zone border configuration in the Member States shall be taken into account for amendment proposals ~~of this CCRs Proposal~~concerning this document in accordance with Article 9(13) of the CACM Regulation.

Article 2
Definitions and interpretation

1. ~~For the purposes of the CCRs Proposal, terms~~Terms used in this document shall have the meaning of the definitions included in Article 2 of the CACM Regulation.

2. In this ~~CCRs Proposal~~document, unless the context requires otherwise:
   a) the singular indicates the plural and vice versa;
   b) the table of contents, headings and examples are inserted for convenience only and do not affect the interpretation of this ~~CCRs Proposal;~~document;
   c) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force; and
   d) in case of inconsistency between any of the provisions in Title 2 and the maps included in the Appendix to this ~~CCRs Proposal ("Maps of the Proposed CCRs")~~document the provisions in Title 2 shall prevail; and
   e) any reference to the bidding zones of Germany/Luxembourg (DE/LU) or Austria (AT) for the definition of the bidding zone borders in this ~~CCRs Proposal~~document shall also be read as the bidding zone of Germany/Austria/Luxembourg (DE/AT/LU) for the purposes of capacity allocation on the affected bidding zone borders until the requirements described in Article ~~8(3~~5(3) of this ~~CCRs Proposal~~document are fulfilled.
3. This ~~CCRs Proposal~~document shall be binding upon and shall ensure to the benefit of the TSOs as referred to herein and their permitted successors and assigns and irrespective of any change in the TSOs' names.

TITLE 2
Capacity Calculation Regions

Article 3
Capacity Calculation Region 1: Nordic

The CCR Nordic shall include the bidding zone borders listed below and shown on the map No 1 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:
a) Denmark 1 - Sweden 3 (DK1-SE3), Energinet.dk and Svenska kraftnät;
b) Denmark 2 - Sweden 4 (DK2-SE4), Energinet.dk and Svenska kraftnät;
c) Denmark 1 - Denmark 2 (DK1-DK2), Energinet.dk;
d) Sweden 4 - Sweden 3 (SE4-SE3), Svenska kraftnät;
e) Sweden 3 - Sweden 2 (SE3-SE2), Svenska kraftnät;
f) Sweden 2 - Sweden 1 (SE2-SE1), Svenska kraftnät;
g) Sweden 3 - Finland (SE3-FI), Svenska kraftnät and Fingrid Oyj; and
h) Sweden 1 - Finland (SE1-FI), Svenska kraftnät and Fingrid Oyj.

Article 4
Capacity Calculation Region 2: Hansa

The CCR Hansa shall include the bidding zone borders listed below and shown on the map No 2 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:

a) Denmark 1 - Germany/Luxembourg (DK1-DE/LU), Energinet.dk and TenneT TSO GmbH;
b) Denmark 2 - Germany/Luxembourg (DK2-DE/LU), Energinet.dk and 50Hertz Transmission GmbH; and
c) Sweden 4 - Poland (SE4 – PL), Svenska Kraftnät and PSE S.A..

Article 5
Capacity Calculation Region 3: ~~Central west Europe (CWE)~~Core

1. The CCR ~~CWE~~Core shall include the bidding zone borders listed below and shown on the map No 3 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:
   a) France - Belgium (FR - BE), RTE – Réseau de transport d'électricité and Elia System Operator NV/SA;
   b) Belgium - Netherlands (BE - NL), Elia System Operator NV/SA and TenneT TSO B.V.;
   c) France - Germany/Luxembourg (FR - DE/LU), RTE– Réseau de transport d'électricité; Amprion GmbH and TransnetBW GmbH;
   d) Netherlands - Germany/Luxembourg (NL - DE/LU), TenneT TSO B.V. and TenneT TSO GmbH and Amprion GmbH; and
   e) Belgium - Germany/Luxembourg (BE-DE/LU), Elia System Operator NV/SA and Creos Luxembourg S.A..
   ~~e)~~f) Germany/Luxembourg - Poland (DE/LU - PL), 50Hertz Transmission GmbH and PSE S.A.;
   ~~f)~~g) Germany/Luxembourg - Czech Republic (DE/LU - CZ), TenneT TSO GmbH, 50Hertz Transmission GmbH and ČEPS, a.s.;
   ~~g)~~h) Austria - Czech Republic (AT - CZ), Austrian Power Grid AG and ČEPS, a.s.;
   ~~h)~~i) Austria - Hungary (AT - HU), Austrian Power Grid AG and MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   ~~i)~~j) Austria - Slovenia (AT - SI), Austrian Power Grid AG and ELES, d.o.o.;
   ~~j)~~k) Czech Republic - Slovakia (CZ - SK), ČEPS, a.s. and Slovenská elektrizačná prenosová sústava, a.s.;
   ~~k)~~l) Czech Republic - Poland (CZ - PL), ČEPS, a.s. and PSE S.A.;
   ~~l)~~m) Hungary - Slovakia (HU - SK), MAVIR Hungarian Independent Transmission Operator Company Ltd. and Slovenská elektrizačná prenosová sústava, a.s.;
   ~~m)~~n) Poland - Slovakia (PL - SK), PSE S.A. and Slovenská elektrizačná prenosová sústava, a.s.;
   ~~n)~~o) Croatia - Slovenia (HR - SI), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), ELES, d.o.o.;
   ~~o)~~p) Croatia - Hungary (HR - HU), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   ~~p)~~q) Romania - Hungary (RO - HU), Compania Națională de Transport al Energiei Electrice "Transelectrica" S.A., MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   ~~q)~~r) Hungary - Slovenia (HU - SI), MAVIR Hungarian Independent Transmission Operator Company Ltd., ELES, d.o.o.; and

r) Germany/Luxembourg - Austria (DE/LU - AT), Austrian Power Grid AG, TransnetBW GmbH, TenneT TSO GmbH and Amprion GmbH.

s)

2. The assignment of the bidding zone border BE-DE/LU to the CCR CWE in accordance with paragraph 1 item e) of this Article shall be effective from the date of operation of the interconnection on this bidding zone border, which is under construction at the date of submission of this CCRs Proposal.

3. For coordination purposes and due to existing interdependencies, 50Hertz Transmission GmbH, Creos Luxembourg S.A. and Austrian Power Grid AG shall be also attributed to the CCR CWE from the approval of this CCRs Proposal.

2. The assignment of the bidding zone border BE-DE/LU to the CCR Core shall be effective from the date of operation of the interconnection on this bidding zone border.

3. For the avoidance of doubt, capacity allocation on the DE/LU - AT border shall be introduced in line with an implementation calendar to be agreed upon by the relevant regulatory authorities and TSOs and at the latest when implementation of flow-based capacity calculation takes places in the CCR Core in accordance with the CACM Regulation.

4. The assignment of the bidding zone border HU-SI to the CCR Core shall be effective from the date of operation of the interconnection on this bidding zone border.

Article 6
Capacity Calculation Region 4: Italy North

The CCR Italy North shall include the bidding zone borders listed below and shown on the map No 4 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:

a) Italy NORD - France (NORD - FR), TERNA Rete Elettrica Nazionale S.p.A. and RTE– Réseau de transport d'électricité;
b) Italy NORD - Austria (NORD - AT), TERNA Rete Elettrica Nazionale S.p.A. and Austrian Power Grid AG; and
c) Italy NORD - Slovenia (NORD - SI), TERNA Rete Elettrica Nazionale S.p.A. and ELES d.o.o.

Article 7
Capacity Calculation Region 5: Greece-Italy (GRIT)

The CCR GRIT shall include the bidding zone borders listed below and shown on the map No 5 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:

a) Italy BRNN - Greece (BRNN - GR), TERNA Rete Elettrica Nazionale S.p.A. and Independent Power Transmission Operator S.A.;
b) Italy NORD - Italy CNOR (NORD - CNOR), TERNA Rete Elettrica Nazionale S.p.A.;
c) Italy CNOR - Italy CSUD (CNOR - CSUD), TERNA Rete Elettrica Nazionale S.p.A.;
d) Italy CNOR - Italy SARD (CNOR - SARD), TERNA Rete Elettrica Nazionale S.p.A.;
e) Italy SARD - Italy CSUD (SARD - CSUD), TERNA Rete Elettrica Nazionale S.p.A.;

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f) Italy CSUD - Italy SUD (CSUD - SUD), TERNA Rete Elettrica Nazionale S.p.A.;
g) Italy SUD - Italy BRNN (SUD - BRNN), TERNA Rete Elettrica Nazionale S.p.A.;
h) Italy SUD - Italy FOGN (SUD - FOGN), TERNA Rete Elettrica Nazionale S.p.A.;
i) Italy SUD - Italy ROSN (SUD - ROSN), TERNA Rete Elettrica Nazionale S.p.A.;
j) Italy ROSN - Italy SICI (ROSN - SICI), TERNA Rete Elettrica Nazionale S.p.A; and
k) Italy SICI - Italy PRGP (SICI - PRGP), TERNA Rete Elettrica Nazionale S.p.A.

Article 8
Capacity Calculation Region 6: Central Eastern Europe (CEE)

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1. The CCR CEE shall include the bidding zone borders listed below and shown on the map No 6 included in the Appendix to this CCRs Proposal as attributed to the referred TSOs:
   t) Germany/Luxembourg - Poland (DE/LU - PL), 50Hertz Transmission GmbH and PSE S.A.;
   u) Germany/Luxembourg – Czech Republic (DE/LU – CZ), TenneT TSO GmbH, 50Hertz Transmission GmbH and ČEPS, a.s.;
   v) Austria - Czech Republic (AT - CZ), Austrian Power Grid AG and ČEPS, a.s.;
   w) Austria – Hungary (AT – HU), Austrian Power Grid AG and MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   x) Austria - Slovenia (AT - SI), Austrian Power Grid AG and ELES, d.o.o.;
   y) Czech Republic – Slovakia (CZ – SK), ČEPS, a.s. and Slovenská elektrizačná prenosová sústava, a.s.;
   z) Czech Republic – Poland (CZ – PL), ČEPS, a.s. and PSE S.A.;
   aa) Hungary – Slovakia (HU – SK), MAVIR Hungarian Independent Transmission Operator Company Ltd. and Slovenská elektrizačná prenosová sústava, a.s.;
   bb) Poland – Slovakia (PL – SK), PSE S.A. and Slovenská elektrizačná prenosová sústava, a.s.;
   ö) Croatia - Slovenia (HR - SI), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), ELES, d.o.o.;
   dd) Croatia - Hungary (HR – HU), Croatian Transmission System Operator Ltd. (HOPS d.o.o.), MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   ee) Romania – Hungary (RO – HU), Compania Națională de Transport al Energiei Electrice "Transelectrica" S.A., MAVIR Hungarian Independent Transmission Operator Company Ltd.;
   ff) Hungary - Slovenia (HU - SI), MAVIR Hungarian Independent Transmission Operator Company Ltd., ELES, d.o.o.; and
   gg) Germany/Luxembourg - Austria (DE/LU - AT), Austrian Power Grid AG, TransnetBW GmbH, TenneT TSO GmbH and Amprion GmbH.

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2. The assignment of the bidding zone border BE-DE/LU to the CCR In accordance with the Agency Opinion 09/2015 dated 23 September 2015 regarding the compliance of the congestion management rules on the Germany/Luxembourg – Austria border with existing European legislation the bidding zone border DE/LU – AT described in paragraph 1 item n) shall be assigned to the CCR CEE. This assignment shall, without prejudice to paragraph 3, be effective from the approval of this CCRs Proposal by all regulatory authorities or a decision by the Agency in accordance with Article 9 of the CACM Regulation. From the approval of this CCRs Proposal, the TSOs responsible for the DE/LU – AT bidding zone border and not already listed for any other border under paragraph (1) a) – m) shall, without prejudice to paragraph 3, cooperate with the TSOs from the CCR CEE for the preparation of the methodologies and proposals to be developed by the CCR CEE in accordance with Article 1(2) of this CCRs Proposal.

4. For the avoidance of doubt, capacity allocation on the DE/LU – AT border shall be introduced in line with the implementation calendar agreed upon by the relevant regulatory authorities and TSOs in accordance with the Agency Opinion No 09/2015 and at the latest when implementation of flow-based capacity calculation takes places in the CCR CEE in accordance with the CACM Regulation.

5. The assignment of the bidding zone border HU-SI to the CCR CEE in accordance with paragraph 1 item m) of this Article shall be effective from the date of operation of the interconnection on this bidding zone border, which is under construction at the date of submission of this CCRs Proposal.

Article 9
Merger of the CCRs CWE and CEE

Under ENTSO-E facilitation the TSOs from the CCRs CWE and the CEE shall closely cooperate from the moment of the submission of this CCRs Proposal to all regulatory authorities towards the merger of the two CCRs, which shall take place as soon as possible. In order to define a clear roadmap, the TSOs from the CCRs CWE and the CEE shall submit within four (4) months after the submission of this CCRs Proposal to the relevant regulatory authorities of the proposed CCRs CWE and CEE a joint roadmap on how to merge the two CCRs. This joint roadmap shall use, as a basis, existing solutions on the flow-based day-ahead and intraday capacity calculation methodology, which shall be amended where necessary to adapt, among others, to the different grid structures of CWE and CEE TSOs.

Article 108
Capacity Calculation Region 76: South-west Europe (SWE)

The CCR SWE shall include the bidding zone borders listed below and shown on the map No 76 included in the Appendix to this CCRs Proposaldocument as attributed to the referred TSOs:

a) France - Spain (FR - ES), RTE - Réseau de transport d'électricité and REE - Red Eléctrica de España, S.A.U.; and
b) Spain - Portugal (ES - PT), REE - Red Eléctrica de España, S.A.U. and REN - Rede Eléctrica Nacional, S.A..

Article 119
Capacity Calculation Region 87: Ireland and United Kingdom (IU)

The CCR IU shall include the bidding zone border between Great Britain and Single Energy Market in Ireland and Northern Ireland attributed to the EirGrid, Moyle Interconnector (Moyle), National Grid Electricity Transmission plc (NGET) and SONI. The IU CCR is shown on the map No 87 included in the Appendix to this CCRs Proposaldocument.

Article 1210
Capacity Calculation Region 98: Channel

The CCR Channel shall include the bidding zone borders listed below and shown on the map No 98 included in the Appendix to this CCRs Proposaldocument as attributed to the referred TSOs:

a) France - Great Britain (FR - GB), RTE - Réseau de transport d'électricité, National Grid Electricity Transmission plc (NGET) and National Grid Interconnectors Limited (NGIC); and

b) Netherlands - Great Britain (NL - GB), BritNed Development Limited (BritNed) and TenneT TSO B.V..

Article ~~13~~11
Capacity Calculation Region ~~10~~9: Baltic

~~1.~~ The CCR Baltic shall include the bidding zone borders listed below and shown on the map No ~~10~~9 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:

a) Estonia - Latvia (EE - LV), Elering AS and Augstsprieguma tīkls;
b) Latvia - Lithuania (LV - LT), Augstsprieguma tīkls and Litgrid AB; and
c) Estonia - Finland (EE - FI), Elering AS and Fingrid Oyj;
d) Lithuania – Sweden 4 (LT-SE4), Litgrid AB and Svenska kraftnät; and
e) Lithuania- Poland (LT-PL), Litgrid AB and PSE S.A..

~~2. The assignment of the bidding zone borders LT-SE4 and LT-PL to the CCR Baltic in accordance with paragraph 1 items d) and e) of this Article shall be effective from the date of operation of the interconnections on this bidding zone borders, which are under construction at the date of submission of this CCRs Proposal.~~

Article ~~14~~12
Capacity Calculation Region ~~11~~10: South-east Europe (SEE)

The CCR SEE shall include the bidding zone borders listed below and shown on the map No ~~11~~10 included in the Appendix to this ~~CCRs Proposal~~document as attributed to the referred TSOs:

a) Greece - Bulgaria (GR - BG), Independent Power Transmission Operator S.A. and Elektroenergien Sistemen Operator (ESO) EAD; and
b) Bulgaria - Romania (BG - RO), Elektroenergien Sistemen Operator (ESO) EAD and Compania Națională de Transport al Energiei Electrice "Transelectrica" S.A..

TITLE 3
Final provisions

Article ~~15~~13
Implementation date of CCRs

The TSOs shall apply the ~~proposed~~ CCRs as described in Title 2 as soon as ~~all regulatory authorities have approved the proposed CCRs or a~~the decision has been taken by the Agency in accordance with Article 9(11) and 9(12) of the CACM Regulation.

Article ~~16~~14
Language

The official language for this ~~CCRs Proposal~~document shall be English. For the avoidance of doubt, where TSOs need to translate this ~~CCRs Proposal~~document into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 9~~-~~(14) of the CACM Regulation and any version in another language, the interpretation of the English version published by TSOs shall prevail.

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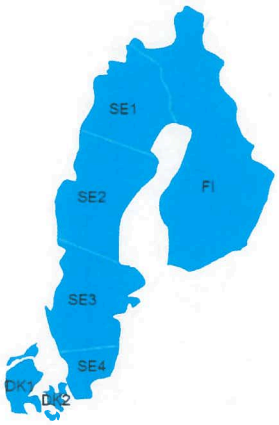
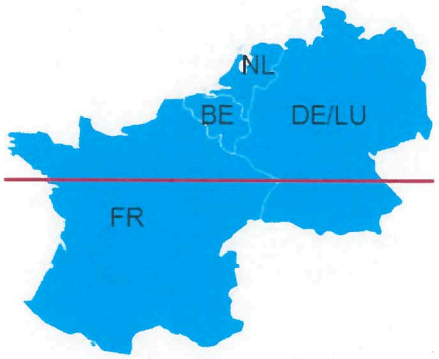
Appendix: Maps of the proposed CCRs

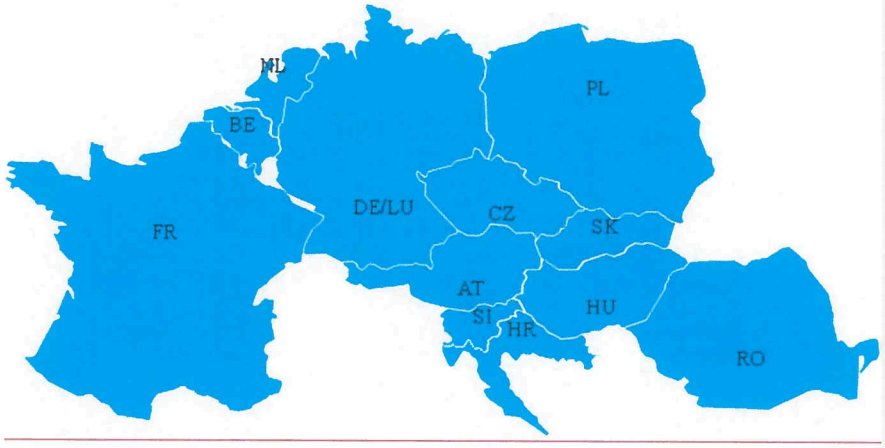
1. Capacity Calculation Region 1: Nordic



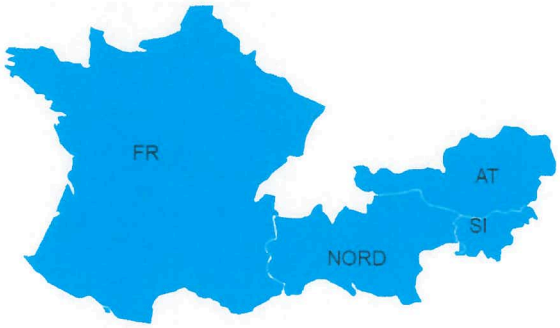
2. Capacity Calculation Region 2: Hansa (PL-DE/LU, DK2-SE4 and DK1-DK2 bidding zone borders are not part of this CCR)

3. Capacity Calculation Region 3: ~~Central-west Europe (CWE)~~Core



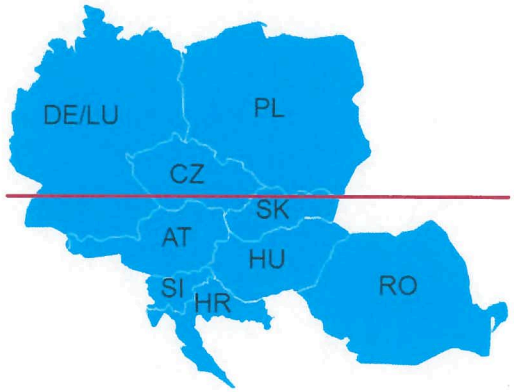


4. Capacity Calculation Region 4: Italy North (AT-SI bidding zone border is not part of this CCR)

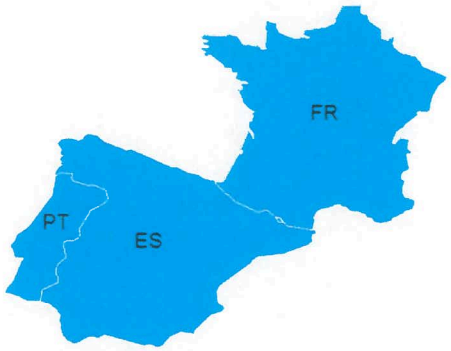

FR
AT
SI
NORD

5. Capacity Calculation Region 5: Greece-Italy (GRIT)

6. Capacity Calculation Region 6: Central Eastern Europe (CEE)

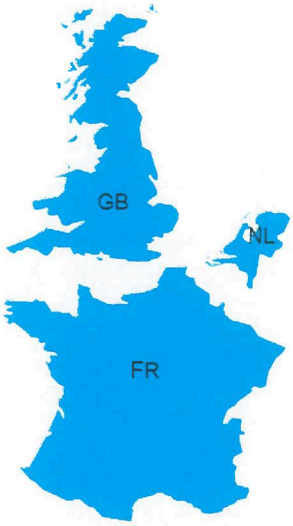


~~7.~~6. Capacity Calculation Region ~~7~~6: South-west Europe (SWE)

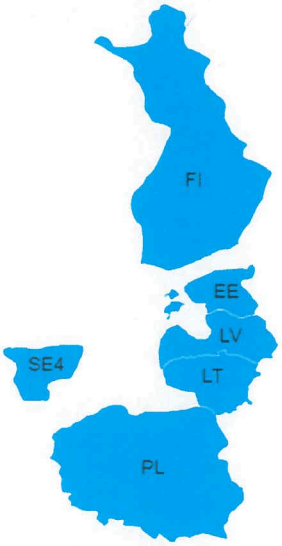


~~8.~~7. Capacity Calculation Region ~~8~~7: Ireland and United Kingdom (IU)

~~9.~~8. Capacity Calculation Region ~~9~~8: Channel



~~10.~~9. Capacity Calculation Region ~~10~~9: Baltic (SE4-PL bidding zone border is not part of this CCR)



~~11.~~10. Capacity Calculation Region ~~11~~10: South-east Europe (SEE)

ACER
Agency for the Cooperation of Energy Regulators

Annex II

Evaluation of responses to the public consultation on the CCRs Proposal

1 Introduction

Pursuant to Article 9(6)(b) and 15(1) of Commission Regulation (EU) 2015/1222[1] (the CACM Regulation), all Transmission System Operators (TSOs) submitted a common proposal regarding the determination of capacity calculation regions (the CCRs Proposal) to their respective national regulatory authorities (NRAs) for approval. The date on which the last NRA received the CCRs Proposal was 17 November 2015.

The NRAs were unable to reach a unanimous decision on the CCRs Proposal within six months from 17 November 2015. Therefore, in accordance with Articles 9(11) of the CACM Regulation and Article 8(1) of Regulation (EC) No 713/2009[2], the Agency became responsible for adopting a decision concerning the CCRs Proposal as of 18 May 2016.

In order to take an informed decision on the CCRs Proposal, the Agency invited, on 22 June 2016, all interested stakeholders to express in writing their views on the elements of the CCRs Proposal introduced after the public consultation held by ENTSO-E[3]. When doing so, stakeholders were asked to take into account that, according to the Agency, the CCRs Proposal should be compliant with the requirements of the CACM Regulation, as well as of Regulation (EC) No 714/2009[4] and, in particular, point 3.1 of its Annex I.

The Agency's complete consultation document can be found here.

The deadline for comments was 20 July 2016, 23.59 hrs (CET).

2 Responses

By the end of the consultation period, the Agency received responses from 58 stakeholders.

[1] OJ L 197, 25.7.2015, p. 24.
[2] OJ L 211, 14.8.2009, p. 1.
[3] 24 August to 24 September 2015.
[4] OJ L 211, 14.8.2009, 15.

The Agency would like to take this opportunity to thank all stakeholders for responding to the Agency's public consultation. The list of respondents is provided in Annex 1 of this evaluation paper, and the responses are accessible on the Agency's website[5].

The purpose of this evaluation paper is to summarise all stakeholders' comments and to respond to the views. The table below is organised according to the five questions in the consultation and provides the respective views from stakeholders.

[5] http://www.acer.europa.eu/Official_documents/Public_consultations/Pages/PC_2016_E_02.aspx

Respondents' views	ACER's views
1. Do you consider both the commitment from the CWE and the CEE TSOs to cooperate towards a merger of the CWE and CEE CCRs and the MoU signed on 3 March 2016 as sufficient to ensure that the CWE and CEE regions will develop and implement a common congestion management procedure compliant with the requirements of the CACM Regulation, as well as of Regulation (EC) No 714/2009? **Or, should the definition of the CCRs provide for a CCR already merging the proposed CWE and CEE regions to ensure compliance with the required common congestion management procedure?**	
29 stakeholders considered the commitment from the CWE and CEE TSOs to cooperate towards a merger of the CWE and CEE CCRs and the MoU signed on 3 March 2016 as insufficient to ensure that the CWE and CEE regions will develop and implement a common congestion management procedure. General feedback from stakeholders consisted of the following: • A merger is the only solution for ensuring that the two CCRs will develop and implement a common congestion management procedure compliant with the requirements of the CACM Regulation. • It will increase the level of development in both markets. • Parallel development of two different methodologies may eventually delay the CEE-CWE merger. More specific reasons for the support of an immediate merger broadly consisted of the following:	The Agency agrees with the majority of stakeholders that the commitment from the CWE and the CEE TSOs to cooperate towards a merger of the CWE and CEE CCRs and the MoU signed on 3 March 2016 are insufficient to ensure that the CWE and CEE regions will develop and implement a common congestion management procedure compliant with the requirements of the CACM Regulation, as well as of Regulation (EC) No 714/2009 (see the arguments in the Decision).
16 stakeholders raised particular concern that current efforts solely provide for day ahead flow-based capacity calculation in the merged CEE CWE CCR. These stakeholders considered the CCRs Proposal and MoU as insufficient to ensure development and implementation of a common congestion management procedure in compliance with the above-mentioned legislation for the intra-day timeframe. Therefore, these	The Agency agrees. The Agency also acknowledges that the merger of the CWE and CEE regions (into the Core region) will bring additional challenges and should not, in particular, undermine ongoing initiatives, e.g. to implement an Intraday Flow-Based project in the CWE region or to improve the regulatory framework for coordinated redispatching and countretrading in the CEE region.

Respondents' views	ACER's views
stakeholders recommended that the definition of the CCRs should provide for an immediate merger of the proposed CWE and CEE regions. Of these stakeholders, 1 stakeholder specifically stressed that: • it would lead to more coordination of capacity calculation close to real-time resulting in a better usage of available transmission capacity, and that any adverse impact of introducing the DE-AT bidding zone border would be significantly reduced if TSOs make available more capacity to the market through coordinated intraday capacity calculation and allocation. A reliable and predictable procedure would be beneficial for market participants.	In that respect, the Agency encourages CWE and CEE TSOs and NRAs to take utmost advantage of the ongoing efforts and progress achieved in the respective regions in order to speed up the development and implementation of common congestion management methodologies at the level of the two regions. To the extent necessary, some flexibility could be granted to the CWE-CEE TSOs, e.g. to develop less detailed methodologies and/or to propose a step-wise implementation of the methodologies commonly developed at the Core region's level.
4 stakeholders supported an immediate merger in the CCRs definition because it would provide legal and operational certainty which current commitments (such as bilateral commitments and the MoU of 3 March 2016) are unable to provide. In particular, they emphasised the need for: • clear governance rules considering that the current CWE initiatives shall be continued and finalised without any delay and disruption. • a binding agreement on methods and their implementation and application for coordinated capacity calculation and other related issues such as underlying input data and redispatching coordination. • maximising coordination through a common governance scheme which could coordinate cross regional and interregional schemes • and common legal obligations with respect to dispute resolution.	The Agency agrees that a CWE-CEE merger would provide more legal and operational certainty.
3 stakeholders supported an immediate merger but insisted that market coupling should start with the current capacity calculation baseline (as in CEE: NTC/ATC) and then continue with the development of a common flow-based capacity calculation methodology. These stakeholders considered this two-step approach as important for the testing phase of the	The Agency does not have strong views on whether market coupling could start with the current capacity calculation baseline (as in CEE: NTC/ATC) and then continue with the development of a common flow based capacity calculation methodology. It has however doubts that such a step-wise

Respondents' views	ACER's views
flow-based methodology implementation. Of these stakeholders, **1** stakeholder referred the unresolved splitting of the Austria-Germany bidding zone, which may pose a challenge during the development of a common methodology.	approach could prove to be important for the testing phase of the flow based methodology implementation. The Agency has also some concerns that such a project may further delay the implementation of a coordinated DA flow-based market coupling solution at the level of the CWE-CEE region.
1 stakeholder specifically considered that an immediate merger would ensure compliance with the required common congestion management procedure pursuant to Point 3.1 of Annex I of Regulation 714/2009, because the CWE and CEE regions form a very highly meshed transmission grid in continental Europe. Therefore, they must develop a common flow-based capacity calculation concept and process together not separately, and in particular they must develop: • rules for the governance of the merged region, which ensure that ongoing local implementation projects in the regions (i.e. intraday) should be continued on sub-regional level until the flow-based market coupling is implemented and/or these local projects could be extended to the whole merged region.	The Agency agrees. See above.
1 stakeholder saw merit in an immediate merger because it would ensure equal treatment of the TSOs according to the provisions in the CACM Regulation. Also, because an immediate merger would address both capacity calculation timeframes (although this could equally be addressed in a subsequent MoU). Ultimately, the stakeholder entrusts ACER in using its discretion when considering the options, and requests that ACER considers the challenges stemming from an immediate merger.	The Agency agrees. See above.
16 stakeholders considered the commitment from the CWE and CEE TSOs to cooperate towards a merger of the CWE and CEE CCRs and the MoU signed on 3 March 2016 as sufficient to ensure that the CWE and	The Agency disagrees (see the arguments in the Decision and ACER's views above).

Respondents' views	ACER's views
CEE regions will develop and implement a common congestion management procedure. General feedback from stakeholders consisted of the following: • The CCRs Proposal and the MoU have received positive feedback in the Florence Forum. • The CCRs Proposal provides a solid baseline for the gradual development of a common day ahead flow-based capacity calculation methodology. Stakeholders raised the issue of potential challenges from an immediate merger, and in particular warned of governance and legal/procedural issues which may arise during an immediate merger of the two regions, which may cause delays and inefficiencies: • Especially during the implementation of harmonised remedial actions and flow-based intraday capacity calculation arrangements. • Given the short timeframes provided in the CACM Regulation, which are not achievable, and extension of deadlines would require a revision of the CACM Regulation. • Considering the number and complexity of reforms needed to implement day-ahead flow-based market coupling throughout the CEE region, a merger would not speed up the process. • Considering the status of the XBID project, pushing flow-based capacity calculation in the intraday would not be rationale, as the CWE intraday methodology may fail in delivering expected results. • Quick wins, like the development of the intraday flow-based capacity calculation methodology or increased transparency, may be delayed.	The Agency acknowledges that the merger of the CWE and CEE regions will bring additional challenges and should not, in particular, undermine ongoing initiatives, e.g. to implement an Intraday Flow-Based project in the CWE region or to improve the regulatory framework for coordinated redispatching and countertrading in the CEE region. In that respect, the Agency encourages CWE and CEE TSOs and NRAs to take utmost advantage of the ongoing efforts and progress achieved in the respective regions in order to speed up the development and implementation of common congestion management methodologies at the level of the two regions. To the extent necessary, some flexibility could be granted to the CWE-CEE TSOs, e.g. to develop less detailed methodologies and/or to propose a step-wise implementation of the methodologies commonly developed at the Core region's level.

Respondents' views	ACER's views
• Given the diverging characteristics/market conditions of the two regions, an immediate merger would not be efficient. • Endanger current, progressive and pragmatic harmonization of the capacity calculation methodology at regional and EU level. A merger could endanger current achievements and envisaged measures in the CWE region. Stakeholders considered that TSOs have taken the most pragmatic, realistic and efficient approach because: • It will lead to successful delivery of a common day-ahead flow-based capacity calculation procedure. • It will enable reaching solutions in an easier and timely way, and will meet grid users'/citizens expectations, including being welcomed by a majority of CEE TSOs. • It is the practical approach, by putting priority on the more liquid day-ahead time frame. • It acknowledges the complexity of the process, which requires a step-by-step approach that facilitates solving technical issues on an individual and case-by-case basis, therefore contributing to a smoother implementation of flow-based capacity calculation methodology. • It enables parties to be aware of the levels of interconnection between the participating members, by acknowledging the unique operational challenges and security issues that may arise. • It accounts for the complexity and sensitivity of related issues for Member States and stakeholders. For example, the CEE TSOs' conclusion of the inability to implement the CWE flow-based methodology as they would lose flexibility to solve technical issues (CEE TSOs are developing their own flow-based methodology).	

Respondents' views	ACER's views
• Leaving intraday capacity calculation, redispatching and cost allocation out of the MoU is the easiest way forward for both regions. Of the stakeholders that considered current efforts as sufficient, there were nevertheless some suggested improvements. Including: **1** stakeholder insisted that: • TSOs commit to ensuring that the merger will effectively materialise in the longer term within reasonable timing, by providing a strict and detailed timeline, and that there should be an increased level of transparency in the process. **1** stakeholder insisted that: • NRAs within both CCRs and ACER must follow the progress made towards the development of a common capacity calculation methodology and the merger of the two CCRs very closely, to ensure that timelines are respected. **2** stakeholders suggested: • Improving the progress in bridging the implicit auctions between multi-regional coupling and the 4M market coupling project (RO-HU-SK-CZ market coupling) because it would result in better reference data for comparing NTC market coupling and flow-based market coupling results before 'going live'.	

Respondents' views	ACER's views
1 stakeholder made a general statement in favour of strengthening the cooperation between the two regions because it is the way forward for the implementation of the CACM Regulation.	The Agency agrees.
1 stakeholder did not expressly state that the CCRs Proposal and MoU were sufficient however, it did not support an immediate merger of the CEE and CWE CCRs. It advocated for a merger in the short-term which must be balanced with a high quality standard methodology. It also emphasised that the current MoU does not provide a sufficient level of detail.	See above.
1 stakeholder did not argue on the sufficiency of current efforts however, insisted that the quality of market coupling and market integration within the CWE CCR must be improved first before moving on to extending the flow-based market coupling to CEE, as it introduces a risk of slowing quick evolution in this field.	The Agency acknowledges the need for an improved transparency in the capacity calculation and redispatching methods and is committed to taking action in this important area but considers this point falls outside the scope of the CCRs definition process.
11 stakeholders provided no comments on Question 1.	
2. Do you have comments on the description of the geographical evolution of the CCRs over time, as proposed by all TSOs in Annex 3 to the Explanatory document to the CCRs Proposal?	
7 stakeholders commented on the lack of detail, clear planning and timelines as well as a credible roadmap for an increasingly larger CCR. In particular Annex 3 must: • Define and provide indicative timelines for merging Hansa, Channel and Baltic regions with one of their neighbouring CCRs taking into account evolution of other coordination projects within Europe (e.g. merger of CEE and CWE CCRs or construction of new	The Agency agrees that the CCRs Proposal lacks detail, clear planning and timelines with regard to the next mergers. The Agency considers that the definition of capacity calculation regions should be regularly re-assessed in light of forthcoming developments and the evolution of the level of interdependency between regions. The Agency invites the ENTSO-E, in the framework of its biennial report on

Respondents' views	ACER's views
interconnectors). Therefore, market participants will have necessary time horizons for establishing flow-based capacity calculation methodology in all CCRs. • Must do more to streamline coordination and integration efforts. The MoU provides more detail in order to urge TSOs to work more closely together, and enable progress in parts of the regions. • Need more information from TSOs on their plan for completing market integration at each step, taking into account previous experience, including guidance from NRAs. • Include transparency improvements for the flow-based and ATC based capacity calculation. • Maintain the step-wise approach to capacity calculation like with the CWE CCR. • Complement with efficiency studies comparing alternative path to capacity calculation. • Based on an impact assessment, including criteria, models or scenarios, to justify the proposed outlook and timelines for future enlargement or merger of CCRs. • Provide a long-term outlook with an indicative roadmap, together with a periodical review of the CCRs following structural evolution, accompanied by a full impact assessment of the current situation and possible changes, to facilitate the potential evolution of CCR configuration. An outlook should include future interconnectors to be commissioned beyond 2018, such as FABLink, IFA 2, Viking, NSN projects. • Not prevent TSOs from an increased coordination in cross-border redispatching measures and coordinated use of HVDC and Phase Shifting transformers within a larger CCR such as the new HVDC link on the France – Spain border (despite difficulties to develop a capacity calculation methodology on DC cables).	capacity calculation and allocation pursuant to Article 31 of the CACM Regulation, to develop statistical indicators to evaluate the level of interdependency between the defined CCRs and the expected efficiency gains further mergers could bring. When doing so, the relevant TSOs are invited to focus, in particular, on the level of interdependency between the CWE-CEE region and the Channel, Italy-North, South-East, Hansa and Nordic regions.

Respondents' views	ACER's views
• Clarify timelines and triggers for a review and possible re-delineation of CCRs. A periodic review of the CCRs, every four or five years, accompanied by a full impact assessment of the current situation and of possible changes to the CCRs is suggested to fill the current gap in the CACM Regulation which does not provide for a CCR review process. • Provide a precise timeline for CCR extension and publish an indicative timeline identifying the projected mergers of CCRs in the coming years, according to the available information on the evolution of the various on-going coordination projects in Europe.	
5 stakeholders <u>recommended the inclusion of Switzerland from the start in the CCRs definition (CWE and North Italy CCRs),</u> providing a range of reasons including: • Its central geographical location; it must be taken into account in the capacity calculation processes, otherwise important interconnectors will be ignored when calculating capacities in Central Europe. For example: security issues can arise when exchanges in Europe increase and systems are operated closer to their limits (Switzerland accounts for about 10% of all electricity exchanges in Europe). Its inclusion is therefore relevant for safe and secure network operation. • Its exclusion can have implications on grid security in Switzerland. • The Swiss network's role in the safe operation of the EU grid is further underlined in the System Operation Guideline (SO GL). • Its inclusion is a technical point that should be considered despite Switzerland's relationship with EU legislation **1 of the 5 stakeholders above** specifically requested that any further	The Agency reminds that, regardless of the many benefits the inclusion of some third-parties countries, in particular Switzerland, could provide, such inclusion requires specific agreements between the Union and those countries and the implementation of relevant Union legislation in those countries (see Article 1(4) and 1(5) of the CACM Regulation with regard to Switzerland).

Respondents' views	ACER's views
development in implementing the flow-based approach should wait until Switzerland joins single day-ahead market coupling. This stakeholder suggested that TSOs agree to extend the deadline for submission of the proposal for a common coordinated flow-based capacity calculation methodology to up to 6 months after Switzerland joins. **8** stakeholders requested the inclusion of the Serbian bidding zone border in the CEE CCR as it would have a positive impact on overall interconnectivity in the region. Specific reasons included: • Serbian borders (Serbia – Hungary, Serbia – Romania) are frequently used for trading within CEE. • Serbian PX and neighbouring CEE's PXs are compatible, so the inclusion of the bidding zone border would not present technical problems. • Its inclusion would reinforce Hungary-Romania (HU-RO) interconnectivity. • Its inclusion would help avoid grid and geography challenges faced by the region. **Of the stakeholders that advocated for Switzerland and Serbia being included in the CCRs definition, 3 stakeholders** made general comments about the benefits of their inclusion: • Their exclusion may undermine the functioning and processes of market coupling on those borders. • The inclusion ensures efficient and faster regional coordination. • It acknowledges the reality of the highly interconnected market, and avoids unnecessary bureaucracy, by way of technical implementation versus trade arrangements.	

Respondents' views	ACER's views
• It is necessary for swift coupling of the CEE-CEE CCRs.	
3 stakeholders requested that Romania is included in both the CEE and SEE CCRs, providing the following reasons: • Since the CCRs were last defined in the early 2000s, the list needs to be updated to reflect the realistic situation. • The CCRs definition should consider the equal geographical position of Romania in both Central- Eastern Europe and South-Eastern Europe and the energy flows between Romania and neighbouring countries. • Article 20(4) of the CACM Regulation supports the inclusion of Romania in both CEE and SEE regions. • Its geographical position and therefore the importance of the Romanian power system in the CEE region support such inclusion.	The Agency agrees.
1 stakeholder specifically recommended that TSOs provide for open, transparent and inclusive procedures. The stakeholder also suggested that those deliverables that come out of Article 31 (biennial report) and 32 (bidding zone review) of the CACM Regulation should be used to stipulate the development of the CCRs over time, as compared to the rather static CCRs Proposal.	The Agency agrees that the definition of capacity calculation regions should be regularly re-assessed in light of forthcoming developments and the evolution of the level of interdependency between regions (and that the mentioned deliverables could be a valuable input in that respect).
38 stakeholders provided no comments on Question 2 (or additional comments besides those associated with Question 1, which were included therein.)	

3. Should the CEE region (or a merged region) include the bidding zone borders between Croatia and Slovenia, between Croatia and Hungary, and between Romania and Hungary?

Respondents' views	ACER's views
28 stakeholders agreed that the CEE region (or a merged region) include the bidding zone borders between Croatia and Slovenia, between Croatia and Hungary, and between Romania and Hungary, and provided reasons, which are summarised in the following paragraphs. **3 of the 27** stakeholders provided their support because they are existing bidding zone borders and therefore fall within the scope of Article 15 of the CACM Regulation. **2 of the 27** stakeholders considered their inclusion as crucial for the effective, non-discriminatory and transparent access and management of the interconnectors. **1 of the 27** stakeholders supported them because their inclusion would enable the achievement of full capacity allocation, efficient congestion management and overall market efficiency in the CEE region. **1 of the 27** stakeholders supported them because these borders are congested and congestion management procedures are already in place. **18** stakeholders placed specific emphasis on the importance of immediately including the RO-HU border in the CEE CCR mainly because it would reflect the current level of market integration. In particular, the border has been included in implicit capacity allocation mechanism in the CEE CCR since November 2014, within the framework of the 4M MC project (RO-HU-SK-CZ market coupling). Stakeholders also raised the following points in support of its immediate inclusion: • It was supported by stakeholders during ENTSO-E's public	The Agency agrees that the bidding zone borders between Croatia and Slovenia, between Croatia and Hungary, and between Romania and Hungary should be included in the CWE-CEE merged region from the beginning as proposed in the CCRs Proposal.

Respondents' views	ACER's views
consultation. • Article 20(4) of the CACM Regulation provides that the TSOs from Member States which have borders with other regions are encouraged to join the initiatives to implement a common flow-based capacity calculation methodology with these regions. • EU's energy sector has developed since the adoption of Regulation (EC) No 714/2009 (and the Annex therein containing the regions). • Swift implementation of harmonised rules, procedures and systems across HU borders would help the Hungarian market. • It ensures Croatia has access to the RO-BG-GR block. • Its exclusion will have a negative impact on market participants and end consumers in Romania, not allowing them to benefit from a flow-based capacity calculation advantage. • The Harmonised Auction Rules (HAR) were adopted for long-term allocation, with a specific border annex harmonised with CEE rules and without major deviations to the general rules. • Romania is involved in initiatives to achieve intraday coupling. • It facilitates the IEM implementation. **4** stakeholders placed specific emphasis on the border between Croatia and Hungary, and **3** stakeholders placed specific emphasis on the border between Croatia and Slovenia, considering that the latter should be within the CEE or a larger CWE-CEE capacity calculation region. Their reasons overlapped, and are summarised in the following bullet points: • The Croatian transmission grid is currently affected by loop-flows deriving from North and West Europe in the CEE region.	

Respondents' views	ACER's views
• Cross border capacity allocation is already taking place on the SI-HR and HU-HR borders on yearly and monthly timeframe and also (as a transition solution only) on the day-ahead timeframe. • It enables better security of supply and allows for higher penetration of RES in the CEE region since most cross-border trade by Croatian market participants is carried out on these borders. • It makes more capacity available to market participants where flow-based capacity calculation takes place. • The inclusion of these borders is aligned with the CACM Regulation. • It enables faster inclusion of Croatian borders with non-EU countries into the CEE region. • It contributes to liquidity and integration in the CEE CCR. • There is an active participation in electricity exchanges and brokerage platforms in Germany (EPEX, SPECTRON), Slovenia (BSP yearly), Hungary (HUPX i TFS). • It reflects a logical sequence of market coupling in the region. • HOPS (Croatia TSO) is a shareholder in JAO, involved in the CEE-CWE merger project and a signatory of the MoU for the development of a common CWE CEE CCR day ahead flow-based capacity calculation methodology. • There exist historic ties between Croatian and Slovenia power systems. • Recent investment in cross-border infrastructure with Hungary was made with the aim of a single market, regional balancing and security of supply.	

Respondents' views	ACER's views
• The inclusion of the borders in the SEE CCR is unfeasible given the RO-HU border being included in the CEE CCR.	
16 stakeholders agreed that the CEE region (or a merged region) includes the bidding zone borders between Croatia and Slovenia, between Croatia and Hungary, and between Romania and Hungary, but did not provide any specific reasons.	See above.
1 stakeholder whilst supporting the CCRs Proposal stressed the obligation to cooperate in Article 29(9) of the CACM Regulation through exchange and confirmation of information on the interdependency of CCRs. **1** stakeholder whilst supporting the CCRs Proposal suggested a stepwise approach for implementation to lessen the impact that these new borders may have on implementation timelines.	The Agency agrees that a step-wise implementation of commonly defined congestion management procedures might be a more realistic approach and considers the CACM Regulation as sufficiently flexible to allow for it.
12 stakeholders provided no comments on Question 3.	
4. Should the CEE region (or a merged region) include a bidding zone border between Germany/Luxembourg and Austria?	
30 stakeholders supported the inclusion of a bidding zone border between Germany/Luxembourg and Austria in the CEE region (or a merged region).	The Agency agrees with a majority of stakeholders that, given the proven existence of a structural congestion on the DE-AT border (see in particular

Respondents' views	ACER's views
The majority of these stakeholders placed weight on ACER's Opinion No 09/2015[6], insisting that the CCRs Proposal maintains compliance with the ACER Opinion, and specifically citing that the Opinion illustrates: • German/Austrian interconnector does not have sufficient capacity to accommodate all flows deriving from implementation of commercial contracts, and that such flows are carried out as unscheduled flows which burden interconnectors on other borders such as: Polish/German, Polish/Czech, Czech/German, Czech/Austrian. • absence of a regionally coordinated allocation mechanism at the cross-border interconnection between Germany and Austria which is at variance with Regulation (EC) No 714/2009. • DE-AT interconnection is usually and structurally congested and therefore requires capacity allocation methods to be implemented on the border, in accordance with point 1.2 and point 1.3 of Annex I to Regulation (EC) No 714/2009, within the definition provided in Article 2(2)(c) of the same Regulation. • existing mitigating measures cannot replace transparent, non-discriminatory and market based congestion management procedures compliance with Regulation (EC) No 714/2009. • DE-AT border should form a constituent part of the CEE region for the application of coordinated capacity calculation, optimization of allocation and secure operation of the network, as required by point 3.5 of Annex I to Regulation (EC) No 714/2009.	Annex IV to this Decision), the implementation of a capacity allocation procedure on the DE-AT border is required pursuant to Article 16(1) of Regulation (EC) No 714/2009 and points 1.2, 1.4 and 3.1 of Annex I to this Regulation, and can be implemented through the CCRs proposal process. The recent measures implemented on the DE-PL border (in particular the installation of a PST in Mikulowa and the opening of the interconnector Vierraden-Krajnik between Poland and Germany) aim at remedying the impact of the North-South exchanges within the DE-AT bidding zone on the DE-PL border, however, they do not fundamentally change the physical impact of a DE-AT cross-border exchange on neighbouring countries. They do not change either the fact that the actual maximum transfer capacity between Germany and the main part of Austria would not be able to accommodate all the requests for exchanges between Germany and Austria in the absence of loop flows. Finally, these measures cannot replace transparent, non-discriminatory and market-based congestion management procedures compliant with Regulation (EC) No 714/2009, which give efficient economic signals to market participants and the transmission system operators involved (see Annex IV to the Decision for further details). .

[6] http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2009-2015.pdf

Respondents' views	ACER's views
• a first step towards establishing a level playing field for electricity trade in the CEE region (especially since the existing setting discriminates against market participants and is a significant obstacle to merging the CEE and CWE regions and further market integration). A large share of stakeholders emphasised that the inclusion of the German/Luxembourg - Austrian bidding zone border (DE-AT) in the CEE CCR region (or a merged region) is crucial for the effective, non-discriminatory and transparent access and management of the interconnectors. The implementation of the border should therefore enable non-discriminatory treatment and bring equal opportunities for all involved Member States. And that furthermore, the inclusion of the DE/LU-AT bidding zone border, regarding the German-Austrian interconnector as structurally limited, would enable the establishment of a capacity allocation method on the border. A large share of shareholders emphasised that implementing the bidding zone border may make the trade of electricity between Polish and German markets possible (currently the possibility of energy exchange between Polish and German markets is excluded). **2** stakeholders considered the said bidding zone border inclusion as an initial step to a successful implementation of a flow-based methodology, by solving the loop flow issue. Its exclusion would expose the flow-based methodology to the risk of not getting NRA approval. Furthermore, these stakeholders stressed that the market would be able to handle the split, i.e. no congestion means the capacity allocation mechanism will allow for no price differences, whereas congestion will be reflected in zonal prices,	

Respondents' views	ACER's views
which will inform the further changes that may be needed. **4** TSOs (Poland, Czech Republic, Slovakia and Hungary) insist that the loop flows at their borders cause big uncertainty, and require the implementation of costly remedial actions. Specific reference is made to two studies issued by Czech, Polish, Slovak and Hungarian TSOs on the impact of the DE-AT bidding zone on neighbouring systems. Ongoing bidding zone discussions since 2006 have a negative influence on the regional development of a flow-based methodology. Reference is made to other reports: THEMA (consultant), ENTSO-E's bidding zone review and ACER's 2015 Market Monitoring Report. **3** stakeholders insist on the fact that the inclusion of the DE/LU-AT bidding zone border would improve the situation, provide for equal conditions for all market participants and remove a significant barrier in the market integration process. **2** stakeholders insist that the inclusion of the said bidding zone border would have a positive impact on market efficiency and the effectiveness of the single European energy market. **2** stakeholders stressed that maintaining the status quo would endanger secure operation of transmission systems. **2** stakeholders emphasised that a DE-AT bidding zone border must be an integral part of the CEE CCR because it is important for congestion management in the whole region.	

Respondents' views	ACER's views
1 stakeholder noted that since 30-50% of commercial transactions between Germany and Austria are actually realised through neighbouring networks of Poland and Czech Republic, the DE-AT border must be considered to have a significant impact on the power flows in the region. The issue is compounded by the fact that the exchanges at this border are the highest in the CEE region. **1** stakeholder highlighted that during the development of the CCRs Proposal, TSOs considered all borders within the CEE region pursuant to point 3.2 of Annex I to Regulation 714/2009. Furthermore, the CACM Regulation requires TSOs to cooperate on a CCR level, pan-European level and across bidding zone borders, and capacity calculation for day-ahead and intraday timeframes should be coordinated at least at the regional level, and thus defined by TSOs. **1** stakeholder considered that the border de facto exists by way of TSOs applying operational limitations for scheduling intraday exchanges (i.e. intraday stop).	
13 stakeholders did not support the inclusion of a bidding zone border between Germany/Luxembourg and Austria in the CEE region (or a merged region), the majority of which placed strong weight on the formal process in the CACM Regulation. In particular, that the inclusion of new bidding zone borders is outside the scope of Article 15 of the CACM Regulation, which is intended to propose CCRs based on existing borders, and that instead the introduction of a new bidding zone border is solely provided for in Article 32 *et seq.* of the CACM Regulation.	The Agency agrees that the bidding zone review should be considered as the main process to define bidding zones in a region. However, the Agency disagrees with stakeholders who consider that the inclusion of new bidding-zone borders is outside the scope of Article 15 of the CACM Regulation and that Article 32 of the CACM Regulation is the exclusive path to introduce a new bidding zone border (see the core Decision for further details).
A large share of the stakeholders insisted that a bidding zone study is	In the Agency's views, the inclusion of new bidding zone borders in the CCRs

Respondents' views	ACER's views
currently being performed by ENTSO-E in accordance with Article 32 *et seq.* of the CACM Regulation, and that this formal process and its results should not be undermined, and that the bidding zone review in accordance with Article 32 *et seq.* is based on a thorough and detailed review of the existing bidding zone configuration as a prerequisite for the introduction of new bidding zone borders, including the prescribed two-step process followed by national regulatory approval. Therefore, the approval of the inclusion of the bidding zone border within the CCRs Proposal is beyond ACER's competence, and legally inadmissible.	Proposal does not undermine any bidding zone review process. Neither has any such process formally started yet, nor is its launch precluded by the aforementioned inclusion. Furthermore, as explained above, a new biding zone border can be implemented in the framework of Article 15 where this is necessary to comply with Regulation (EC) No 714/2009 or where this is necessary to meet the objectives of the CACM Regulation. The Agency therefore considers that the inclusion of this border in the CCRs Proposal is perfectly possible and in the area of the decision-making competence of the Agency. The parties need to make sure in the implementation phase that the decision on the DE-AT bidding zone will not be an obstacle to the implementation of the results of the bidding zone review.
4 stakeholders raised the issue of E-control's request for amendment pursuant to Article 9(12) of the CACM Regulation. They consider that the request for amendement was not dealt with in line with the procedure in that Article of the CACM Regulation, and that the procedure ought to be upheld to avoid potential judicial declaration of nullity of the terms and conditions or methodologies adopted under the CACM Regulation.	As confirmed by the services of the European Commission's Directorate-General for Energy (letter of 4 July 2016), the Agency considers E-Control's request for amendment as null and inadmissible and considers itself as fully competent to take a Decision on the CCRs Proposal.
4 stakeholders raised the issue that the inclusion of the bidding zone border infringes certain Articles in the Treaty on the Functioning of the European Union (TFEU), and in particular the competition rules in Article 101 of the TFEU, Article 102 of the TFEU, Article 106 of the TFEU, and the provisions on the free movement of goods in Articles 34 and 35 of the TFEU.	Since a capacity allocation procedure on the DE-AT border is required under Regulation (EC) No 714/2009 to manage the congestion problems caused by the DE-AT cross-border exchanges in a market-based way, the implementation of this capacity allocation procedure is a necessary and justified legal consequence. In fact, it is the legislator's response to a situation of inadequate interconnection capacity, which, by its nature, is an obstacle to free cross-border trade in electricity and to a real competitive European electricity market. Recital (11) of the CACM Regulation makes it particularly clear that the splitting of bidding zones may also be necessary 'to ensure efficient congestion management and overall market efficiency'. As such, the implementation of a capacity allocation procedure on the DE-AT border is only enabling competitive

Respondents' views	ACER's views
	access to transmission lines and promoting non-discriminatory trade in electricity in the CWE and CEE regions. Therefore, it does not constitute an artificial split of an integrated market infringing Articles 101 or 102 TFEU or an artificial trade barrier infringing Articles 34 or 35 TFEU. On the contrary, it contributes to competition and market integration by creating a level-playing field for market participants on the European wholesale market.
3 stakeholders noted that there is no congestion at this potential bidding zone border. One of these stakeholders also noted that the interconnection on the border is usually in a position to accommodate all physical flows between Austria and Germany, therefore there is no predictable and stable congestion at this border within the meaning of 'structural congestion' in the CACM Regulation. These three stakeholders insisted that the ACER Opinion must now be considered in light of developments. They listed the following developments: • the upcoming opening of the phase shifter in Mikulowa which can be used to directly control the flows and allow at least some import to Poland. • the upcoming opening of the interconnector Vierraden-Krajnik between Poland and Germany. • the addition of at least two strong 380 kV circuits between Germany and Austria by 2019. Austrian authorities have recently approved the construction of 8000 MW of additional interconnection capacity between Germany and Austria. The interconnection capacity will total 18000 MW and will exceed Austria's peak load. • the upcoming operation of the phase shifters at the Czech-German border. • the special switching of Hradec-Rohrsdorf to TenneT; • the north south transmission capacity should be increased in	As explained above, the Agency considers that the recent measures implemented or on the point to be implemented in the CEE region (as, e.g. the installation of a PST in Mikulowa and the opening of the interconnector Vierraden-Krajnik between Poland and Germany) aim at remedying the impact of the North-South exchanges within the DE-AT bidding zone on the DE-PL border but do not fundamentally change the proven facts that: 1) cross-border exchanges on the DE-AT border have a significant impact on structurally congested areas in the CWE and CEE regions and 2) the actual maximum capacity transfer would usually be not able to accommodate all DE-AT cross-border exchanges in the absence of loop flows. These measures cannot either replace transparent, non-discriminatory and market-based congestion management procedures compliant with Regulation (EC) No 714/2009, which give efficient economic signals to market participants and the transmission system operators involved. The Agency highly welcomes the intention of the Austrian and German authorities to develop new grid infrastructures in order to reinforce their respective network and notes that such new grid infrastructure developments can only help reducing any potential price differential stemming from the introduction of capacity allocation method on the DE-AT border. However, the Agency considers that the planned developments do not provide a sufficient level of certainty, and therefore cannot be relied upon in defining

Respondents' views	ACER's views
Germany in 2016 by 3000+ MW.	the CCRs and the borders therein.
2 stakeholders emphasised that the ACER Opinion 09/2015 is not binding and therefore does not provide any sustainable legal basis.	The Agency fully acknowledges the non-binding character of its Opinion 09/2015. The Agency is, however, of the view that the findings in this Opinion, as well as the new ones in Annex IV to this Decision, prove that the non-inclusion of this border in the CCRs Proposal would clearly go against Regulation (EC) No 714/2009 and the objectives of the CACM Regulation.
1 stakeholder insisted that there was no proof available to show that congestion exists at the DE-AT border. To date, no assessment has been undertaken with regard to the presumed congestion, including the identification of all potentially congested interconnectors and an analysis of the extent to which structural congestion within Germany contributes to unscheduled flows in the CEE region.	Annex IV to this Decision demonstrates that there is a structural congestion on the DE-AT border itself.
1 stakeholder insisted that ignoring the correct formal process as outlined in Article 32 *et seq.* of the CACM Regulation could lead to wrong incentives, i.e. the attitude of viewing the capacity calculation from a national or control area perspective.	The Agency considers that Annex IV to this Decision shows the importance and urgent need to include the DE-AT border in the capacity calculation method of the CWE-CEE region.
1 stakeholder highlighted the benefits of the bidding zone review process because it will result in balanced conclusions as to the necessity and appropriateness of a possible bidding zones re-delineation. In particular it allows for an in-depth analysis and exchange of views between regulators/ACER, TSOs/ENTSO-E, and market participants, which contributes to the consideration of all viewpoints in the final proposal to be made by ENTSO-E. It also provides for a consultation with market participants, in line with the amendment process described in Article 9(13) of the CACM Regulation.	In the Agency's views, the inclusion of new bidding zone borders in the CCRs Proposal does not undermine any bidding zone review process. Neither has any such process formally started yet, nor is its launch or the implementation of its result precluded by the aforementioned inclusion. The Agency considers that the need for implementing a capacity allocation mechanism on the DE-AT border, and therefore for including this border in the CCRs Proposal, has been thoroughly assessed and discussed. It has furthermore received a favourable Opinion from the whole NRAs' community but one.
1 stakeholder raised the issue that the inclusion of the bidding zone border would have negative effects on market liquidity and market power.	As mentioned in its Opinion No 09/2015, the Agency considers that the potential negative effects of implementing a capacity allocation mechanism on

Respondents' views	ACER's views
Therefore, it would run counter to stepwise integration of European electricity markets.	the DE-AT border need to be further evaluated and, if deemed necessary, potential transitory regulatory measures for market participants could be put in place.
1 stakeholder supported the inclusion of a bidding zone border between Germany/Luxembourg and Austria in the CEE region (or a merged region) but stressed that the consultation as not the formal process within which this bidding zone border should be considered.	See above.
2 stakeholders supported the inclusion of a bidding zone border between Germany/Luxembourg and Austria in the CEE region (or a merged region) but did not provide specific reasons.	
1 stakeholder refrained from taking a strict view however, suggested that further improvement of the flow-based calculation should be analysed in depth before any discussion of delimitation of bidding zones, so as to avoid capacity calculation from a national or control area perspective. The stakeholder also considered that the CCRs process is not the place to introduce a new bidding zone border as there is the ENTSO-E bidding zone review study, which should allow a deeper and sound understanding of important parameters for a well-functioning, competitive and unified wholesale electricity market as set out in the Third Energy Package. Any reduction/splitting of bidding zones should take place only if there is structural congestion that will persist in the future and only after a detailed cost-benefit analysis and impact assessment including its impact on market efficiency and market dynamics.	See above.
1 stakeholder cited Article 16(1) of Regulation (EC) No 714/2009, which provides that congestion must be countered by way of non-discriminatory market-based solutions.	The implementation of a capacity allocation method on the DE-AT border would constitute the most transparent, non-discriminatory market-based solution.
11 stakeholders provided no comments on Question 4.	

Respondents' views	ACER's views
5. Do you have comments on any other new element or development concerning the CCRs Proposal, which occurred after the public consultation held by ENTSO-E from 24 August to 24 September 2015?	
5 stakeholders raised the issue of weak transparency, and stressed that after one year of flow based market coupling, the lack of transparency has had consequences on the understanding and the prediction of the prices for market parties. In particular: • TSOs should provide more transparency on the parameters that are price sensitive. • TSOs should provide greater transparency on redispatch and other remedial actions. • TSOs should establish a transparent process for inter-CCR coordination, in accordance with the provisions of the CACM Regulation. • TSOs should focus on transparency of calculation methodologies. • TSOs should ensure ongoing transparency during the initial implementation of the flow-based capacity allocation and the functioning of the flow-based capacity allocation. For example: *ex-ante* publication by TSOs of the complete set of flow-based parameters, because availability and disclosure of fundamental data will allow market participants to adjust appropriately and will reduce uncertainty. • Attention must be given to the CWE CCR where transparency requirements have not been properly implemented, which does not set a good precedent.	The Agency acknowledges the need for an improved transparency in the capacity calculation and redispatching methods and is committed to taking action in this area but considers this point falls outside the scope of the CCRs definition process.
4 stakeholders stressed the importance of taking into account current significant delays in the implementation of the CACM Regulation during	The Agency notes this comment but considers it falls outside the scope of this CCRs definition process.

Respondents' views	ACER's views
the finalisation of the timetable in the Electricity Balancing Network Code.	
1 stakeholder specifically recommended that the institutional responsibility for drafting and approving the "all TSOs/all NRAs" methodologies provided for in the CACM GL is directly invested in ENTSO-E and ACER, given the failure in the NRA approval process.	The Agency notes this comment but considers it falls outside the scope of this CCRs definition process.
1 stakeholder highlighted the current poor results of the flow-based allocation method and provided recommendations: • TSOs and NRAs must work on solutions to avoid loop flows in accordance with Regulation (EC) No 714/2009 (with reference to a study of the Belgian NRA, CREG). • Smaller price zones are disadvantaged due to power flows going to larger control areas as a result of the social welfare maximisation criterion. Must find a solution during a power shortage (spot price equals market price cap) and during everyday operation of the algorithm. There is currently no acceptable solution for intraday or balancing domain recalculation after day-ahead flow-based market clearing in the CWE CCR. **1** stakeholder specifically recommended TSOs to improve the calculation time to make the market more efficient through faster coordination for example, as speed is a key element to market integration.	The Agency notes these comments but considers they fall outside the scope of this CCRs definition process.
1 stakeholder emphasised that the integration of RES in the electricity markets requires TSOs to increase capacity calculation updates, especially near time of delivery.	The Agency notes this comment but considers it falls outside the scope of this CCRs definition process.
1 stakeholder raised concern that the CCRs Proposal separates the France-Switzerland border (FR-CH) in the future from the other Italian northern borders (Region 4), and suggested that it must be justified and	The Agency reminds that, regardless of the many benefits the inclusion of some third-parties countries, in particular Switzerland, could provide, such inclusion requires specific agreements between the Union and those countries

Respondents' views	ACER's views
explained by an impact assessment and the analysis of different options.	and the implementation of relevant Union legislation in those countries (see Article 1(4) and 1(5) of the CACM Regulation with regard to Switzerland).
1 stakeholder requested that the CCRs Proposal take account of any changes in the future/prospective bidding zone borders due to interconnections that are planned to be commissioned after 2018.	The Agency agrees that the definition of capacity calculation regions should be regularly re-assessed in light of forthcoming developments and the evolution of the level of interdependency between regions.
1 stakeholder reminded of the need to ensure consistency with the SO GL during regional cooperation within CCRs. For example: when building the common grid model and during regional coordination on remedial actions activation.	The Agency notes this comment but considers it falls outside the scope of this CCRs definition process.
1 stakeholder emphasised that the current CCRs Proposal is the most efficient and pragmatic, and that ACER consults in case an amendment to the current CCRs Proposal is requested, directly with all TSOs and ENTSO-E on the draft decision / new amendments text. The stakeholder also expressed that it is important to involve European non-EU TSO members of ENTSO-E, especially those responsible for electricity systems physically connected to EU Member States, in defining the CCRs.	The Agency considers that the current CCRs Proposal is not compliant with the Regulation (see the arguments in the core Decision). The Agency has consulted all TSOs and ENTSO-E before issuing this Decision.
1 stakeholder made the observation that in the CEE and CWE CCRs, there are two overlapping Regional Security Coordinators (RSCs) (Coreso and TSC), covering most of the countries that are at stake in the CEE-CWE merger. Many TSOs already work together operationally as the information for capacity calculation is available in these RSCs.	The Agency notes this comment and considers the fact that many TSOs already work together operationally in the framework of Coreso and TSC as an encouraging factor for the forthcoming merger of the two regions.
1 stakeholder requested the inclusion of the Swiss and Norwegian borders in the CCRs definition, providing the following reasons: • Their exclusion will be detrimental to the functioning of the relevant CCRs. • The state of advancement of the wholesale electricity markets in both these countries.	As noted above, the Agency reminds that, regardless of the many benefits the inclusion of some third-parties countries, in particular Switzerland, could provide, such inclusion requires specific agreements between the Union and those countries and the implementation of relevant Union legislation in those countries (see Article 1(4) and 1(5) of the CACM Regulation with regard to Switzerland).

Respondents' views	ACER's views
• Their inclusion would effectively contribute to creating an integrated European electricity market, to enhancing security of supply, and to increasing flexibility within Europe by allowing for cross-border electricity exchange between non-adjacent EU Member States.	
1 stakeholder raised the issue that Annex 1 of the CCRs Proposal's explanatory document titled "Future composition of CCRs including various non-EU bidding zone borders" contains two chapters which are missing important borders between Energy Community Parties (synchronously interconnected non-EU bidding zones). It is important to include all interconnected areas in the 'shadow' CCRs because they will form the basis for the capacity calculation and allocations to be applied by the TSOs.	As noted above, the Agency reminds that, regardless of the many benefits the inclusion of some third-parties countries, in particular Switzerland, could provide, such inclusion requires specific agreements between the Union and those countries and the implementation of relevant Union legislation in those countries (see Article 1(4) and 1(5) of the CACM Regulation with regard to Switzerland).
1 stakeholder raised the issue of the Brexit vote, and requested that the CCRs Proposal provides for a degree of flexibility in the deliberation of the most appropriate common capacity calculation methodology for the Ireland-UK (IU) region, given the uncertainty as to the UK's internal and external policies, as well as its interaction with the EU.	The Agency notes this comment but considers it falls outside the scope of this CCRs definition process.
1 stakeholder raised the issue of the lack of a thorough impact assessment of the proposed delineation of CCRs, as well as an analysis of possible alternatives.	The Agency agrees that the CCRs Proposal's impact assessment of the proposed delineation of CCRs, as well as detail, clear planning and timelines with regard to the next mergers could have been more thorough. The Agency considers that the definition of capacity calculation regions should be regularly re-assessed in light of forthcoming developments and the evolution of the level of interdependency between regions. The Agency invites the relevant TSOs and NRAs to submit a new CCRs

Respondents' views	ACER's views
	proposal within 3 years after this Decision is issued and, when doing so, to focus, in particular, on the following possible future mergers: - the merger of the Channel region with the CWE-CEE region; - the merger of the Italy North and South-East Europe regions with the CWE-CEE region; and - the merger of the Hansa region with the Nordic region and then further with the CWE-CEE region.
1 stakeholder suggested that there is some level of flexibility in the definition of CCRs due to the wide spectrum of operational issues for stakeholders.	The Agency considers that the CACM Regulation provides enough flexibility with regard to the implementation timeline of the CACM provisions.
39 stakeholders provided no comments on Question 5.	

Annex 1 - List of Respondents

Organisation	Type
ADH CR	Association
AFEER	Association
AGEN-RS	NRA
AMERICAN CHAMBER OF COMMERCE IN ROMANIA	Association
Amprion	TSO
ANRE	NRA
Austrian Federal Economic Chamber	Association
Austrian Power Grid AG	TSO
BDEW	Association
CERA	NRA
CEZ Group	Energy Company
CNTEE Transelectrica SA	TSO
Confederation of Industry of the Czech Republic	Association
EAI	Association
ENTSO-E	European Network of Transmission System Operators
E-control	NRA
EDF	Energy Company
EFET	Association
Enel SpA	Energy Company
Energy Community Secretariat	
ERU	NRA
Eurelectric	Association
EXAA Energy Exchange Austria	Electricity Exchange
Febeliec	Association
Federation of Austrian Industries	Association
Forum	Association
GEN-I Group d.o.o.	Energy Company
HEP	Energy Company
HERA	NRA
IGMNiR	Association
IEPiOE	Association
KIGEiT	Association
Lewiatan	Association
Market Parties Platform	Association
MEKSZ	Association
Ministry of Energy (Romania)	Member State

Ministry of Industry and Trade of the Czech Republic	Member State
MVM Partner	Energy Company
Oesterreichs Energie	Association
OPCOM	Market Operator
PGE S.A.	Energy Company
PKEE	Association
Polenergia Obrot SA	Energy Company
Polish Chamber of Chemical Industry	Association
Polish Glass Manufacturers Federation	Association
Polish Lime Association of End-users of Electricity and Gas (WAPNO)	Association
Polish Wind Energy Association	Association
PSE S.A.	TSO
PTPiREE	Association
Romanian Energy Centre	Association
SPP	Association
swisselectric	Association
TenneT B.V and TenneT GmbH	TSOs
Towarzystwo Obrotu Energią (TOE)	Association
Transenergo Com SA	TSO
URE	NRA
Verbund AG	Energy Company

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Annex III

Evaluation of responses to the NRA and TSO consultation on the preliminary draft Agency Decision on the CCRs Proposal

1 Introduction

Following the public consultation which took place 22 June to 20 July 2016, and for which the evaluation of responses is provided in the preceding Annex (Annex IIa), the Agency subsequently held a consultation for national regulatory authorities (NRAs) and transmission system operators (TSOs). This subsequent consultation was held in the context of the ongoing process towards an Agency decision on the 'All TSOs' proposal for Capacity Calculation Regions (CCRs) 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', pursuant to Article 9(11) of Commission Regulation (EU) 2015/1222 (the CACM Regulation)[1].

In particular, NRAs and TSOs were asked to provide their comments on the preliminary draft Decision on the CCRs Proposal, together with a preliminary definition of the CCRs, a preliminary Evaluation Paper of the Public Consultation and a preliminary Technical Justification Document demonstrating the existence of a structural congestion on the DE-AT border. The consultation took place from 15 September to 7 October 2016 (inclusive).

2 Responses

By the end of the consultation period, the Agency received responses from **ENTSO-E** (as a 'joint response of all TSOs') as well as individual responses from **three TSOs**, and **four NRAs.**

The 'joint response of all TSOs' by ENTSO-E was primarily focused on expressing concerns on the direct merger of the Central West Europe (CWE) and CEE (Central East Europe) CCRs. Besides this primary concern, ENTSO-E also provided comments of an editorial/factual nature and comments of a clarification nature.

[1] OJ L 197, 25.7.2015, p. 24–72.

Two of the TSOs, Amprion and TenneT (on behalf of TenneT TSO BV and TenneT TSO GmbH), confirmed the above concerns expressed in the 'joint response of all TSOs' by ENTSO-E, while stressing points of particular concern.

One TSO (Austrian Power Grid) provided diverging comments from the 'joint response of all TSOs' by ENTSO-E. In particular, it expressed its full support for the intended merger of the CWE and CEE CCR. It also provided comments with respect to the inclusion of the DE-AT bidding zone border and on the Agency's Technical Justification Document.

Two of the NRAs (Institut Luxembourgeois de Régulation and Urząd Regulacji Energetyki) provided comments on the all TSOs' proposal on capacity calculation regions, which were of an editorial /factual nature. One of the NRAs (Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen) provided comments, which were of a clarification nature to the Agency's Technical Justification Document.

One NRA (E-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft) provided comments of a more substantive nature with respect to the inclusion of the DE-AT bidding zone border and on the Agency's Technical Justification Document .

The following table is organised according to the individual respondents and their comments. It contains a summary of all comments received during the consultation period, as well as the Agency's corresponding views.

Respondents' views	ACER's views
ENTSO-E Response (as a joint response of all TSOs)	
The ENTSO-E response raised specific concern about the Agency's amendment to the all TSOs' proposal on capacity calculation regions, namely the merger of the CWE CCR and the CEE CCR into one CCR. The following comments were made in this regard: • The current approach, as described in the all TSOs' proposal on capacity calculation regions (the development of a common flow-based day-ahead capacity calculation methodology and subsequent merger of the CWE and CEE CCRs) would enable TSOs to fully focus their attention on developing and implementing a common flow-based day-ahead methodology. • The current approach provides the required regional flexibility before the implementation of the common flow-based day-ahead capacity calculation methodology and is similar to the approach provided for in Article 15(3) of the CACM Regulation. • ENTSO-E highlighted the availability of a roadmap toward the merger and the Memorandum of Understanding (MoU) signed on 3 March 2016. • All CWE and CEE TSOs entered into a 'legally binding' Cooperation Agreement, legally formalising the MoU principles, and the cooperation provided therein is ongoing and currently delivering results.	While the Agency acknowledges that a direct merger will imply some challenges, it also believes that all the efforts and progress achieved already in the framework of the ongoing regional projects should help foster the development of common methodologies at the level of the two regions. The Agency also considers that the CACM Regulation is flexible enough and perfectly compatible with the existence of (sub-) regional projects, provided the latter are consistent with the common methodologies developed at regional level.

Respondents' views	ACER's views
• The deadlines provided in the CACM Regulation are 'too short and hence very challenging in case of a direct merger. This will create legal and regulatory uncertainty.' • A 'direct merger risks to put on hold ongoing regional projects', for example the development of a CWE flow-based intraday capacity calculation methodology among others. • The 'prime focus in the merged region would be on developing a common flow-based day-ahead capacity calculation methodology'. ENTSO-E made the following requests to the Agency: • Deadlines included in the MoU are made binding in the Agency decision, which could include timelines for the additional methodologies that must be developed together with the development and implementation of the flow-based day-ahead capacity calculation methodology, for example the common methodology for countertrading and redispatching (and cost sharing). This would ensure a feasible and pragmatic approach towards the merger of the CCRs. • The legal and regulatory uncertainty referred to in the previous paragraph must be addressed in the Agency's final decision. • The TSOs invited concerned NRAs and the Agency to openly and commonly discuss and agree on 'what to do with the ongoing regional projects' and on 'a concrete action plan' for the implementation of the Agency's decision.	The Agency deems important to remind that the deadlines to submit the methodologies to NRAs' approval are explicitly defined in the CACM Regulation and it is not within the competences of the Agency to change them. The Agency however strongly encourages the TSOs and NRAs of the concerned region to quickly discuss and agree on the expectations regarding the level of details of the methodologies in order to reduce the potential regulatory uncertainty.

Respondents' views	ACER's views
• To address the concerns raised in the previous paragraphs in a 'legally enforceable way' in case the Agency proceeds with amending the all TSOs' proposal on capacity calculation regions by merging the CWE CCR and the CEE CCR into one CCR. Additional issues raised in ENTSO-E's response are summarised below: • All TSOs understood that the operative part of the Agency's Decision and any annexed determination of CCRs would be binding whereas any other annexes would be provided as non-binding justification. • All TSOs recommended that the Agency stresses in its decision the importance of considering critical third country borders in technically relevant processes. • All TSOs proposed to remove paragraph 2 in Article 11 of the all TSOs' proposal on capacity calculation regions because the interconnections are already in operation on the bidding zone borders 'LT-SE4' and 'LT-PL'. Paragraph 2 was included because the interconnectors were not in operation at the time of submission of the all TSOs' proposal on capacity calculation regions. • All TSOs informed the Agency that the 'Language waiver will be dealt with by individual TSOs who will provide the declaration individually where appropriate and in due time.' • All TSOs also provided corrections of an editorial nature, as the all TSOs' proposal on capacity calculation regions contained several typos and/or misspellings.	The binding nature of the Agency's Decision on CCRs follows from Article 288 TFEU. Annexes I, II, III, IV and V are an integral part of this Decision while Annex Ia is included for information and illustration only. A paragraph was added in the Decision to address the concern over critical third country borders. Paragraph 2 of Article 11 was removed.

Respondents' views	ACER's views
Amprion GmbH Response	
Amprion confirmed that it fully supports the approach advocated in the ENTSO-E response (summarised above) and highlighted the heterogeneity of the regulatory frameworks and market arrangements in the merged region, therefore making the development of methodologies within the timeframes provided in the CACM Regulation 'an impossible task for the involved TSOs'. In particular, Amprion views the development of a common intraday capacity calculation methodology no later than 10 months after the approval of the proposal for a capacity calculation region as an 'impossible obligation'.	See above.
TenneT Response (on behalf of TenneT TSO BV and TenneT TSO GmbH)	
TenneT confirmed that it supports the approach advocated in the ENTSO-E response (summarised above). In particular, it stressed that the all TSOs' proposal on capacity calculation regions is fully compliant with all the requirements of the CACM Regulation. TenneT highlighted that the current approach provides for a timely and successful definition of CCRs and that the Cooperation Agreement (referred to above in the ENTSO-E response) demonstrates the next step and a first result. It also highlighted TenneT's dedication to this process and follow-up procedure. TenneT also particularly welcomed the Agency's view that, to the extent necessary, some flexibility could be granted to the CWE-CEE TSOs, for	See the core Decision why the Agency considers that the All TSOs' Proposal is not compliant with Regulation.

Respondents' views	ACER's views
example to develop less detailed methodologies and/or to propose a step-wise implementation of the methodologies commonly developed at the Core region's level.	
Austrian Power Grid AG (APG) Response	
APG provided diverging comments from the 'joint response of all TSOs' by ENTSO-E (summarised above). These views are outlined in the following paragraphs. APG expressed its full support for the intended merger of the CWE and CEE CCR, for the following reasons: • From a technical point of view, the existing two regions consist of a highly meshed transmission grid and therefore this approach will ensure best compliance with the required common congestion management procedures. • It is important that the CWE and CEE TSOs together continue to develop one common flow-based capacity calculation concept (based on developments already made regionally). • Governance rules of the merged region will ensure that ongoing projects in the regions (for example, flow-based intraday capacity calculation) can continue to be implemented in a timely manner at the sub-regional level until flow-based market coupling is implemented and/or until these local projects can be extended to the whole merged region.	The Agency agrees.

Respondents' views	ACER's views
APG raised concerns with respect to the inclusion of the DE/LU-AT bidding zone border. In this respect, APG provided its legal and factual point of view, summarised below: Legal: • APG provided a semantic analysis of Article 15(2) of the CACM Regulation, whereby it insisted that the use of the word 'attributed' necessarily implies that only currently existing bidding zone borders may be included and assigned to a CCR.	The Agency disagrees that Article 15 of the CACM Regulation refers to existing bidding zone borders (see the core decision for further details).
• APG reiterated comments made in the previous consultations, that new bidding zone borders may only be implemented in the course of a procedure according to Article 32 *et seq.* of the CACM Regulation. APG considers the creation of new bidding zone borders in the course of an Article 15 procedure as 'circumventing' the specific procedure, as 'clearly contrary to the purpose and concept' of the CACM Regulation, and that the two procedures cannot be applied 'interchangeably'. Furthermore, APG considers that the Agency 'ignores' the in-depth assessment of the current bidding zone configurations according to Article 32 *et seq.* of the CACM Regulation which has been started by ENTSO-E, and is thus in violation of the binding procedural rules. APG requests that the Agency's decision is kept within the 'intended scope' and that it supports the bidding zone review as the basis for such 'fundamental changes.'	The Agency disagrees that the inclusion of new bidding-zone borders is outside the scope of Article 15 of the CACM Regulation and that Article 32 of the CACM Regulation is the exclusive path to introduce a new bidding zone border (see the core decision for further details). The Agency is of the view that its findings prove that the non-inclusion of the DE-AT border in the CCRs proposal would clearly go against Regulation (EC) No 714/2009 and the objectives of the CACM Regulation. The need for implementing a capacity allocation mechanism on the DE-AT border and therefore for including this border in the CCRs Proposal has been thoroughly assessed and discussed; this finding has received a favourable Opinion from the whole NRAs' community but one. Finally, the inclusion of new bidding zone borders in the CCRs Proposal does not undermine any bidding zone review process. Neither has any such process formally started yet, nor is its launch precluded by the aforementioned inclusion.
• APG stressed the importance of also taking into account the provision in point 1.7 of Annex I to Regulation (EC) No 714/2009. Based on the	According to the Agency's findings, the DE-AT interconnection is structurally congested and therefore requires the implementation of a capacity

Respondents' views	ACER's views
provision therein, APG thinks 'it is obvious that all guidelines referred to in Regulation (EC) No 714/2009 call for a thorough assessment of the actual need for congestion management and of the effects of this measure on the electricity market. It should be efficient with the lowest impact on the market'.	calculation procedure (on that interconnection) pursuant to Regulation (EC) No 714/2009. The implementation of a coordinated capacity allocation procedure on the DE-AT border addresses usual and structural congestion on that (congested) interconnection in accordance with Regulation (EC) No 713/2009, and is not designed to solve internal structural congestion elsewhere in the network.
• APG considers that Regulation (EC) No 714/2009 tasked TSOs with the assessment referred to in point 1.7 of Annex I to Regulation (EC) No 714/2009 and that furthermore, the CACM Regulation assigns the competence to assess the effects of new bidding zone borders on network security and on the market to TSOs. Therefore, 'a unilateral decision' by the Agency on the separation of the DE-AT bidding zone is contrary to point 1.7 of Annex I to Regulation (EC) No 714/2009.	Since the CCRs Proposal of all TSOs includes the DE-AT bidding zone, the Agency's competence entails the obligation to assess and decide whether this proposed inclusion is correct and lawful. Therefore, the Agency does not take a unilateral decision outside any relevant framework, but only accepts or rejects what all TSOs propose to implement. If the Agency accepts this proposal, the proposed implementation of a DE-AT bidding zone border is indeed a decision of the TSOs. Moreover, The implementation of coordinated capacity allocation procedure on the DE-AT border is not 'a unilateral decision' by the Agency but a requirement of Regulation (EC) No 714/2009 resulting from the fact that the DE-AT interconnection is structurally congested.
• APG highlighted the Commission Decision in the *Swedish Interconnectors* case[2], which it considers concluded that TSOs must not limit interconnection capacity in order to solve congestion inside their own control area. APG considers that the Agency, therefore, must provide evidence that implementing a congestion management mechanism on the DE-AT border is 'not deemed sufficient to solve	According to the Agency's findings, the DE-AT interconnection is structurally congested and therefore requires the implementation of a capacity calculation procedure (on that interconnection) pursuant to Regulation (EC) No 714/2009. The implementation of a coordinated capacity allocation procedure on the DE-AT border addresses usual and structural congestion on that (congested) interconnection in accordance with Regulation (EC) No 714/2009, and is not designed to solve internal structural congestion

[2] Case COMP/39351 – *Swedish Interconnectors*, Decision of 14 April 2010.

Respondents' views	ACER's views
congestion within the control area of a Member State'. • APG considers that the inclusion of the DE/LU-AT bidding zone border in the all TSOs' proposal on capacity calculation regions was 'primarily a reaction to the ACER Opinion' and that many TSOs and respective NRAs 'misinterpreted the opinion as a binding decision.' Factual: • APG highlighted that, to date, a thorough and adequate assessment on the inclusion of a new bidding zone border has not taken place, which is the reason a bidding zone review was initiated pursuant to Article 32 *et seq.* of the CACM Regulation. Furthermore, the draft Agency decision 'proposes a new German-Austrian bidding zone border without any thorough evaluation of necessity, alternatives and the far reaching consequences'. APG provided the following specific comments with respect to the Agency's Technical Justification Document: • APG considers it a fact that the Agency is not competent to investigate potential internal congestions. Therefore, by pointing out internal congestions in Austria, the Agency exceeds its competences. Furthermore, it considers the Agency's analysis as discriminatory since it neglects other potential or evident congestion in other Member States.	elsewhere in the network. The Agency fully acknowledges the non-binding character of its Opinion 09/2015. The Agency is, however, of the view that the findings in this Opinion, as well as the new ones in Annex IV to this Decision, prove that the non-inclusion of this border in the CCRs Proposal would clearly go against Regulation (EC) No 714/2009 and the objectives of the CACM Regulation. The need for implementing a capacity allocation mechanism on the DE-AT border and therefore for including this border in the CCRs Proposal has been thoroughly assessed and discussed; this finding has received a favourable Opinion from the whole NRAs' community but one. Section II of the Technical Justification Document does not claim that there exist internal congestions within Austria today. On the contrary, it merely assesses a maximum transfer capacity between Germany and Austria in a hypothetical situation when all the flows resulting from the DE-AT exchanges would actually be realised through the DE-AT border. E-Control and APG claim that the DE-AT border is not congested and the main proof to support this claim is according to them the fact that there is about 11000 MW of capacity on this border. While such a claim clearly ignores the fact that almost 60 % of electricity flows are realised through other

Respondents' views	ACER's views
	interconnections, which are structurally congested, Section 2 of the technical justification demonstrates that even in a scenario where all the flows resulting from DE-AT exchanges would actually be realised through the DE-AT border, this border would be able to accommodate far less electricity exchanges than the claimed 11000 MW.
• APG considers that the Agency is indirectly asking to shift potential internal congestion to the DE-AT border and this is in violation of EU law (as explained in a previous paragraph with respect to point 1.7 of Annex I to Regulation (EC) No 714/2009).	The implementation of a coordinated capacity allocation procedure on the DE-AT border does not necessarily imply that the cross-zonal capacities on this border should or will reflect the internal congestions in any of the involved bidding zones. In accordance with point 1.7 of Annex I to Regulation (EC) No 714/2009, the internal network elements may indeed temporally limit the capacities between bidding zones, but only when this is required due to operational security and when it is economically more efficient than other available measures.
• APG stressed that 'it is well known that the majority of intraday stops on this border are needed to ensure the effectivity of cross border re-dispatch measures to relieve congestion within Germany'.	Firstly, the Agency notes that the reasons for intraday stops are not transparently reported, in particular the name and location of the claimed congested network elements and the party requesting the intraday stop should be transparently published. Secondly, the Agency fails to understand why the intraday stops on the DE-AT border would be needed in case the congestion appears only within Germany. Namely, the stopping of intraday trade within Germany (from north to south) should actually be sufficient to solve congestion problems within Germany, such that any subsequent trade on the DE-AT border would not aggravate the congestion within Germany. Finally, the Agency understands that the intraday stops aim to prevent further aggravation of congestion, which has previously been solved with redispatching. However, the mere fact that in 58% of days the stopping of intraday trade on the DE-AT border does help to prevent the aggravation of congestion somewhere constitutes a sufficient additional reason to believe that this border is congested.

Respondents' views	ACER's views
• APG considers that the Agency 'neglects or spuriously justifies with improper arguments' evidently effective measures, those being the installation of the PSTs in Mikulowa, the temporary disconnection of the 220-kV-line Vierraden – Krajnik and the integration of the PSTs at the German-Czech Republic border scheduled for Q1 2017.	The Agency has provided solid reasons why it believes that the referred network developments do not render the DE-AT border as uncongested. On the other hand, APG did not provide arguments why it believes the Agency's justifications are spurious or improper.
• In general, APG considers the Agency's Technical Justification Document as providing very simplified investigations, lacking in depth technical and economical assessments and therefore inadequate to assess the necessity or the appropriateness of any congestion management measure.	The Agency considers the evidence provided by the Technical Justification Document as sufficient and adequate to conclude that the DE-AT border is structurally congested. In particular, the analysis based on the PTDF data is considered as a very thorough and undisputed assessment of the impact of the DE-AT border on structurally congested network elements.
Institut Luxembourgeois de Régulation (ILR) Response	
ILR made one remark, namely that the Luxembourg country is missing on the map in the all TSOs' proposal on capacity calculation regions.	The Agency agrees.
Urząd Regulacji Energetyki (URE) Response	
URE made one comment, that is to remove paragraph 2 in Article 11 in the all TSOs' proposal on capacity calculation regions, for the same reasons specified in ENTSO-E's response above (under additional issues).	The Agency agrees.
Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNetzA) Response	

Respondents' views	ACER's views
BNetzA's comments were specific to the Agency's Technical Justification Document and consisted of the following: • Internal network element Remptendorf–Redwitz is '(physically) congested' not 'structurally (physically) congested'. • Underlined that there are recent and planned network investments in Germany and Austria but unlike with internal congestion in DE, these investments will not suffice to render the DE-AT border congestion free.	The Agency's Opinion 09/2015 concludes that this network element is structurally (physically) congested. Furthermore, this network element is often cited as the most significantly congested network element within Germany (See for example the quarterly report from BNetzA (pp.15-16): http://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Energie/Unternehmen_Institutionen/Versorgungssicherheit/Stromnetze/System-_u_Netzsicherheit/Quartalsbericht_Q3_2015.pdf;jsessionid=1A1A9B16276E61EC24FEA71D9B27D1DA?__blob=publicationFile&v=5). The Agency cannot make such an assessment.
E-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft (E-Control) Response	
E-Control underlined its support for the merger of the CWE and CEE CCRs as they think it is the correct and necessary step towards the necessary level of coordination and the achievement of the Internal Energy Market. E-Control raised concerns with respect to the inclusion of the DE-AT bidding zone border, which are summarised in the following:	The Agency agrees.

Respondents' views	ACER's views
• E-Control recalled all its previous arguments against the ACER Opinion 09/2015 such as the appeal to the Board of Appeal (A-001-2015), the actions for annulment before the General Court (T-671/15 and T-63/16), the request for amendment to the all TSOs' proposal for CCRs, and the submitted comments on the draft Agency decision (20 July 2016 and 9 September 2016).	
• E-Control highlighted the letter from the European Commission dated 15 September 2016, which supported E-Control's interpretation, that the reconfiguration of existing bidding zone borders is governed by the bidding zone review procedure under Articles 32 to 34 in the CACM Regulation. It also recalled that other stakeholders expressed similar views to the European Commission and E-Control in the public consultation, which ended on 20 July 2016.	The Agency agrees that the bidding zone border should be considered as the main process to review the bidding zone configuration. But the Agency disagrees with the interpretation that the bidding zone review process is to be considered as the exclusive path (see the core decision for further details).
• E-Control considers the Agency's argument that other new bidding zone borders were included in the all TSOs' proposal for CCRs as unconvincing since those other borders do not have direct connections, and new infrastructure is planned and under construction.	The Agency notes that the fact that these borders currently do not have interconnections does not imply that these interconnections will require capacity allocation once they are constructed. Therefore, the decision to introduce the capacity allocation on newly constructed interconnections within the CCR decision is equivalent to a decision to introduce capacity allocation on the DE-AT border.
• E-Control considers the inclusion of the DE-AT bidding zone border in the definition of the CCRs as pre-empting an uncertain outcome of the ongoing bidding zone review, thereby influencing this process and any decisions/results. In addition, the inclusion of the bidding zone border gives the 'wrong signals' to market participants and 'adversely affects' the market.	In the Agency's views, the inclusion of new bidding zone borders in the CCRs Proposal does not undermine any bidding zone review process. Neither has any such process formally started yet, nor is its launch precluded by the aforementioned inclusion.

Respondents' views	ACER's views
• E-Control considers that the inclusion of the DE-AT bidding zone border in the CCR definition suggests that all potentially new bidding zone borders examined in the bidding zone review be assigned in the CCR decision process.	In contrast to the DE-AT border, the Agency does not have sufficient evidence that a coordinated capacity allocation is required on other bidding zone borders considered in the informal bidding zone review process.
• E-Control expressed its doubts that the Agency is conducting a fair and impartial consultation during the decision process, and referred to the ENTSO-E/FSR conference on 23 September 2016 in Bratislava as an example. It also cited Article 41 of the Charter of Fundamental Rights of the European Union.	The Agency strongly rejects this unsubstantiated allegation. Further, it is to be reminded that the Agency can issue decisions only after a favourable opinion by the required majority of its Board of Regulators members.
• E-Control expressed its disagreement with the Agency's technical justification document and considers that the Agency's decision should be based on current and future situations.	The Technical Justification Document provides an assessment of the referred network developments and provides argument why they do not change the Agency's conclusion that the DE-AT border is structurally congested and requires permanent capacity allocation procedure.
• E-Control recalled that a situation where physical flows do not follow the contractual paths is not unique in Europe, thus cannot be used as evidence when including new bidding zone borders.	In response to E-Control's letter, the Agency noted that on all EU borders, where a significant part of electricity exchanges are realised through other borders, a permanent capacity allocation procedure is implemented – the DE-AT border being the sole exception.
• E-Control made the Agency aware of information it received from APG which explained that scheduled imports from Germany to Austria exceeded the (n-1) secure capacities calculated for Germany-Austria (7259 MW) in the Agency's technical justification document in about 1% of the hours for day-ahead schedules and 0.1% for actually realised schedules in 2015 and the first half of 2016.	The Agency notes that the quoted value (7259 MW) in the Technical Justification Document is a hypothetical capacity in a situation where: a) all electricity exchanges on the DE–AT border would be realised through that border; and b) all interconnectors would be fully loaded before the first congestion would appear; As these assumptions do not match the reality, the given value can only be considered as a proxy of the transfer capacity between Germany and Austria.

Respondents' views	ACER's views
• E-Control considers the Agency's Technical Justification Document as discriminatory. In particular, the Agency illustrates that there may be insufficient HV capacities within Austria but does not provide similar analyses for other Members States and network areas.	E-Control has often claimed that the DE-AT border is not congested because there is about 11000 MW of physical capacities on the border, which is more than the maximum exchanges observed on this border. To dispute this claim, the Agency has indeed analysed what would be the actual capacity between Germany and Austria in case all the DE-AT electricity exchanges would be realised through this border.
• E-Control disagrees with the Agency's line of argumentation in the Agency's Technical Justification Document on intraday stops since these are actually used to ensure the effectiveness of redispatching actions, and therefore disagrees with the Agency's subsequent conclusion on the location of congestions. E-Control is of the view that in 'predominant number of hours when these stops are needed this is due to problems not at the German-Austrian border but at other places in the network (mainly within Germany).'	Firstly, the Agency notes that the reasons for intraday stops are not transparently reported, in particular the name and location of the claimed congested network element and the party requesting the intraday stop should be transparently published. Secondly, the Agency fails to understand why the intraday stops on the DE-AT border would be needed in case the congestion appears only within Germany. Namely, the stopping of intraday trade within Germany (from north to south) should actually be sufficient to solve congestion problems within Germany, such that any subsequent trade on the DE-AT border would not aggravate the congestion within Germany. Finally, the Agency understands that the intraday stops aim to prevent further aggravation of congestion, which has previously been solved with redispatching. However, the mere fact that 58% of days the stopping of intraday trade on the DE-AT border does help to prevent the aggravation of congestion somewhere, is a sufficient additional reason to believe that this border is congested.
• E-Control clarified that there are no longer-term reservations within a bidding zone. Furthermore, E-Control emphasised that this situation would be maintained or reinforced by establishing capacity allocation on the German-Austrian border (since capacities allocated for longer-term and day-ahead timeframes would prevail over capacities made available to the intraday timeframe). E-Control also clarified that there	The Agency agrees that the discrimination in this case is not very obvious and has corrected this part of the Technical Justification Document.

Respondents' views	ACER's views
is no discrimination between timeframes and that all market participants have the opportunity to trade in all the abovementioned timeframes.	

ACER
Agency for the Cooperation of Energy Regulators

Annex IV

Technical Justification document for the inclusion of the border between Germany/Luxembourg and Austria in the determination of CCRs

Following its Opinion No 09/2015[1], the Agency gathered, including through public consultation PC_2016_E_02, additional information about the presence of structural congestion on the DE-AT border.

Box 1: Definition of congestions

With regard to the meaning of 'congestion', reference is made to the relevant definitions in Regulation (EC) No 714/2009 and Commission Regulation (EU) 2015/1222 ('the CACM Regulation'):

- Article 2(2)(c) of Regulation (EC) No 714/2009 defines congestion as 'a situation in which an interconnection linking national transmission networks cannot accommodate all physical flows resulting from international trade requested by market participants, because of a lack of capacity of the interconnectors and/or the national transmission systems concerned';
- Article 2(18) of the CACM Regulation defines physical congestion as 'any network situation where forecasted or realised power flows violate the thermal limits of the elements of the grid, the voltage stability or the angle stability limits of the power system'; and
- Article 2(19) of the CACM Regulation defines structural congestion as 'congestion in the transmission system that can be unambiguously defined, is predictable, is geographically stable over time and is frequently reoccurring under normal power system conditions'.

The key reasoning to demonstrate the presence of structural congestion on the DE-AT border is based on the definition of congestions in both Regulation (EC) No 714/2009 and the CACM Regulation (see Box 1).

Indeed, according to these definitions, **an interconnection linking national transmission networks has to be considered as structurally congested when it cannot accommodate all physical flows resulting from international trade requested by market participants because these trade requests would result in physical flows over network elements which are structurally (physically) congested**. Or, in other words, **an interconnection linking national transmission networks has to be considered as structurally congested when it could host the relevant flows**

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1 http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2009-2015.pdf

only at the expense of network security violations or discriminatory access on network elements which are structurally (physically) congested.

Given these definitions, this Annex first updates (Section 1) the analysis made in the Agency's Opinion No 09/2015, which demonstrated the significant impact of the DE-AT exchanges on a number of network elements in the CEE region, which are **structurally congested**.

This assessment is completed by two analyses illustrating the presence of physical congestion problems on the DE-AT border. In the first one (Section 2), the Agency shows that the maximum transfer capacity between Germany/Luxembourg and the main part of Austria would not be able to accommodate all the DE-AT commercial exchanges, should the latter effectively flow physically through the DE-AT border. In the second one (Section 3), the Agency assesses the frequency of intraday trade limitations on the DE-AT border, which demonstrates that this border cannot frequently accommodate all the requests for trade.

1. The influence of the DE-AT exchanges on a number of network elements in the CWE and CEE regions which are structurally congested

The analysis performed in support of the Agency's Opinion No 09/2015 focused on how the DE-AT exchanges influence physical flow conditions on structurally (physically) congested network elements within the congested areas as defined in the Technical report on bidding zones[2] (see Opinion No 09/2015, p. 16).

Following its publication, this analysis was questioned by some stakeholders for relying on inadequate and arbitrary sample of network models, as well as for presenting only a partial picture on how the DE-AT exchanges influence physical flow conditions on other interconnectors in Continental Europe.

To advance the analysis performed for the preparation of the Opinion No 09/2015, the Agency asked the involved regulatory authorities, i.e. Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNetzA), Energetický regulační úřad (ERU), Urząd Regulacji Energetyki (URE) and Energie-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft (E-Control) for more detailed information on the Power Transfer Distribution Factor ('PTDF')[3] data, encompassing 50 randomly selected Day-Ahead Congestion Forecast Models, which represent 50 different hours within the year 2015. The Agency asked the regulatory authorities to provide the PTDF

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[2] Available here: https://www.entsoe.eu/Documents/MC%20documents/140123_Technical_Report_-_Bidding_Zones_Review__Process.pdf.

[3] PTDF is in general a calculated power flow on a given network element (or group of elements) that results from an electricity exchange between two network areas. See Agency's Opinion 09/2009 (p. 25-26) for details how it is calculated.

data on how the DE-AT exchanges influence flows on interconnectors within Central Europe as well as on three transmission lines within Germany (i.e. Vieselbach–Mecklar, Wolmirstedt–Helmstedt and Remptendorf–Redwitz). These network elements were reported in the Technical report on the bidding zone review process as structural congestions and other major physical congestions[4]. It is essential to note that, at least those network elements located on the interconnections where a permanent capacity allocation procedure has been implemented, have to be considered as structurally congested (i.e. the congestion on these network elements is predictable, geographically stable over time and frequently reoccurring under normal power system conditions)[5]. Furthermore, the Agency's Opinion No 09/2009 analyses the application of congestion-related redispatching actions within Germany (p. 18), which indicates that network elements located within Germany should be considered as structurally congested. For example, the quarterly report from BNetzA provides the information that, in the first quarter of 2015, the redispatching within Germany was required in 1433 hours to address the congestion problems on the network element Remptendorf – Redwitz.[6]

The involved regulatory authorities asked the relevant TSOs to calculate these data. The TSOs, in turn, delegated the task to TSCNET Services GmbH[7] in order to ensure consistent results. The data was provided by BNetzA, ERU, URE at the end of June 2016.

The results of the extended PTDF analysis are presented in Table 1. The Table shows the average and maximum cumulative PTDF values for structurally congested interconnections and network elements as mentioned above. These are grouped into congested areas 10, 11, 12, 16, 19 and 20, as defined in the Technical report on bidding zones (see also the Agency's Opinion No 09/2015, p. 17). In addition, the average and maximum cumulative PTDF values for the western German borders (DE>NL+FR+CH) and eastern German borders (DE>PL+CZ) are also presented.

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[4] The technical report on bidding zones reports solely on physical congestions. Therefore the structural congestions reported should be understood as structural (physical) congestions.

[5] Pursuant to point 1.2 of Annex I to Regulation (EC) No 714/2009, when there is no congestion, there shall be no restriction of access to the interconnection; where this is usually the case, there need be no permanent general allocation procedure for access to a cross-border transmission service.

[6] See (p. 15):
http://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Allgemeines/Bundesnetzagentur/Publikationen/Berichte/2015/Quartalsbericht2015.pdf;jsessionid=1A1A9B16276E61EC24FEA71D9B27D1DA?__blob=publicationFile&v=6.

[7] TSCNET Services GmbH is the service company of the TSOs which formed the Transmission System Operator Security Cooperation (TSC), i.e. 50Hertz (Germany), Amprion (Germany), APG (Austria), ČEPS (the Czech Republic), ELES (Slovenia), Energinet.dk (Denmark), HOPS (Croatia), MAVIR (Hungary), PSE (Poland), Swissgrid (Switzerland), TenneT (Germany), TenneT (The Netherlands), and TransnetBW (Germany). It coordinates the TSC's activities and renders integrated services for the TSOs and their control centres.

Table 1: Updated cumulative PTDF values for Congested Areas 10, 11, 12, 16, 19 and 20 as well as for eastern and western profiles (in percentage)

	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ	DE>AT	DE>NL+FR+CH
Average	-11.5	15.2	17.1	8.5	6.4	26.3	**38.7**	**41.2**	**20.1**
Maximum	-16.1	21.8	22.0	12.8	10.5	30.9	44.5	46.4	22.8
Standard deviation	2.8	2.1	3.3	1.9	2.4	2.9	3.1	2.8	1.6

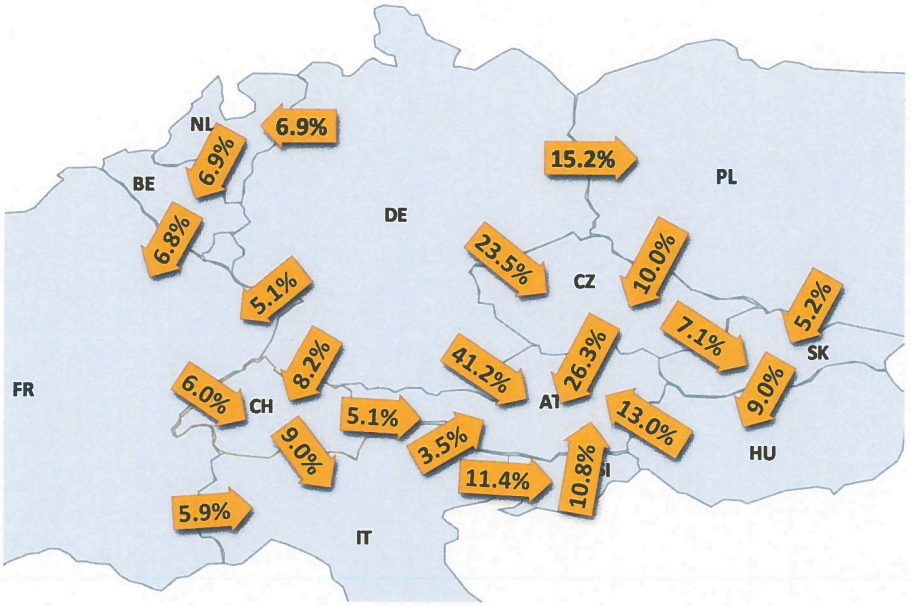
Source: URE, ERU and BNetzA (2016).

Note: Area 10: DE Internal: Vieselbach – Mecklar and Wolmirstedt – Helmstedt; Area 11: DE>PL border: Krajnik – Vierraden and Hagenwerder – Mikułowa; Area 12: DE>CZ border: Rohrsdorf – Hradec; Area 16: DE Internal: Remptendorf – Redwitz; Area 19: DE>CZ border: Etzenricht – Hradec and Etzenricht – Prestice; Area 20: CZ>AT border: Sokolnice – Bisamberg and Slavetice – Durnrohr; DE>PL+CZ: DE>PL + DE>CZ; DE>NL+FR+CH: DE>NL + DE>FR + DE>CH.

The results presented in Table 1 show that, on average, only 41.2% of the DE-AT exchanges are being physically realised through the DE-AT border, whereas 38.7% are being physically realised through the DE-PL and DE-CZ interconnections and 20.1% are being physically realised through the DE-NL, DE-FR and DE-CH interconnections. Subsequently on the Austrian side, the same flows are flowing back into Austria through the AT-CH, AT-IT, AT-SI, AT-HU and AT-CZ interconnections.

The result is also graphically presented in Figure 1 below. The Figure shows that commercial flows from Germany to Austria not only directly affect the DE-AT border, but significantly impact also other interconnections in Central Europe and three internal German network elements (albeit, only in the case of a network element Remptendorf–Redwitz, the DE-AT exchanges are aggravating the congestion, whereas on the other two the congestion is reduced by DE-AT exchanges). As those interconnections and the internal network element Remptendorf–Redwitz are considered as structurally (physically) congested, the significant impact of DE-AT exchanges on those network elements implies that the DE-AT interconnection is also structurally congested.

Figure 1: The distribution of physical flows resulting from commercial exchanges from Germany to Austria



Note 1: The sums of outgoing and incoming flows for Germany and Austria should be 100%, respectively, whereas the algebraic sums of incoming and outgoing flows for other countries should be 0.
Note 2: For some countries (i.e. FR, BE, CH, AT) the sum is not exactly 0 or 100 due to rounding effects, while for other countries (i.e. SI, HU, SK) the sum is not 0 because the incoming or outgoing flows through other borders are not presented on this figure.

These results confirm and reinforce the findings of the Opinion No 09/2015 and the conclusion that the commercial exchanges between Germany and Austria have a significant impact on the physical flow conditions on the interconnections within the CEE region, as well as within the CWE region and within Germany. On average, 58.8% of the physical flows resulting from the DE-AT exchanges are not realised through the DE-AT interconnection, but are flowing as loop flows[8] through other interconnections. In 2015 and the first half of 2016, the average commercial exchange on the DE-AT interconnection was 3189 MW, whereas the maximum of 7688 MW was reached on 10 January 2016[9]. Multiplying these exchanges by the average PTDF values results in 1234 MW (average) and 2975 MW (maximum) of loop flows flowing through the eastern DE-PL and DE-CZ interconnections and 641 MW (average) and 1545 MW (maximum) of loop flows flowing through the DE-NL, DE-FR and

[8] Loop flows are the physical flows caused by internal exchanges within a bidding zone that are flowing through other bidding zones.
[9] Source: Vulcanus (2015).

DE-CH interconnections. As shown in the Agency's Market Monitoring Report for 2015[10], pp. 167, 168, these loop flows result in a significant reduction of cross-zonal capacities on those interconnections, not only because of their volume, but also because of the uncertainty about their volumes. Because of the reliability margins to cover these uncertainties, the loss of cross-zonal capacity due to loop flows is approximately twice as high as the mere volume of loop flows (see the Market Monitoring Report for 2015, p. 167, 168 for details).

The Agency notes that the analysis based on PTDF data was performed on network models from 2015. These network models do not take into account some of the recent, current and possible future changes in the relevant network. Most notably, the following changes have often been quoted by stakeholders in their responses to public consultation PC_2016_E_02:

(a) start of the operation of the phase-shifting transformer (PST) in Mikulowa, which can be used to directly control the flows;
(b) temporary disconnection of the interconnector Vierraden-Krajnik between Poland and Germany;
(c) upcoming operation of the phase shifters at the Czech-German border;
(d) special switching of Hradec-Rohrsdorf transmission line to TenneT; and
(e) planned network investments in Germany and Austria.

The Agency would like to emphasize that these changes are not sufficient reasons to assume that the DE-AT border will not be structurally congested by the time when the decision on CRRs will effectively be implemented (i.e. by the implementation of capacity calculation methodologies pursuant to Article 20(2) of CACM Regulation which are expected to be implemented by 2018 or at the beginning of 2019 at the latest[11]). This is because:

(a) The existence of PSTs does not have a significant effect on the PTDF values in the sense that 100 MW of additional exchanges between Germany and Austria will still have largely the same impact on the physical flows on the DE-PL and DE-CZ borders[12]. Also, a PST can alter

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10 http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf

11 See CWE and CEE MoU on the development of a common CWE and CEE CCR's day-ahead flow-based capacity calculation methodology and the merger of the CEE and CWE CCR (p. 5) https://www.entsoe.eu/Documents/MC%20documents/20160215_MoU_CWE_CEE%20TSOs%20(final%20version%20signed).pdf.

12 The PTDF values are calculated assuming a constant phase angle of a PST. Thus, the PST has almost no effect on how the flows resulting from 100 MW of exchanges are distributed across the AC network. Nevertheless, some limited effect may be observed since a PST slightly increases the impedance of the transmission corridor (line + PST).

the physical flows on a given network element, but one cannot determine which physical flows (resulting from which exchanges) have been altered by a PST.

(b) The use of PSTs or the use of specific topological measures (e.g. special switching of Hradec-Rohrsdorf network element) to control the loop flows arising from internal exchanges should not be considered as an alternative to capacity allocation in the case of structural congestion problems. The PST devices may alter the physical flows on a congested network element, thus allowing for more exchanges; however, one still needs to determine which electricity exchanges can be increased as a result of using PSTs. If PSTs are used optimally, they have an excellent potential to increase cross-zonal capacities with the aim to maximise the social welfare. However, if PSTs are used to reduce the physical flows resulting from exchanges on the DE-AT border, but not the flows resulting from exchanges on other borders, their potential to increase cross-zonal capacities on other borders would be diminished and the social welfare would not be maximised. Such situation would not solve the existing problems of:
   (i) discrimination between electricity exchanges on different borders;
   (ii) free-riding of DE-AT electricity exchanges with regard to the use of the PST capabilities;
   (iii) loss of overall market efficiency;
   (iv) distortion of price signals as some electricity exchanges would need to pay for congestion costs while other would not.

(c) Removing the loop flows created by the DE-AT exchanges would require that the border between Germany and Austria is able to accommodate up to 7688 MW of physical flows, which is the maximum commercial exchange observed on this border up to June 2016. However, as shown in Section 2 of this Annex, the main part of Austria (which includes the vast majority of Austrian generation and load) is not able physically to import more than 3158 MW of electricity from Germany.

(d) According to the information available to the Agency, the disconnection of the interconnector Vierraden-Krajnik is temporary and cannot be considered as a permanent solution to manage congestion.

(e) The Agency cannot rely on future network development plans, whose effective implementation time is uncertain and will, most likely, deliver after the deadlines for the implementation of a coordinated capacity calculation method pursuant to Article 20(2) and Article 9(9) of CACM Regulation.

2. Assessment of the maximum transfer capacity of the DE-AT interconnection in the absence of loop flows

In response to the Agency's Opinion No 09/2015 and the public consultation on the capacity calculation regions (CCRs) Proposal, the Agency's analysis of congestion on the DE-AT interconnection has been questioned on the grounds that the DE-AT interconnection has about 11000 MW of thermal capacity and is therefore usually able, even in the absence of loop flows, to accommodate all the trade requests over this interconnection (a maximum commercial exchange of 7688 MW has been observed on the DE-AT border on 10 January 2016).

In what follows, the Agency presents an analysis of the actual maximum transfer capacity of the DE-AT interconnection taking into account the Austrian high voltage network configuration.

This analysis is based on data made publicly available by the Austrian TSO Austrian Power Grid AG (APG; www.apg.at) and by ENTSO-E.

Figure 2 below presents the Austrian high voltage network with all its interconnectors with neighbouring countries.

Figure 2: Map of the Austrian high voltage network and the location of the interconnectors

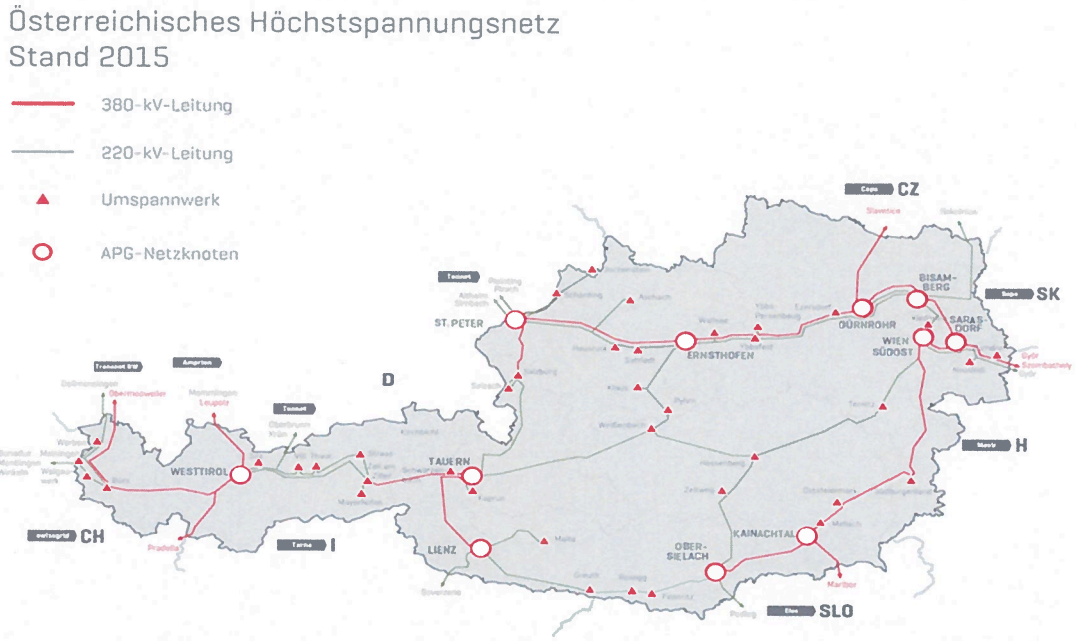


Table 2 summarises the information on interconnectors between Germany and Austria. The interconnectors below 220 kV voltage level are not included in this list since their contribution to transfer capacity is insignificant (i.e. their cumulative PTDF is below 1%).

Table 2: List of interconnectors on the DE-AT border

	Node 1	Node 2	Voltage level (kV)	Maximum active power (MW)	Source
1	St. Peter	Altheim	220	390	APG
2	St. Peter	Pirach	220	489	APG
3	St. Peter	Pleinting	220	489	APG
4	St. Peter	Simbach	220	390	APG
5	Westtirol	Leupolz	380	1496	APG
6	Westtirol	Memmingen	220	650	APG

7	Silz	Oberbrunn	220	724	ENTSO-E
8	Silz	Oberbrunn	220	724	ENTSO-E
9	Bürs	Obermooweiler	380	1300	ENTSO-E
10	Bürs	Obermooweiler	380	1300	ENTSO-E
11	Bürs	Herbertingen	220	370	ENTSO-E
12	Bürs	Dellmensingen	220	434	ENTSO-E
Total				**8755**	
Total (N-1)				**7259**	

The net transfer capacity between two network areas is calculated as the maximum electricity exchange at which the first network element affected by such exchange becomes congested (considering the N-1 criteria, i.e. in a situation of any possible contingency/outage). Assuming all the flows resulting from electricity exchanges between Germany and Austria were to be realised through the DE-AT border, the maximum electricity exchange between Germany and Austria, which does not yet cause congestion, would theoretically be 7259 MW (i.e. 8755 MW less the potential outage of the largest interconnection (i.e. 1496 MW)). Nevertheless, such calculation assumes that, at this level of electricity exchange, all the interconnectors (except the one considered out of service) would become congested. In reality, however, an electricity exchange causes different utilisation of network elements, which means that, at a certain level of electricity exchange, one of them would become congested whereas the capacity of other network elements would not be fully utilised. Furthermore, the first congestion may not appear on the interconnector, but on an internal network element.

To estimate accurately at which level of electricity exchange between Germany and Austria the first congestion would appear, a detailed analysis of the network situation involving a grid modelling would be needed. However, even without a proper grid modelling, the observation of the Austrian high voltage network configuration already allows the identification of network elements within Austria that would very likely become relevant when calculating the actual maximum transfer capacity between Germany and Austria in complete absence of loop flows. The Austrian network configuration shows that when Austria imports from Germany, the majority of imported electricity needs to flow into the main part of Austria, where the majority of load and generation is connected[13]. However the main part of Austria has a very weak connection with Germany and west Austria (West Tirol).

[13] This is, *inter alia*, evident from the PTDF data, which shows that interconnectors connected to the main part of Austria carry 80.4% of the flows resulting from DE-AT exchanges. However, this percentage should be complemented with the PTDF data for transmission lines from West Tirol to Zell, which may likely increase the percentage. When focusing only on the DE-AT interconnectors, 65% of the flows resulting from DE-AT exchanges and flowing through the DE-AT interconnection are being realised through four 220 kV

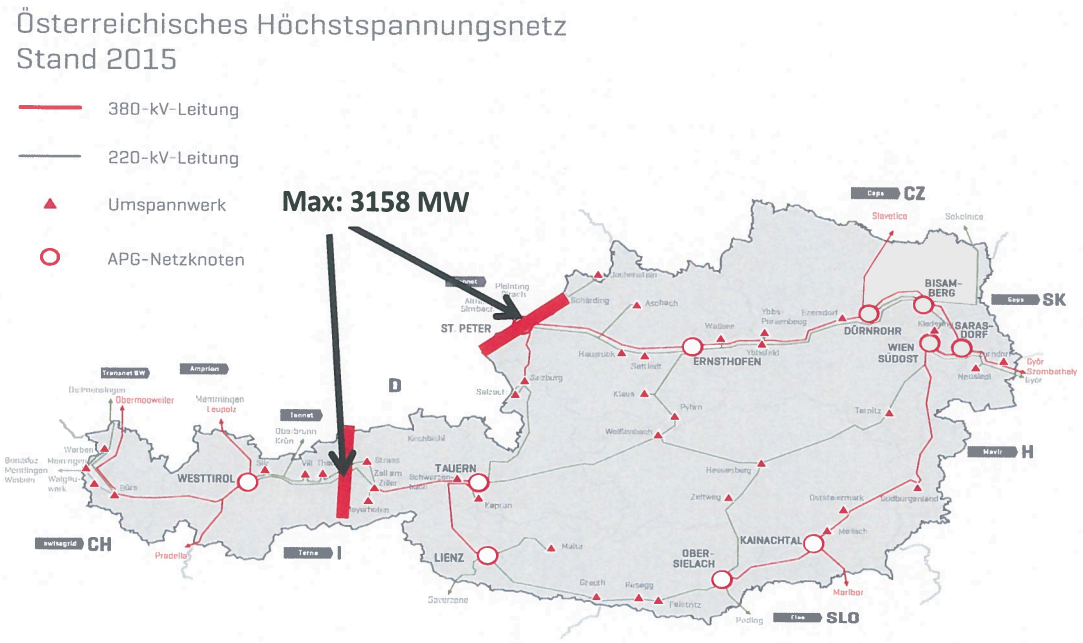
Table 3 lists the relevant interconnections and internal Austrian lines (whose location is outlined in Figure 3) that would very likely become relevant for assessing the actual maximum transfer capacity between Germany and Austria in complete absence of loop flows. These lines consist of the four 220 kV interconnector circuits connected through the St. Peter transformer station (already listed in Table 2) and four 220 kV internal circuits from the West Tirol transformer station to the Zell transformer station.

Table 3: Total transfer capacity between Germany and the main part of Austria

	Node 1	Node 2	Voltage level (kV)	Maximum active power (MW)	Source
1	St. Peter	Altheim	220	390	APG
2	St. Peter	Pirach	220	489	APG
3	St. Peter	Pleinting	220	489	APG
4	St. Peter	Simbach	220	390	APG
5	Westtirol	Zell	220	760	APG
6	Westtirol	Zell	220	760	APG
7	Strass	Thaur	220	320	APG
8	Strass	Thaur	220	320	APG
Total				**3918**	
Total (N-1)				**3158**	

Figure 3: The network elements between Germany and the main part of Austria amounting to a maximum transfer capacity between these two areas of 3158 MW

interconnectors connected to the main part of Austria (through St. Peter transformer station) even though these four interconnectors account for only 20% of capacity of all interconnectors (see Table 2). This suggests that indeed the vast majority of electricity imported from Germany flows into the main part of Austria.



The values provided in Table 3 show that, assuming a complete absence of loop flows, the main part of Austria would not be able to import more than 3158 MW (i.e. 3918 MW less the potential outage of the largest line (i.e. 760 MW)) of electricity from Germany.[14]

The Agency notes that, in 2015 and first half of 2016, the actual commercial DE-AT cross-border exchanges between Germany/ Luxembourg and Austria exceeded the value of 3158 MW 53% of the time.

3. Prohibition of trade between Germany and Austria

The DE-AT border is declared as without congestion by the involved TSOs on both sides of the border. This should imply that the trade between Germany and Austria is not limited in any way until the market closes. However, this is not the case in practice, since trade between Germany and Austria is frequently prohibited in the intraday market timeframe. The exact periods when trade between Germany and Austria is not allowed are published daily by the Austrian TSO APG[15].

[14] This is again based on the assumption that the exchange causes proportional utilisation of network elements such that all of them would become congested at the same level of exchange. An accurate estimation of the net transfer capacity on the DE-AT border would require a detailed grid modelling, able to take into account the reliability margin, the actual utilisation of network elements and the fact that a minor part of the exchanges on the DE-AT border is actually flowing into the west part of Austria.

[15] See https://www.apg.at/en/market/Markttransparenz/cross-border-exchange/REMIT

The information published by APG shows that, in the period between January 2015 and June 2016, trade between Germany and Austria in the intraday timeframe was not allowed 319 days out of 547 days (i.e. 58% of days). Hourly analysis shows that trade between Germany and Austria during the intraday timeframe was not allowed 4967 hours out of 13128 hours (i.e. 38% of hours). This indicates that, despite the fact that a significant part of the commercial flows on this border is physically flowing through neighbouring network elements and even though the border is declared by the involved TSOs as not congested, in 58% of days (or 38% of hours), there is not enough capacity on this border to accommodate all trade requests from market participants.

In the Agency's view, these above facts and findings further demonstrate that the border between Germany and Austria frequently cannot accommodate all the requests for trade over this border and should therefore be considered as structurally congested.

4. Conclusion

This Annex demonstrates that the interconnection between Germany and Austria is structurally congested because it significantly affects the structurally congested interconnections and network elements in other parts of the Central Europe.

This Annex further shows that, assuming that all DE-AT exchanges were physically to flow through the DE-AT border, 53% of the time, the maximum transfer capability between Germany and the main part of Austria would not be able physically to accommodate all the requests for DE-AT exchanges.

Finally, the presence of a structural congestion on the DE-AT border is also confirmed by the significant occurrence of intraday trade limitations on this border.

In the Agency's view, these facts and findings demonstrate that the border between Germany and Austria frequently cannot accommodate all the requests for trade over this border – or can host these flows only at the expense of network security violations or discriminatory access on other network elements and interconnections – and should therefore be considered as structurally congested.

Consequently, because of this structural congestion on the DE-AT interconnection, Regulation (EC) No 714/2009 requires that permanent capacity allocation be implemented on the border between Germany/Luxembourg and Austria.

ACER
Agency for the Cooperation of Energy Regulators

OPINION OF THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS No 09/2015

of 23 September 2015

ON THE COMPLIANCE OF NATIONAL REGULATORY AUTHORITIES' DECISIONS APPROVING THE METHODS OF ALLOCATION OF CROSS-BORDER TRANSMISSION CAPACITY IN THE CENTRAL-EAST EUROPE REGION WITH REGULATION (EC) No 714/2009 AND THE GUIDELINES ON THE MANAGEMENT AND ALLOCATION OF AVAILABLE TRANSFER CAPACITY OF INTERCONNECTIONS BETWEEN NATIONAL SYSTEMS CONTAINED IN ANNEX I THERETO

THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

HAVING REGARD to Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators[1] ("the Agency"), and, in particular, Article 7(4) and 17(3) thereof,

HAVING REGARD to the favourable opinion of the Board of Regulators of 16 September 2015, delivered pursuant to Article 15(1) of Regulation (EC) No 713/2009,

WHEREAS:

1. PROCEDURE

(1) On 2 December 2014, the Agency received a request from Urząd Regulacji Energetyki ("URE"), the National Regulatory Authority ("NRA") of Poland, for an opinion, pursuant to Article 7(4) of Regulation (EC) No 713/2009, on the compliance of the decisions of Agencija za energijo ("AGEN-RS"), the Slovenian NRA, No 141-4/2013-09/203 of 23 October 2013, of Energie-Control Austria ("E-Control"), the Austrian NRA, No V AUK 02/13 of 11 October 2013, of Magyar Energetikai és Közmű-szabályozási Hivatal ("MEKH"), the Hungarian NRA, No 2538/2014 of 12 August 2014 and No 2890/2014 of 4 November 2014, and of Úrad pre reguláciu sieťových odvetví ("ÚRSO"), the Slovakian NRA, No 0027/2014/E-PP of 22 August 2014, with Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003[2] and the Guidelines on the management and allocation of available transfer

[1] OJ L 211, 14.8.2009, p. 1.
[2] OJ L 211, 14.8.2009, p. 15.

capacity of interconnections between national systems (the "Guidelines") contained in Annex I thereto.

(2) By email of 5 December 2014, the Agency invited the NRAs of the Central-East Europe ("CEE") region countries, excluding Poland, i.e. Austria, the Czech Republic, Germany, Hungary, Slovakia and Slovenia, to send their written observations with regard to the request of the Polish NRA.

(3) The Agency received written comments from MEKH on 16 December 2014, from Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen ("BNetzA"), the German NRA, on 19 December 2014, from E-Control on 22 December 2014, and from Energetický regulační úřad ("ERO"), the Czech NRA, on 2 January 2015. AGEN-RS and ÚRSO did not reply.

(4) On 17 February 2015, the Agency requested from the Polish, Czech and German NRAs data on Power Transfer Distribution Factors ("PTDFs") for cross-border exchanges between Germany and Austria for specific network elements.

(5) The Agency received the following replies to its 17 February 2015 request: from the Polish NRA on 13 March 2015, updated on 27 March 2015, from the Czech NRA on 12 March 2015, updated on 24 March 2015, and from the German NRA on 10 April 2015.

(6) BNetzA and E-Control provided further written comments, respectively on 3, 12, 19 and 23 June 2015 and on 2, 19 and 23 June 2015.

2. THE REQUEST

(7) URE requests the Agency's opinion on whether the decisions of the Austrian, Hungarian Slovakian and Slovenian NRAs approving the methods of allocation of cross-border transmission capacity in the CEE region comply with the provisions of the Guidelines, as well as with the provisions of Regulation (EC) No 714/2009.

(8) URE's specific concern is that the decisions of the Austrian, Hungarian, Slovakian and Slovenian NRAs approve the methods of allocation of cross-border transmission capacity even though the methods themselves do not provide for a capacity allocation procedure for the German-Austrian ("DE-AT") border.

(9) URE considers that the absence of a capacity "*allocation procedure for cross-border capacity used for commercial transactions between Austria and Germany results in significant power flows through the transmission grid of neighbouring transmission system operators breaching network security standards and leading to the occurrence of*

structural congestion, if not on the specific German-Austrian border, at least on other parts of the CEE network".

(10) According to URE, the absence of a capacity allocation procedure on the DE-AT border reflects an overall insufficient coordination in the region. It leads to cross-border exchanges in the CEE region being treated in a discriminatory, non-market-based way, and it provides for inefficient economic signals to the involved market participants and to Transmission System Operators ("TSOs").

(11) On the basis of a legal and technical assessment, URE concludes that the methods for allocating cross-border transmission capacity currently applied by the TSOs in the CEE region and endorsed by the respective NRAs' decisions do not comply with Regulation (EC) No 714/2009 and with the provisions of its Guidelines. Accordingly, URE requests the Agency to provide an opinion on the compliance or the absence of it.

(12) The request is related to the ongoing administrative proceedings pending with URE and concerning the approval of allocation methods of cross-border transmission capacity.

3. THE DECISIONS AND COMMENTS OF THE NRAs CONCERNED

(13) The decision of the Slovenian NRA, No 141-4/2013-09/203 of 23 October 2013, accepts the Rules for Coordinated Auction of Transmission Capacity in the CEE Region.

(14) The decision of the Austrian NRA, No V AUK 02/13 of 11 October 2013, approves the Rules for Coordinated Auction of Transmission Capacity in the CEE Region. According to this decision, the Rules for Coordinated Auction of Transmission Capacity in the CEE Region were elaborated jointly by the TSOs of the CEE region and govern the allocation of cross-border transmission capacity for the following borders: Austria-Czech Republic ("AT-CZ"), Austria-Slovenia ("AT-SI"), Austria-Hungary ("AT-HU"), Czech Republic-Germany ("CZ-DE"), Czech Republic-Poland ("CZ-PL"), Slovakia-Poland ("SK-PL") and Slovakia-Hungary ("SK-HU").

(15) The decision of the Hungarian NRA, No 2538/2014 of 12 August 2014, approves the Rules for Coordinated Auction of Transmission Capacity in the CEE Region; its decision No 2890/2014 of 4 November 2014, approves an update of those rules.

(16) The decision of the Slovakian NRA, No 0027/2014/E-PP of 22 August 2014, approves the "regulations" of the Slovakian TSO. It does not explicitly refer to the Rules for Coordinated Auction of Transmission Capacity in the CEE Region.

(17) The German NRA considers that URE's request is inadmissible as it aims for an opinion on bidding zones configuration, a subject-matter of an already ongoing, more specific and comprehensive, process of early implementation of the bidding zones review in Europe. Therefore, URE would have no legal interest. Further, an Agency's opinion would affect and prejudice the early implementation of the bidding zones review and undermine the implementation of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (the "CACM Guideline")[3].

(18) BNetzA also considers URE's request to be unjustified as the arguments raised by URE are based on obsolete, incomplete and outdated data/studies. The fact that specific measures were taken to address the problem i.e. with the virtual Phase-Shifting Transformers (vPSTs), the TSO Security Cooperation (TSC) project and the planned installation of physical PST, is not taken into account.

(19) The Austrian NRA considers the fact-based reasoning provided by URE, emphasising the correlation between the schedules[4] on the DE-AT border and unscheduled flows[5] between Germany and Poland, as insufficient. According to E-Control, the statistics on occurrences and duration of security threats and security violations provided by URE, without analysing each case on its own, do not allow to establish a causal link with the schedules on the DE-AT border.

(20) Moreover, E-Control concludes that loop flows and unscheduled flows are inherent to a zonal market model and that there are no objective criteria determining to what extent such flows need to be tolerated.

(21) E-Control finds that there is sufficient evidence showing that the DE-AT border is not structurally congested and that capacity allocation procedures should only be applied in cases where no other cost-efficient and technically-effective measures are available. The mitigating measures (operational, through redispatching, or structural, through network investments) currently implemented or planned to be implemented by TSOs constitute an effective remedy to congestions in the CEE region.

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[3] OJ L 197, 25.7.2015, p. 24.

[4] A schedule, or also referred to as a cross-border exchange, is a declared flow resulting from a scheduling process, related to an electricity exchange between two different control areas and/or bidding zones. For a comprehensive description see p. 94 of the 2nd edition of the Market Monitoring Report (MMR), see: (http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202013.pdf).

[5] Unscheduled flows are the difference between schedules and physical flows. They are also the sum of unscheduled transit flows (UTF) and loop flows (LF) over a border – see also footnote 4.

(22) According to E-Control, the introduction of a capacity allocation procedure on the DE-AT border would not efficiently and effectively address the roots of the problem raised by URE and would only have a very limited positive impact on the security of the Polish grid.

(23) According to E-Control, the bidding zones review process, as described in the CACM Guideline, should be the appropriate tool to analyse bidding zones configurations and to propose a structural solution[6]. E-Control however considers that reconfiguring bidding zones by market splitting might constitute an infringement of the Treaty on the Functioning of the European Union (Articles 34, 35, 101 and 102 TFEU).

(24) The Czech NRA considers that URE's request for an Agency's opinion is fully compliant with Article 7(4) of Regulation (EC) No 713/2009. ERU supports URE's legal and technical assessment of the existing situation in the CEE region.

(25) The Hungarian NRA also supports URE's assessment.

4. ADMISSIBILITY

(26) Pursuant to Article 7(4) of Regulation (EC) No 713/2009, an NRA can request the Agency's opinion on whether a decision taken by a regulatory authority complies with the Guidelines referred to in Directive 2009/72/EC, Directive 2009/73/EC, Regulation (EC) No 714/2009 or Regulation (EC) No 715/2009 or with other relevant provisions of those Directives or Regulations. Article 7(4) does not make the admissibility of the request conditional upon whether or not the same or a related topic is also addressed under a different procedure, or upon whether or not the requesting NRA has a legal interest.

(27) URE's request addresses the Agency with a question on whether the NRAs' decisions attached to the request and approving the methods for allocating cross-border transmission capacity in the CEE region comply with the provisions of the Guidelines annexed to Regulation (EC) No 714/2009 and with the provisions of Regulation (EC) No 714/2009 itself. As such, this request is in line with the requirements of Article 7(4) and admissible. In addition, URE has indeed a specific legal interest in the Agency's opinion as it deems the opinion relevant for its decision in the proceedings addressed to URE which are still pending.

(28) Therefore, the Agency considers URE's request pursuant to Article 7(4) of Regulation (EC) No 713/2009 as admissible.

[6] In that respect, E-Control regrets that the current exercise undertaken by ENTSO-E still exhibits drawbacks and as such might not provide a proper basis for further conclusions.

ACER
Agency for the Cooperation of Energy Regulators

5. BACKGROUND

5.1 Bidding zones

(29) In Europe, wholesale electricity markets are structured in bidding zones, featuring equal prices within them. Within each bidding zone, any consumer is allowed to contract power with any generator without limitations and hence disregarding the physical reality of the transmission network. This simplification, which aims at facilitating trade within each bidding zone, is however often made at the expense of electricity trading between bidding zones. For the latter, TSOs indeed apply capacity allocation methods through which they, ex-ante and most of the time, limit the amount of the available cross-zonal capacity (i.e. net transmission capacities (NTCs)) to ensure that physical flows, including inside zones, remain within the network operational security limits[7,8].

(30) For historical reasons, the bidding zones' boundaries mostly correspond to the borders between EU Member States, even though some Member States (e.g. Italy and Sweden) are split into several bidding zones. However, in the CEE region, Austria and Germany constitute a single bidding zone and no capacity allocation is applied on the border between them.

5.2 Congestion

(31) Congestion between bidding zones materialises when there is more demand for capacity for cross-zonal trade than the available transmission capacity. As a result, wholesale electricity prices in two or more bidding zones deviate.

(32) The primary legal framework for dealing with congestion problems is Regulation (EC) No 714/2009, which associates the term "congestion" with a very specific situation. Article 2(2)(c) of Regulation (EC) No 714/2009 defines congestion as "a situation in which an interconnection linking national transmission networks cannot accommodate all physical flows resulting from international trade requested by market participants, because of a lack of capacity of the interconnectors and/or the national transmission systems concerned". Further, the Guidelines refer, in point 1.2, implicitly to congestions which occur usually

[7] In reality, the observed NTC values mostly do not reflect the physical capacities of interconnectors.

[8] The Agency notes that according to Regulation (EC) No 714/2009, a situation where capacity constraints inside zones are considered in cross-zonal capacity calculation and allocation may be tolerated only as a short-term solution. Namely, point 1.7 of the Guidelines on the Management and allocation of available transfer capacity of interconnections between national systems annexed to that Regulation specify that "*...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 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.*"

and, in point 1.4, explicitly to congestions which are structural, however without specifying the meaning of "usually" and "structural" in that context.

(33) In addition, the CACM Guideline, which supplements Annex I to Regulation (EC) No 714/2009, lays down a definition of structural congestion as well as of the equally-relevant term of physical congestion. Those definitions, which in the Agency's view reflect the common understanding of "structural congestion" and "physical congestion" applicable for the purpose of Regulation (EC) No 714/2009, provide that:

- Structural congestion is a congestion in the transmission system that can be unambiguously defined, is predictable, is geographically stable over time and is frequently reoccurring under normal power system conditions (Article 2(19) of the CACM Guideline);
- Physical congestion occurs when forecasted or realised power flows violate the thermal limits of the elements of the grid, the voltage stability or the angle stability limits of the power system (Article 2(18) of the CACM Guideline).

(34) According to the definition of congestion pursuant to Regulation (EC) No 714/2009, an interconnection linking national transmission networks cannot accommodate all physical flows resulting from international trade requested by market participants when these trade requests result in physical flows over network elements which are physically congested. Therefore, a situation may occur where the network elements on an interconnection are not physically congested, but where there is nonetheless congestion on the interconnection because international trade requests on this interconnection cause physical flows over physically congested network elements somewhere else in the network. By analogy, the interconnection is to be considered as *structurally* congested when it cannot accommodate all physical flows resulting from international trade requested by market participants, because these trade requests would result in physical flows over network elements which are structurally (physically) congested[9].

5.3 Unscheduled flows

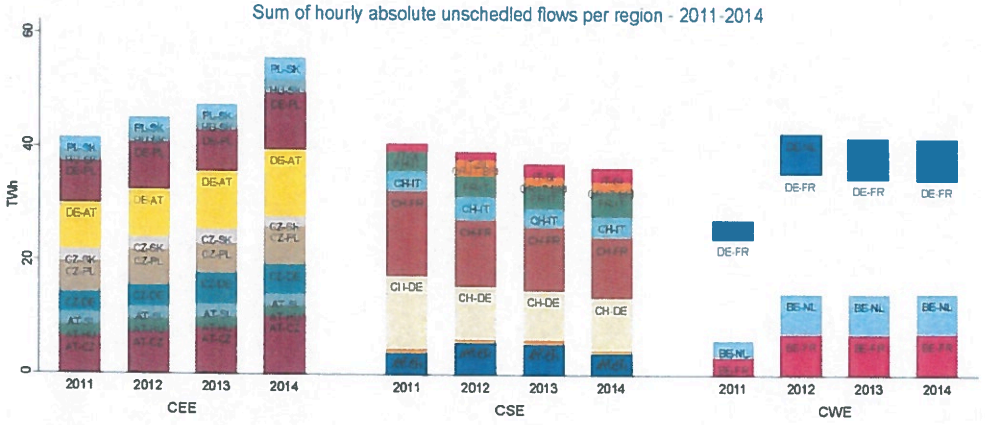
(35) Cross-border electricity exchanges over the interconnections need to be scheduled to TSOs on both sides of these interconnections. Nevertheless, physical electricity flows on the interconnections usually do not match the scheduled flows and the difference between the

[9] While the legal definition refers to interconnections linking national transmission networks, the Agency understands that its principle is equally applicable to any border between two network areas as referred to in point 1.7 of the Guidelines. Thus, such border would be considered as structurally congested when it cannot accommodate all physical flows resulting from the trade requested by market participants, because these trade requests would result in physical flows over network elements which are structurally (physically) congested.

two is called Unscheduled Flows ("UFs")[10]. They arise from the fact that electricity flows do not necessarily follow contractual paths.

(36) Figure 1 shows the volume of UFs[11] in different parts of Central Europe and compares them with UFs in other EU regions. It shows, in particular, that the absolute levels of UFs in the CEE region are the largest across the Central-South ("CSE"), Central-West ("CWE") and the CEE regions[12].

Figure 1: Sum of hourly absolute UFs per border in the CEE, CSE and CWE regions – 2011 to 2014 (TWh)



Source: Vulcanus (2015) and ACER calculations.

Note: The unscheduled flows are calculated with an hourly frequency; the absolute values are then summed across the hours and aggregated for borders belonging to the relevant regions. Furthermore, each pair of country codes in the bar reads as "from – to", e.g. PL-SK reads as flows from Poland to Slovakia.

[10] There are two origins of UFs. The first origin is the electricity exchanges inside a bidding zone, which are partly realised through other bidding zones. These are called Loop Flows ("LFs"). The second source are the electricity exchanges across bidding zone borders where capacity allocation is not coordinated with the capacity allocation on bidding zone border where the unscheduled flow is observed. These are called Unscheduled Transit Flows ("UTFs"). While LFs are inherent to a zonal market design and depend on the configuration of bidding zones and physical properties of the network, UTFs can be avoided with coordinated capacity allocation such as flow-based market coupling. The UFs may, depending on their magnitude, have an impact on the overall market efficiency and network security.

[11] Since its establishment, the Agency has been monitoring the development of unscheduled flows in Central Europe in the framework of its annual MMRs activity, see:
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202013.pdf, p. 93 to 109 and
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2014.pdf, p. 147 to 162.

[12] The number of borders in a region differs as shown in Figure 1 and this may affect the level of UFs reported per region. More borders in a region implicitly mean smaller bidding zones and lower levels of UFs. On the other hand, more borders may also imply higher levels of UFs as it could sum the 'same' UFs across borders in a region, which results in double counting.

(37) UFs pose a challenge for TSOs. First, as TSOs cannot control UFs with capacity allocation, they tend to reduce the capacity available for cross-border trade in order to ensure that the total physical flow on some network elements remains within security limits. This reduction in cross-border capacities usually leads to a loss of social welfare, which corresponds to the foregone social welfare with respect to the situation in which this cross-border capacity were available for cross-border trade (see Figure 3).

(38) Second, due to UFs, TSOs have to continue applying (more) remedial actions (bearing higher costs) in order to ensure secure grid operation in the TSOs' own networks, i.e. control areas, while transporting 'foreign' electricity flows. This impacts network security and efficiency of the market in general, and may induce significant re-dispatching, counter-trading and curtailment costs.

(39) As highlighted by the Agency since 2012[13], these UFs significantly impact both the market efficiency and the security of the network, in particular in the CEE region. The most noticeable (direct and indirect) impacts of UFs on the market efficiency and network security are:

(a) An overall lack of progress since 2006 in the implementation of the target model in the CEE region, mainly due to a disagreement between the concerned parties regarding the best way to handle these UFs;
(b) A significant reduction in cross-border capacities, in particular on the German-Polish border (see Figure 2), due to the reservation of physical capacity of transmission lines on some borders for transporting electricity (physical flows) as a result of cross-border trade on other borders (UTFs) or of electricity exchanges within foreign bidding zones (LFs)[14], and an associated increase in the estimated loss of social welfare;
(c) The occurrence of N-1 violations on the Polish network due to UFs (see Figure 4)[15]; and
(d) The presence of several structural congestions in the CEE network (see Figure 5).

5.4 Impact of Unscheduled Flows on NTC and social welfare

(40) Table 1 presents the annual average of hourly NTC values for the period 2011 to 2014 (in MWs and as percentage variations between 2011 and 2014) for the CEE, CSE and CWE regions. In 2014, 13 out of 20 borders (each MS border has two directions of trade) in the CEE region recorded decreasing NTC values whereas in 2013 this occurred in 9 out of 20 borders. The changes in the cross-border capacities available for trade can be associated with the increasing levels of UFs. There are however many factors affecting NTC values

[13] See footnote 11.
[14] See footnote 4 for the definitions of UTFs and LFs.
[15] The information on N-1 violations and the underlying cause is provided by the respective NRAs/TSOs.

and it would require a more extensive analysis to assess to what extent UFs reduce NTC values for each border.

Table 1: Annual average NTC values by border in the CEE, CSE and CWE regions – 2011 to 2014 (MW and the 2011-2014 percentage variation)

CEE					
Border	2011	2012	2013	2014	2014/2011
AT>CZ	748	851	663	620	-17%
AT>HU	749	766	519	514	-31%
AT>SI	857	930	771	685	-20%
CZ+PL>DE1	1,170	1,300	1,261	1,361	16%
CZ>AT	774	768	559	586	-24%
CZ>DE2	1,266	1,380	1,558	1,361	8%
CZ>PL	600	600	600	600	0%
CZ>SK	1,714	1,615	1,634	1,672	-2%
PLin	197	28	65	3	-99%
DE1>CZ+PL	563	601	666	661	17%
DE2>CZ	563	601	666	661	17%
HU>AT	783	775	598	599	-24%
HU>SK	766	527	796	761	-1%
PL>CZ	568	588	606	633	11%
PLout	1,277	1,316	1,273	809	-37%
PL>SK	517	509	533	504	-3%
SI>AT	901	951	883	946	5%
SK>CZ	1,192	1,200	1,197	1,187	0%
SK>HU	1,181	1,132	1,140	1,096	-7%
SK>PL	460	457	484	463	1%
CSE					
AT>CH	311	455	514	612	97%
AT>IT	171	174	230	217	27%

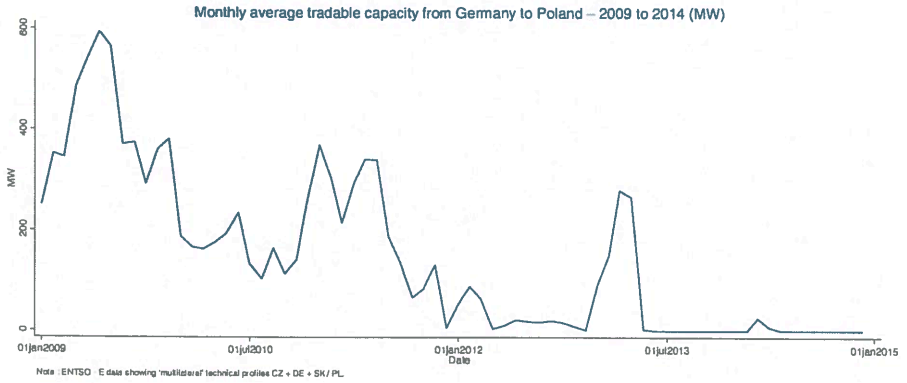
CSE					
Border	2011	2012	2013	2014	2014/2011
CH>AT	1,197	1,190	1,193	1,193	0%
CH>DE	3,933	3,989	4,000	4,000	2%
CH>FR	1,103	1,101	1,103	1,108	0%
CH>IT	3,034	2,819	2,766	2,549	-16%
DE>CH	1,097	891	966	1,094	0%
FR>CH	3,116	3,114	3,068	3,093	-1%
FR>IT	1,926	1,849	1,989	2,267	18%
GR>IT	311	462	295	224	-28%
IT>AT	79	85	102	96	22%
IT>CH	1,709	1,718	1,722	1,717	0%
IT>FR	1,019	1,020	1,020	1,021	0%
IT>GR	311	464	294	224	-28%
IT>SI	153	153	153	649	324%
SI>IT	484	463	442	488	1%
CWE					
BE>FR	1,420	1,645	1,456	1,361	-4%
BE>NL	1,370	1,321	1,359	1,336	-2%
DE>FR	2,593	2,596	2,556	2,472	-5%
DE>NL	2,313	2,270	2,218	2,231	-4%
FR>BE	2,880	2,899	2,580	2,321	-19%
FR>DE	2,116	1,795	1,785	1,798	-15%
NL>BE	1,370	1,333	1,341	1,240	-9%
NL>DE	2,292	2,308	2,290	2,257	-2%

Source: CAO Central Allocation Office GmbH (2015), ENTSO-E (2015) and ACER calculations.

Note: DE1 = 50HzT, DE2 = TennetDE. PLout = PL>DE+CZ+SK, PLin = DE+CZ+SK>PL. PLin represents the maximum potential tradable capacity from Germany to Poland. Annual average values are calculated on the basis of hourly data. When ENTSO-E is referenced as a data source for the figures in this Opinion, the ENTSO-E data was retrieved through Energy Market Observatory (EMOS).

(41) The Polish TSO confirmed that UFs were reducing the cross-border trading capacity made available on the DE-PL border. Figure 2 shows that the monthly average tradable capacity from Germany to Poland over the last five years. It illustrates that this tradable capacity has been declining since 2009 and has settled at around 0 since mid-2013[16,17].

Figure 2: Monthly average tradable capacity from Germany to Poland – 2009 to 2014 (MW)



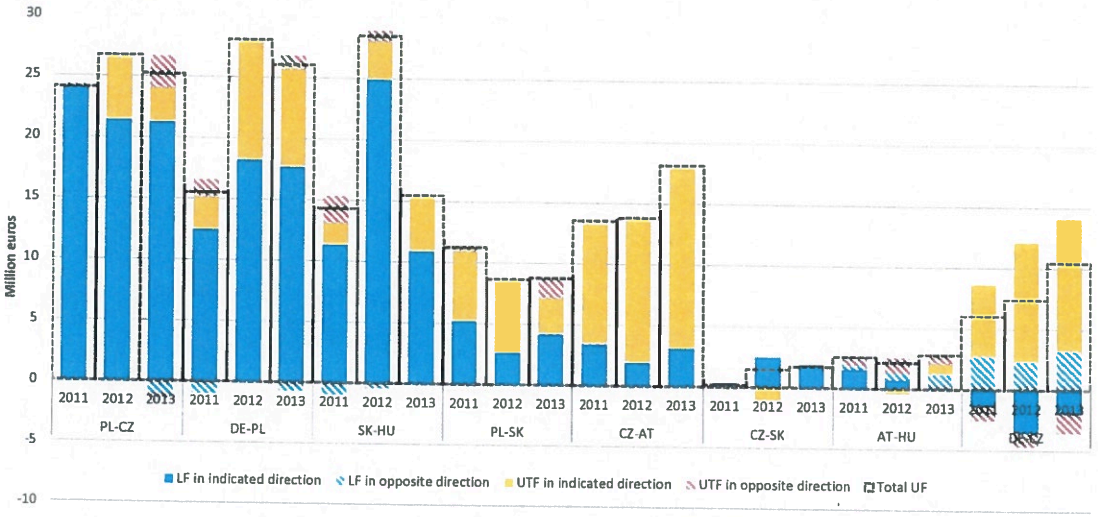
Source: ENTSO-E (2015) and ACER calculations.

Note: The presented values in the Figure are monthly averages of PLin, as defined in the Note to Table 1.

(42) Figure 3 shows the welfare loss in the CEE region due to UFs, subdivided in UTFs and LFs. In 2013, the total UF-based welfare losses reached 469 million euro and showed an increase of 1.6% compared to 2012, and of 44.7% compared to 2011. The total losses on the borders in the CEE region amounted to 87.5, 116.7, and 108.6 million euro, respectively, in 2011, 2012 and 2013. These should be considered conservative estimates based only on the welfare losses at the borders. They do not represent the total welfare losses resulting from suboptimal bidding zone configuration. Such an estimate could only be made by conducting a comprehensive review of bidding zones.

[16] The punctual increase in the values observed in 2013 can be attributed to the pilot project on virtual Phase Shifting Transformers (see further below).
[17] In 2014, this border recorded a tradable capacity equal to 0 for 8,536 hours.

Figure 3: The estimated loss of social welfare due to unscheduled flows in the CEE region – 2011 to 2013 (million euros)



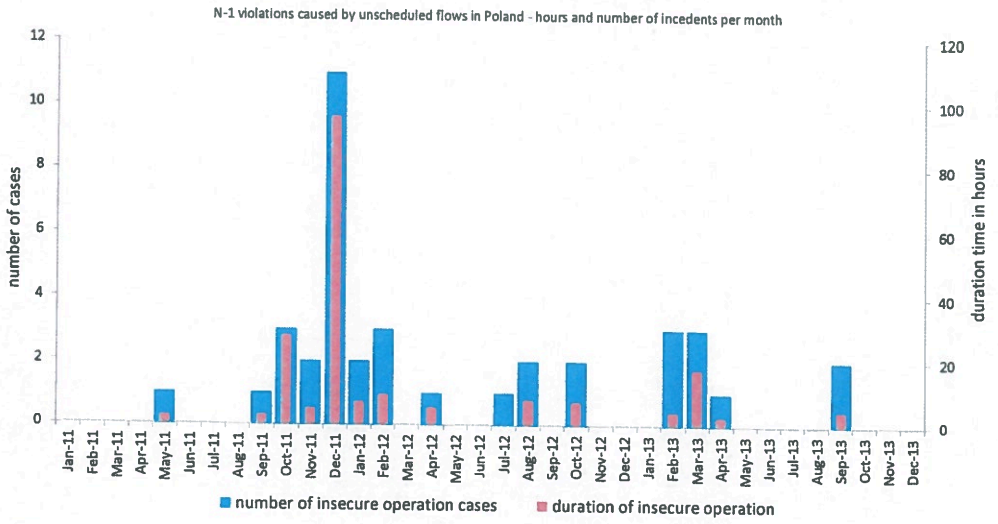
Source: ENTSO-E, Vulcanus, EMOS (2014) and ACER calculations.

Note: The German-Austrian border is omitted, as Austria and Germany form a single bidding zone and have one common price reference. The German-Czech border uses one aggregated value of flows not resulting from capacity allocation for both of its interconnectors. LFs and UTFs then partially offset one another in volumes and thereby the presented result cannot be meaningfully interpreted. Data for 2014 is not available.

5.5 Network security

(43) The increasing amount of UFs endangers network security. One way of measuring this is through the observation of N-1 violations. The number of N-1 violations in the Polish network and their duration are shown in Figure 4. The number of N-1 violations during real time diminished after the end of 2011. This may suggest that remedial measures were applied by the Polish TSO (possibly in coordination with other TSOs) in the planning phase to prevent N-1 violations or during the operational phase (e.g. with redispatching).

Figure 4: Number and duration of N-1 violations in the Polish network due to unscheduled flows – 2011 to 2013



Source: URE (2014).

Note: The N-1 violations presented in this Figure are provided by NRAs and were reported to be caused by unscheduled flows. Moreover, it shows only N-1 violations which occurred in real time, i.e. N-1 violations during the planning stage are not included.

(44) In March 2012, an ENTSO-E briefing paper on interconnected system operation conditions in Continental Central Europe[18] alerted the European Commission on the severity of the situation, in particular in the CEE region, and on the threats that such a situation could imply for network security:

(a) *"Recent developments in the electricity sector have significantly affected system operation conditions on the Continent, especially in central-European countries. Some TSOs increasingly face a situation in which operational measures, to keep the system in normal operational conditions, are exhausted. Due to characteristics of the synchronous system, this potentially threatens the security in the wider areas and ultimately the need to use emergency measures such as load shedding with direct impact on consumers."*

(b) *"The current power production from RES especially from wind generation in Northern Germany, Denmark, and North Sea and Baltic Sea regions is physically transported by the German internal grid and also in large extent by parallel flows via transmission systems of neighbouring countries to the Southern parts of Germany, to the Alps or*

[18] See: https://www.entsoe.eu/fileadmin/user_upload/_library/news/Briefing_paper_to_EC/120416_Briefing_Paper_TO_EC_ENTSO-E_assessemnt_interconnected_system_operation_in_CCE.pdf#search=briefing%20paper%20interconnection.

even the Southern parts of the Continent. The limited predictability of these large flows has on occasion caused non-compliance with fundamental grid operational security criteria in parts of the Central Continental European region. Transmission lines overloading or (n-1) violations in parts of the network which endanger the network have been increasingly reported by TSOs."

(c) *"On several borders the difference between physical and scheduled flows is of such magnitude that they are often in opposite directions. This is observed more than 90% of the time on PL/DE border, more than 90% on PL/CZ and more than 80% on PL/SK border. Heavy 'unplanned' transit flows added to scheduled flows cause severe loading on southern interconnectors (PL/CZ, PL/SK, DE/CZ, and also SK/HU and SK/UA) and lead to noncompliance with fundamental network security criteria."*

(d) *"[...] the security risks observed today are the culmination of the deterioration of the overall system that can be observed by the gradual limitation of the Net Transfer Capacities (NTC) between these countries over recent years. NTC limits have traditionally been one of the tools TSOs utilize under current market rules to manage the increased magnitude of unforeseen physical flows. Clearly this tool is used only when necessary but is nowadays increasingly used due to increased volumes of unforeseen generation intermittency restricting commercially available capacity for market parties."*

(e) *"The definition of bidding areas whose borders reflect structural congestions on the grid may also help to solve the issue of unplanned transit-flows. [...] the Central-East Europe region is identified as one where a re-thinking of existing bidding areas in the context of the forthcoming implementation of the market target model by 2014 might be a useful exercise."*

(45) This alarming situation triggered a series of initiatives aiming to limit or address the impact of UFs in the CEE region, among which:

(a) The 50Hertz-PSE's vPSTs pilot project running from January to April 2013, which sought an agreement on the use of remedial actions to limit UFs on the interconnection between the Polish and German electricity systems, to maintain safe operation of these systems and to ensure the availability of cross-border capacities between Germany and Poland of at least 500 MW[19]. In February 2014, a similar vPST agreement was concluded and should remain operational until physical PSTs are installed[20]. All the related costs are shared by the TSOs according to their role (causing or being affected by cross-border power flows). 50Hertz shares its costs with TenneT, another German TSO, and APG, the Austrian TSO;

[19] See: http://www.50hertz.com/en/file/20121222_PM_Phasenschieber_EN.pdf.

[20] Nevertheless, the NTC values on German-Polish border have returned to zero, since according to the polish TSO the experience has shown that the available remedial actions are not sufficient to guarantee a non-zero NTC value.

(b) The Agency's invitation to ENTSO-E, in August 2012, to initiate an earlier bidding-zone reconfiguration process;
(c) The Florence Forum's invitation to the Agency and ENTSO-E, in May 2012, to identify an appropriate regulatory framework for cross-border redispatching, including cost-sharing arrangements;
(d) The joint declaration of the CEE NRAs and the Agency, in March 2012, confirming their will to implement two elements of the target model – i.e. flow-based capacity calculation and day-ahead market coupling – in one single step;
(e) The progressive strengthening of formal cooperation among TSOs (through the TSC initiative), enabling TSOs from Central Europe to jointly analyse operational security and activate remedial actions; and
(f) The planned reinforcement of the network, through - in particular - the installation of physical PSTs on several borders of the CEE region; and, more recently, the CEE TSOs' initiative to investigate the effects of the implementation of Flow-Based Market Coupling ("FBMC") with the current bidding zones and the possible options to alleviate the observed risks through security (Security Oriented Option ("SOO"))[21] and/or financial means (Financial Oriented Option).

6. ASSESSMENT

(46) In the previous chapter, background facts have been presented with regard to UFs. This chapter aims at assessing whether the DE-AT interconnection is congested within the meaning of Regulation (EC) No 714/2009. The assessment of congestion on the DE-AT interconnection is structured as follows. Section 6.1 identifies structural congestions within the CEE region, which may lead to the need for limiting the DE-AT cross-border exchanges. Section 6.2 provides an in-depth assessment of the relative importance of the DE-AT cross-border exchanges in the CEE region and their impact on the identified structural congestions. Section 6.3 then presents a legal assessment of the lack of capacity allocation procedure on the DE-AT border.

6.1 Structural congestions in the CEE region

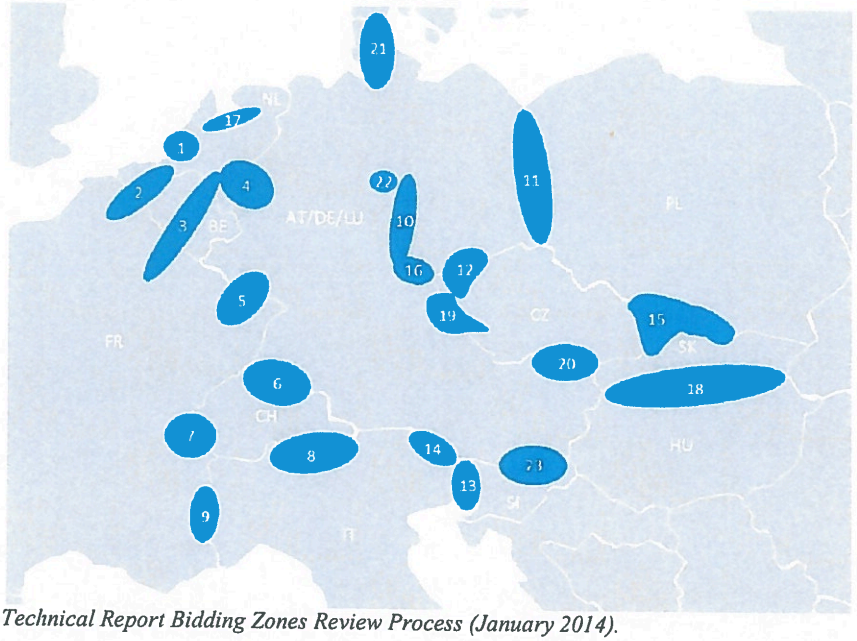
(47) The identification of structural congestions in this Opinion relies on the analysis performed by ENTSO-E for the first Technical Report for the currently ongoing review of the bidding-zone configuration[22], published in January 2014, as part of the early implementation of the CACM Guideline. Section 2.3 of that Report addresses the requirements of Article 34(2)(a)

[21] It is worth emphasizing that the SOO solution considers limiting the flows between Austria and Germany.

[22] See: https://www.entsoe.eu/news-events/events/Documents/140123_Technical_Report_-_Bidding_Zones_Review_Process%20(2).pdf#search=technical%20report%20on%20bidding%20zones.

of the CACM Guideline on the publication of the location and frequency of structural congestions (i.e. congestions which are unambiguously defined, predictable, geographically stable over time and frequently reoccurring under normal power system conditions)[23] and of major physical congestions. Figure 5 shows areas with structural congestions and major physical congestions as reported in the Technical Report[24].

Figure 5: Overview of areas with structural congestions and major physical congestions in Continental Europe – 2011 and 2012



Source: ENTSO-E, Technical Report Bidding Zones Review Process (January 2014).

Note: The original title to this figure is "Critical/Congested network element clusters: Planning phase (D-1 and D-2 in 2011 and 2012)".

(48) In ENTSO-E's Technical Report, several congested areas are identified in the CEE region, namely the congested areas No. 10, 11, 12, 15, 16, 18, 19, 20, 22 and 23. These congested areas, and the related congested network elements, are further specified in Table 2.

[23] Article 2(19) of the CACM Guideline.

[24] The Agency notes that the technical report suffers from non-harmonised reporting of these congestions and the lack of clarity on how the definition of structural congestion has been applied in this case. For example, the Agency doubts that structural congestions within a bidding zone exist only in Germany. The reported congestions should therefore be understood as structural congestions based on the opinion of TSOs as well as on their individual approaches to transparency.

Table 2: Reported congested network elements and reasons for congestions – 2011 and 2012

Congested area No.	Congested network elements	Reason for congestions
10	380 kV line Vieselbach (DE) – Mecklar (DE) 380 kV line Wolmirstedt (DE) – Helmstedt (DE)	Not reported
11	220 kV line Krajnik (PL) – Vierraden (DE) (double) 380 kV line Hagenwerder (DE) – Mikułowa (PL) 400 kV line Mikułowa (PL) – Czarna (PL) 400/220 kV transformers in Mikułowa (PL) 220 kV line Mikułowa (PL) – Świebodzice (PL) 220 kV line Mikułowa (PL) – Cieplice (PL) AT2 400 MVA autotransformer in Krajnik (PL)	High physical flows from 50Hertz to PSE correlated with periods of high generation in the 50Hertz area.
12, 19	Not explicitly specified	High level of physical respectively unscheduled flows from the 50Hertz area to the CEPS area over this border in cases of high transit (respectively loop) flows from north(west) to south(east).
15	220 kV line Liskovec (CZ) – Povazska Bystrica (SK) 400 kV line Nosovice (CZ) – Varin (SK) 220 kV line Kopanina (PL) – Liskovec (CZ) 220 kV line Bujaków (PL) – Liskovec (CZ) 400 kV line Wielopole (PL) – Nosovice (CZ) 400 kV line Iskrzynia (PL) – Lemieszany (SK)	Unscheduled flows and loop flows from the common AT/DE/LU bidding zone.
16	380 kV line Remptendorf (DE) – Redwitz (DE) 380 kV line Vieselbach (DE) - Mecklar (DE)	Not reported.
18	Not explicitly specified	Large and volatile RES feed from the northern part of Germany and the high level of import position in the southern CEE area (APG and MAVIR).
20	380 kV line Slavetice (CZ) – Dürnrohr (AT) (double) 220kV line Sokolnice (CZ) – Bisamberg (AT)	High level of physical resp. unscheduled flows from north to south due to high production in the north of Europe and high load in the south (Hungary, Balkan, Austria and Italy).
22	220 kV line Lehrte (DE) – Mehrum (DE)	Local generation/load patterns
23	220 kV line Obersielach (AT) – Podlog (SI)	Generation/load situation near the border line and import of the Balkan and Italian area.

Source: ENTSO-E (2014).

(49) The Agency notes that many network elements reported in Table 2 are interconnectors where permanent capacity allocation is currently implemented. Since permanent capacity allocation should not be applied on interconnections which are not usually or structurally congested, these interconnectors should be considered as suffering from structural congestions and not just from major physical congestions.

(50) Table 3 presents statistics on the application of redispatching within Germany from April 2013 to 19 June 2015.

Table 3: Application of congestion-related redispatching within Germany

The origin of the request for redispatching	Number of days (out of 809)	Redispatching volume (GWh)
TenneT DE	615	4,375.8
50Hertz & TenneT DE	266	3,969.2
50Hertz	202	2,024.1
50Hertz & PSE	160	472.9
Other (only within Germany)	64	269.1
Other (on the border or outside Germany)	44	100.5
Total (only within Germany)	652	10638.2

Source: http://www.netztransparenz.de/de/

(51) Table 3 shows that congestion-related redispatching activated at the request of German TSOs only (which indicates a congestion problem within or between German TSO areas) was applied in 652 days (out of 809 days considered in the sample). Most of the redispatching was requested by TenneT Germany alone or in combination with 50HzT. Data on redispatching, presented in Table 3, imply that there are severe structural congestions within Germany.

6.2 The DE-AT cross-border exchanges and the congestions in the CEE region

(52) This section illustrates the relative importance of the DE-AT cross-border exchanges in the CEE region (Section 6.2.1) and assesses their impact on structural congestions in the CEE region, based on the correlation analysis (Section 6.2.2), the discrepancies between cross-border exchanges and physical flows on the DE-AT border (Section 6.2.3) and Power Transfer Distribution Factors (PTDFs) (Section 6.2.4).

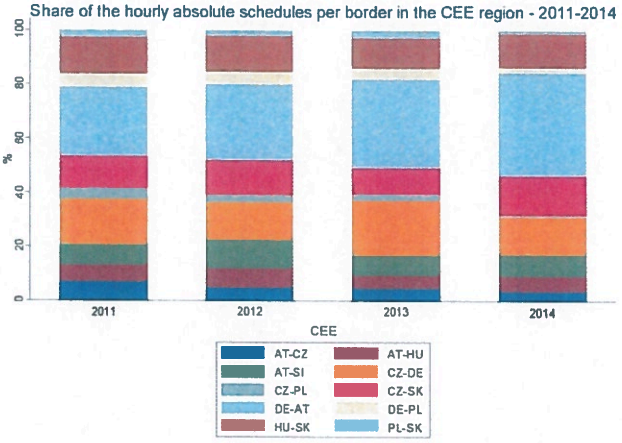
6.2.1 Importance of the DE-AT cross-border trade in the CEE region

(53) The single Austrian-German bidding zone (shown geographically in Figure 5) is – in terms of consumption and trade – by far the largest zone in the CEE region. In fact, the total annual power consumption of Austria and Germany was 542.4 TWh in 2013, representing 65.5% of the total annual consumption of the CEE region. Further, Epex Spot, which operates the German-Austrian spot market, reported 262.9 TWh traded on the German-Austrian day-ahead market[25], whereas EEX power derivatives reported 1,337 TWh traded on the German-Austrian derivatives market[26] in 2014.

[25] See: https://www.epexspot.com/en/press-media/press/details/press/_2014_power_trading_volumes_grow_by_10_4_.
[26] See: http://www.eex.com/blob/83274/321821b768f2ba9c8f923baca2b83d5c/e-eex-markets-and-products-2015-data.pdf.

(54) The DE-AT cross-border exchanges, which have been increasing since 2011, represent the highest volume of cross-border exchanges observed in the CEE region. In 2011 and 2014, the cross-border exchanges on the DE-AT border represented 26% and 40% of all cross-border exchanges observed in the region respectively, as illustrated in Figure 6.

Figure 6: Share of the hourly absolute schedules per border in the CEE region – 2011 to 2014 (percentage)



Source: Vulcanus (2015) and ACER calculations.

Note: Each border is defined by the country code in the legend, which reads as flows "from – to", e.g. AT-CZ reads as flows from Austria to the Czech Republic. Unless otherwise indicated in the text, 'schedules' presented throughout the document are the 'realised schedules', i.e. after intraday trading.

(55) The distribution of the hourly cross-border exchanges between Germany and Austria shows a wide range of values each year since 2011, as presented in Table 4, and is persistently the largest in the CEE region. For instance, in 2014, the hourly observed DE-AT cross-border exchanges ranged from -3,379 (Min) to 7,126 (Max) MWh, a range 3.3 times higher than the average range across all the CEE region's borders[27].

[27] High trade is a desired outcome of market integration provided that it contributes to the overall market efficiency.

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Table 4: Annual hourly averages, standard deviations, minimum and maximum values of cross-border exchanges in the CEE region – 2011 to 2014 (MWh)

Border	Average				Standard deviation				Min				Max			
	2011	*2012*	*2013*	*2014*	*2011*	*2012*	*2013*	*2014*	*2011*	*2012*	*2013*	*2014*	*2011*	*2012*	*2013*	*2014*
AT>CZ	-429	-326	-286	-164	232	249	212	228	-1,315	-1,298	-850	-1,050	663	712	703	879
AT>HU	149	456	116	348	447	312	346	237	-800	-992	-800	-595	800	810	800	800
AT>SI	422	752	331	481	394	239	436	295	-890	-826	-950	-950	917	952	1,352	1,359
CZ>DE	1,068	982	1,322	793	595	604	580	822	-749	-1,067	-727	-1,400	2998	2,923	2,705	4,866
CZ>PL	-235	-170	-149	-17	222	191	213	82	-770	-750	-900	-674	405	400	785	205
CZ>SK	732	926	584	959	471	387	449	488	-870	-614	-877	-1026	1,896	1,896	2,859	1,908
DE>AT	1,385	1,994	1,789	2,440	1,502	1,189	1,860	1,695	-2,916	-1,649	-3,995	-3,379	5,850	6,209	6,861	7,126
DE>PL	-284	-309	-241	-92	244	270	273	215	-1,240	-1,219	-1,400	-1,600	805	300	900	795
HU>SK	-890	-958	-726	-812	266	264	338	322	-1,300	-1,300	-2,200	-1,100	526	182	790	733
PL>SK	142	136	152	-27	155	151	192	118	-195	-200	-345	-365	600	600	585	520

Source: Vulcanus (2015) and ACER calculations.

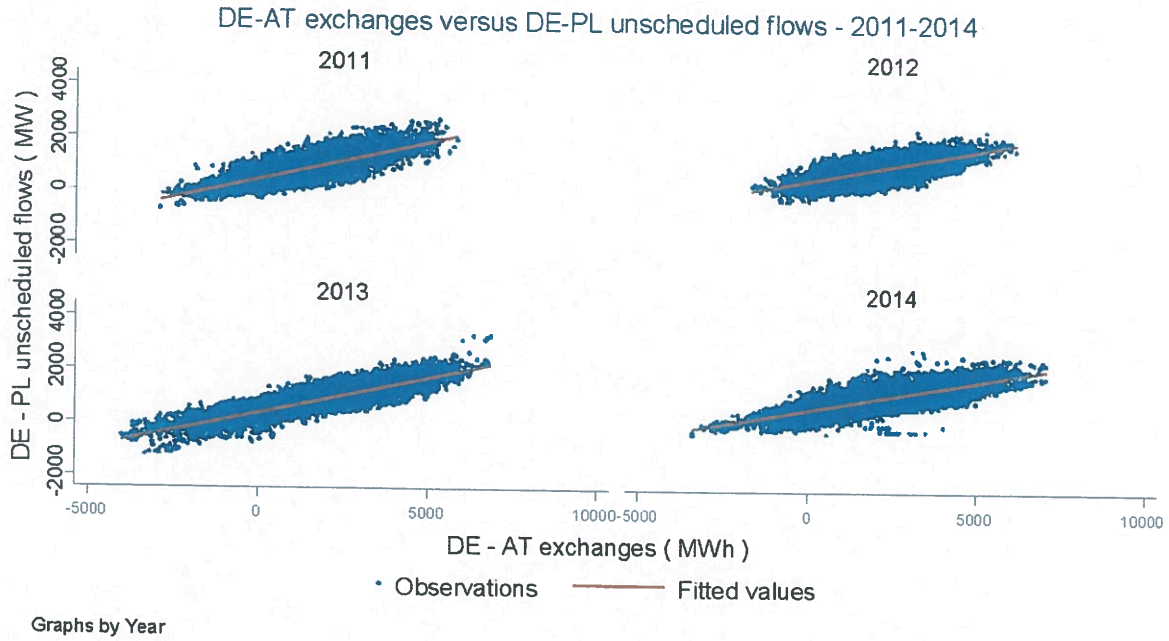
6.2.2 Correlation between DE-AT cross-border exchanges and unscheduled flows in the CEE region

(56) The extent to which the DE-AT cross-border exchanges interrelate with UFs can be described by their statistical correlation[28].

(57) Figure 7 shows the relation between cross-border exchanges on the DE-AT border and UFs on the DE-PL border. Table 5 shows that in 2011, 2012, 2013 and 2014, the (Pearson) correlation coefficient reached 82%, 69%, 88% and 87% respectively. These results are not only statistically significant, but also show to be persistent over the period under consideration.

[28] Correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. A positive correlation indicates the extent to which those variables increase or decrease in parallel and a negative correlation indicates the extent to which one variable increases as the other decreases. Absolute correlation values of 60% or higher are considered to be meaningful.

Figure 7: Relation between hourly cross-border exchanges on the DE-AT border and hourly unscheduled flows on the DE-PL border – 2011 to 2014 (MWh)



Source: Vulcanus (2015) and ACER calculations.

(58) In addition to the DE-PL border, Table 5 presents correlations between cross-border exchanges on the DE-AT border and UFs on the borders in the CWE, CEE and CSE regions. For instance, the table shows, in the first row, the correlation between cross-border exchanges from Germany to Austria and the UFs on the border from Austria to Slovenia in 2011; this correlation is equal to -72%.

(59) The results presented in the table show that the most correlated borders lie in the CEE region. For some borders (i.e. AT-CZ, CZ-PL, HU-SK, DE-AT and DE-PL), the correlation is, in absolute value, above 60% for the four years in question. These network components are part of or related to the congested areas indicated with numbers 20 (i.e. AT-CZ), 15 (i.e. CZ-PL), 18 (i.e. HU-SK) and 11 (i.e. DE-PL) in Figure 5. Surprisingly, the DE-CZ border is not within this group of borders, since the correlation in 2012 was below 60%. This could be explained by the fact that physical flows on the border are netted for all interconnectors, whereas in reality the actual physical flows (and consequently the UFs) on individual interconnectors can be much higher than the netted physical flows.

Table 5: Correlation between scheduled cross-border DE-AT exchanges and unscheduled flows on a selection of borders in the CWE, CEE and CSE regions – 2011 to 2014

Border	2011	2012	2013	2014	Border	2011	2012	2013	2014
AT->SI	-0.72	-0.38	-0.63	-0.44	DE->AT	-0.87	-0.67	-0.87	-0.84
FR->IT	0.00	-0.21	-0.17	-0.14	CH->FR	-0.20	0.05	-0.04	-0.28
AT->CH	-0.24	-0.02	-0.28	-0.30	DE->FR	-0.04	-0.14	-0.24	-0.28
BE->FR	0.28	-0.03	0.23	0.54	PL->SK	0.73	0.31	0.79	0.63
AT->CZ	-0.89	-0.77	-0.88	-0.89	AT->HU	-0.69	-0.52	-0.74	-0.55
BE->NL	-0.27	0.03	-0.23	-0.54	CH->IT	0.21	0.32	0.37	0.27
CZ->PL	-0.73	-0.60	-0.78	-0.71	DE->NL	0.27	-0.04	0.23	0.54
HU->SK	-0.68	-0.60	-0.66	-0.55	AT->IT	-0.15	-0.30	-0.39	-0.35
CH->DE	-0.12	-0.27	-0.31	0.00	CZ->DE	-0.71	-0.51	-0.68	-0.68
CZ->SK	0.50	0.47	0.43	0.27	DE->PL	0.82	0.69	0.88	0.79
IT->SI	0.41	0.12	0.25	0.13					

Source: Vulcanus (2015) and ACER calculations.

(60) The correlation analysis suggests a strong (and statistically significant) correlation between the DE-AT cross-border exchanges and UFs on specific borders in the CEE region.

(61) The next two subsections (Sections 6.2.3 and 6.2.4) provide additional evidence regarding the impact of the DE-AT cross-border exchanges on physical flows and congestion problems on the reported structurally congested network elements.

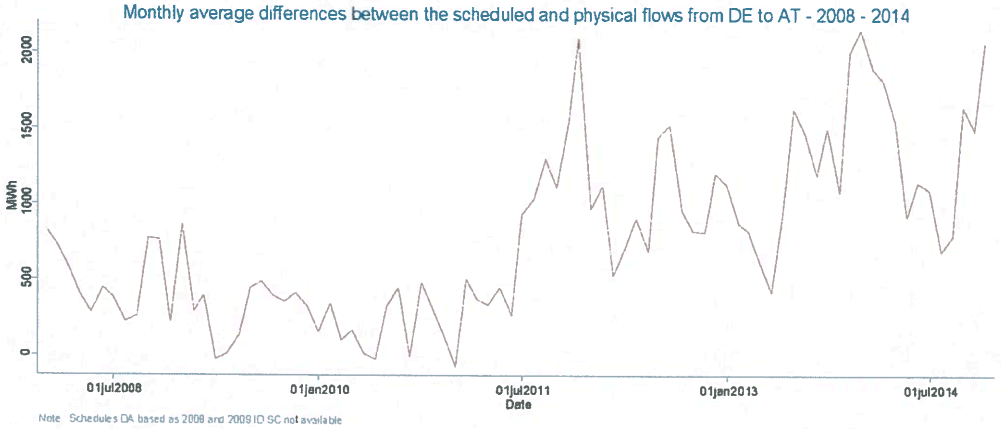
6.2.3 Discrepancy between the cross-border exchanges and the physical flows on the DE-AT border

(62) This section provides a comparison of the level of physical flows and the level of cross-border exchanges on the DE-AT border as a basis for an assessment of how much of the DE-AT cross-border exchanges are being physically realised through the DE-AT interconnection and how much through other interconnections[29].

(63) Since July 2011, the physical flows and the cross-border exchanges on the DE-AT border have diverged significantly. Figure 8 shows the monthly average difference, though it is worth mentioning that - for example - hourly values can be quite volatile and hence exceed average values significantly.

[29] This analysis has the following limitations. The measured physical flows are not a result of the DE-AT cross-border exchanges only. Other cross-border and internal exchanges can cause physical flows on the DE-AT border. Thus, the actual percentage of the DE-AT cross-border exchanges realised through other interconnections may differ from the values calculated in this section.

Figure 8: Discrepancy between the monthly average scheduled and physical flows on the DE-AT border – 2008 to 2014 (MWh)



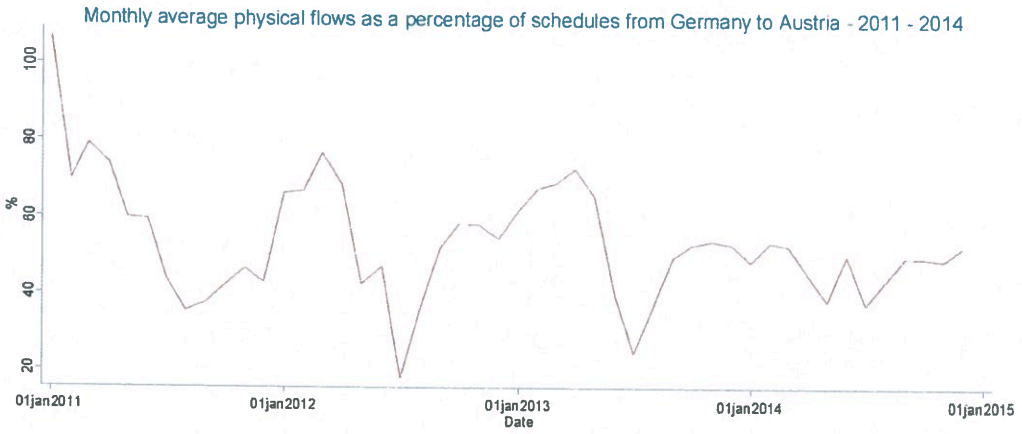
Source: Vulcanus (2015) and ACER calculations.

Note: For this Figure, day-ahead cross-border exchanges instead of intra-day cross-border exchanges have been considered, as the latter are not available prior to 2011.

(64) Figure 9 shows the monthly averages of the physical flows on the DE-AT border as a percentage of the corresponding monthly averages of the cross-border exchanges from Germany to Austria. Between 2011 and 2014 this percentage ranged from 17.9% to 106.9%[30]. Figure 9 shows that a significant amount of cross-border exchanges on the DE-AT border was often physically flowing through networks in neighbouring countries in the CEE and CWE regions.

[30] Values higher than 100% mean that the physical flow on the border exceeds the cross-border exchange on that border. Percentage value is calculated as the sum of all physical flows divided by the sum of all cross-border exchanges for those hours where the DE-AT cross-border exchanges were positive. The observations with the DE-AT cross-border exchanges close to zero or negative are not included in this analysis as in these cases the percentage values tend to reach extreme values and cannot be interpreted in any meaningful way.

Figure 9: Monthly average physical flows as a percentage of schedules from Germany to Austria – 2011 to 2014 (percentage)



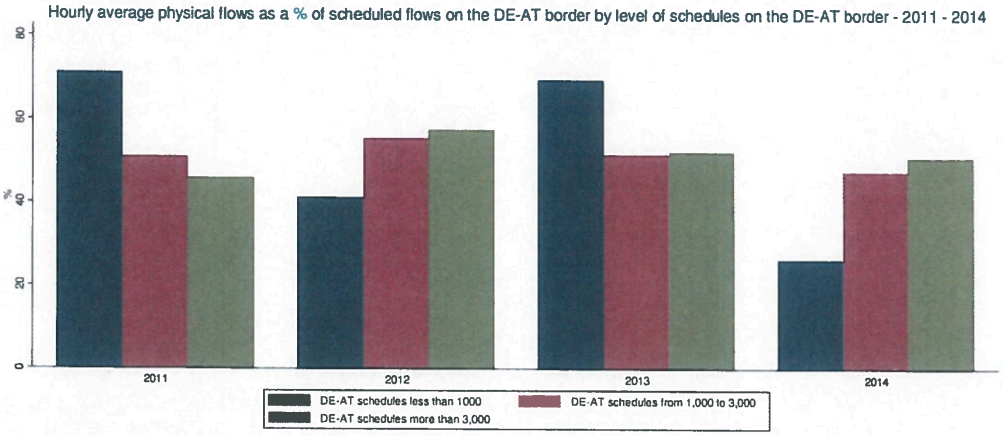
Source: Vulcanus (2015) and ACER calculations.

Note: Only schedules from Germany to Austria, i.e. positive values, are included.

(65) Figure 10 shows the same percentage as in Figure 9, however averaged for different groups of hourly cross-border exchanges on the DE-AT border. For example, in 2014 during hours when cross-border exchanges from Germany to Austria exceeded 3,000 MW, physical flows on this border accounted for only 50.8% of the DE-AT cross-border exchanges. These percentages vary between the observed years and the groups of DE-AT cross-border exchange levels[31]. Interestingly, Figure 10 does not show a clear relationship between the level of cross-border exchanges and the discrepancy between physical flows and cross-border exchanges (expressed as a percentage).

[31] The group with DE-AT cross-border exchanges between 0 and 1,000 MW has the largest variations, because when cross-border exchanges are low or close to 0, the physical flow can often flow in the opposite direction.

Figure 10: Hourly average physical flows as a percentage of scheduled flows on the DE-AT border by level of schedules on the DE-AT border – 2011 to 2014 (percentage)



Source: Vulcanus (2015) and ACER calculations.

Note: Included are schedules from Germany to Austria, i.e. positive values only.

(66) From 2011 to 2014, on average, only 51.8% of the DE-AT cross-border exchanges were actually physically flowing through the DE-AT border. Based on these findings, it can be concluded that a significant proportion (i.e. 48.2% on average between 2011 and 2014) of cross-border exchanges from Germany to Austria were being realised through neighbouring CEE and CWE networks. Nevertheless, this analysis does not show the extent to which the 48.2% of physical flows are realised through specific borders and structurally congested elements in the CEE region. For this assessment, a more dedicated analysis focusing on specific hours and involving concrete common grid models is required.

6.2.4 Power Transfer Distribution Factors

(67) According to the CACM Guideline, a PTDF represents the physical flow on a critical network element induced by a variation of the net position of a bidding zone[32]. To calculate how the cross-border exchanges from Germany to Austria influence the flow on a network element of interest, one can calculate the respective PTDF values for Germany and Austria and take the difference between these two values. A simpler approach to calculate this influence is to use a common grid model and to calculate the physical flow on the network

[32] Article 2(22) of Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council, OJ L 163, 15.6.2013, p. 1.

element in question first. The net position of Germany in the model is then increased by 100 MW and the net position of Austria decreased by 100 MW, which effectively represents a cross-border exchange of 100 MW between Germany and Austria, and the physical flow on the network element in question is calculated again. The difference between this physical flow and the original physical flow represents the PTDF value of cross-border exchanges between Germany and Austria[33].

(68) The Agency, as mentioned above, requested URE, ERO and BNetzA to provide data on PTDFs of cross-border exchanges between Germany and Austria for the structurally congested network elements for congested areas No. 10, 11, 12, 16, 19, 20, as specified in Table 2. For this purpose, the Agency provided specific directions to NRAs with regard to the calculation of the PTDF data and with regard to the choice of the Common Grid Model ("CGM") and Generation Shift Key ("GSK"). The exact directions are described in Annex I to this Opinion, which also provides the PTDF data calculated by the different TSOs and submitted to the Agency by the respective NRAs. The differences in the average PTDF data calculated by the different TSOs are small (i.e. below 1%), though in specific cases the differences are significant (up to 12 %). Where TSOs provided different values of PTDFs for the same network elements (see Annex I), the average value of these PTDFs is presented in Table 6.

(69) The selected CGMs which TSOs are using for congestion forecasting and planning purposes are presented in the first column of Table 6 where "RGM" refers to Reference Grid Model and "IDCF" refers to Intraday Congestion Forecast model. Cumulative PTDF values are presented for different network elements within the specified congested areas. The PTDF values are specified as a percentage, and thus represent the share of cross-border exchanges on the DE-AT border realised physically through given network elements within specified congested areas. At the bottom of the table, the average and maximum PTDF values taken from the sample of eight CGMs are presented.

[33] Although PTDF analysis is considered to be the best possible indication of how the commercial exchange between two areas influence physical flows on a specific network element it does have some limitations. These are explained at the end of Annex I to this Opinion.

Table 6: Cumulative PTDF values for Congested Areas 10, 11, 12, 16, 19 and 20 (in percentage)

Common Grid Model	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ
RGM Summer 2013	-10.0	11.8	12.5	10.9	4.0	17.0	28.3
RGM Winter 2014	-11.9	13.6	13.5	8.2	5.7	20.0	32.8
RGM Summer 2014	-12.2	12.3	13.1	9.8	4.6	19.9	29.9
RGM Winter 2015	-12.8	12.1	12.5	11.7	3.9	18.5	28.5
IDCF 20.10.2014 11h	-15.6	13.6	16.3	6.9	9.9	32.4	39.9
IDCF 04.11.2014 09h	-16.7	15.3	21.1	7.2	10.3	36.9	46.7
IDCF 10.12.2014 09h	-18.1	14.3	20.6	4.0	7.5	31.5	42.4
IDCF 24.12.2014 11h	-9.8	11.8	13.9	6.7	2.4	5.8	28.2
Average	-13.4	13.1	15.4	8.2	6.1	22.8	**34.6**
Maximum	-18.1	15.3	21.1	11.7	10.3	36.9	46.7

Source: URE, ERO and BNetzA (2015).

Note 1: Area 10: DE Internal: Vieselbach – Mecklar and Wolmirstedt – Helmstedt; Area 11: DE>PL border: Krajnik – Vierraden and Hagenwerder – Mikułowa; Area 12: DE>CZ border: Rohrsdorf – Hradec; Area 16: DE Internal: Remptendorf – Redwitz; Area 19: DE>CZ border: Etzenricht – Hradec and Etzenricht – Prestice; Area 20: CZ>AT border: Sokolnice – Bisamberg and Slavetice – Durnrohr; DE>PL+CZ: Area 11 + Area 12 + Area 19.

Note 2: The direction indicated in note 1 (e.g. from Vieselbach to Mecklar) also indicates the direction of congestion. A positive PTDF value indicates flow in the congested direction, whereas a negative PTDF value indicates flow in the non-congested direction.

(70) The results in Table 6 show that on a given sample of CGMs[34], on average approximately 34.6% of the physical flows resulting from the DE-AT cross-border exchanges are flowing from Germany through congested network elements on the DE-PL and DE-CZ borders, and 22.8% of those flows are flowing back to Austria through congested network elements on the CZ-AT border. In one scenario, 46.7% of the physical flows resulting from the DE-AT cross-border exchanges are flowing from Germany through congested network elements on the DE-PL and the DE-CZ borders and 36.9% of those flows are flowing back to Austria through congested network elements on the CZ-AT border.

(71) These findings confirm and complement the findings of the previous section showing that a significant share (on average 48.2%) of the DE-AT cross-border exchanges is being realised through the neighbouring CEE and CWE networks. In 2014, the average DE-AT cross-border exchange was 2,440 MW, whereas the maximum was 7,126 MW. Multiplication of these exchange levels with the PTDF values provides the flows that would result from those exchanges. Taking into account the average PTDF values in Table 6, the DE-AT cross-border exchanges cause on average 844 MW of physical flows and a

[34] In the Agency's view the sample size of eight is rather small and therefore the reported average and maximum values should be understood as approximate indication of influences and not accurate representation of the complete sample.

maximum of 2,465 MW of physical flows on the structurally congested lines of the DE-PL and DE-CZ borders, whereas the average and the maximum flows on the structurally congested lines of the CZ-AT border are 555 MW and 1,621 MW respectively. In the Agency's view, this represents a significant impact of the DE-AT cross-border exchanges on the congested network elements on the DE-PL and the DE-CZ borders.

(72) Furthermore, the results in Table 6 show that the DE-AT cross-border exchanges are also being realised through congested network elements inside Germany. On average, approximately 8.2% of the DE-AT cross-border exchanges are being realised through the structurally congested network element Remptendorf – Redwitz[35]. Taking into account the DE-AT cross-border exchanges in 2014 and the average PTDF values in Table 6, these exchanges caused on average 199 MW of physical flows and a maximum of 581 MW of physical flows on the structurally congested line Remptendorf – Redwitz. In the Agency's view, this represents a significant impact of the DE-AT cross-border exchanges on one of the structurally congested network elements within Germany.

6.2.5 The impact of the DE-AT cross-border exchanges on structural congestions in the CEE region

(73) In the Agency's opinion, the results from Sections 6.2.1 to 6.2.4 provide evidence that the cross-border exchanges on the DE-AT border have a significant impact on the structurally congested network elements of the DE-PL, DE-CZ and CZ-AT borders, as well as on structurally congested network elements within Germany.

6.3 The lack of capacity allocation on the DE-AT border

(74) The Rules for Coordinated Auction of Transmission Capacity in the CEE Region, which were approved by the NRAs' decisions, do not provide for capacity allocation on the DE-AT border, i.e. for the interconnection between Germany and Austria. In this section we assess the legal basis and the requirements for the implementation of capacity allocation methods on the DE-AT border.

6.3.1 The relevant legal framework

(75) The solution of congestion situations and the management and allocation of available transmission capacity of interconnectors is a key concern of Regulation (EC) No 714/2009. This is evident in particular from:

[35] Approximately 13.4% of the DE-AT cross-border exchanges are also being realised through the structurally congested network elements Mecklar – Vieselbach and Helmstedt – Wolmirstedt, although in the direction opposite to the congestion as indicated by the negative PTDF value. These two lines are congested in the direction from East to West Germany, whereas the physical flows resulting from DE-AT exchanges have a direction from West to East Germany.

- Article 1, indicating fair rules for cross-border exchanges in electricity and enhanced competition within the internal electricity market through, *inter alia*, 'the allocation of available capacities of interconnections between national transmission systems' as one of the main aims of the Regulation;
- Article 16, setting out 'general principles for congestion management'; and
- Annex I, laying down 'Guidelines on the management and allocation of available transfer capacity of interconnections between national systems'.

(76) In this context, Regulation (EC) No 714/2009 underlines that coordination among TSOs with regard to the application of congestion management methods is important. This is clear especially from:

- Article 12(2), referring to the TSOs' duties 'to promote the coordinated allocation of cross-border capacity through non-discriminatory market-based solutions'; and
- Point 3 of Annex I, concerning 'coordination', and notably point 3.1 and 3.2 referring to common congestion-management methods coordinated between countries and within regions.

(77) In the Agency's view, this shows that Regulation (EC) No 714/2009 aims to ensure that congestion problems are addressed in a way which takes into account the physical reality of electricity flows in the European meshed network and the complex interdependency between, on the one hand, the physical flows on one interconnection and the respective concerned national networks and, on the other hand, the available transfer capacity on another interconnection and the respective concerned national networks.

6.3.2 The requirement to implement capacity allocation

(78) Regulation (EC) No 714/2009 and its Guidelines tie the need for capacity allocation to the existence of congestion. Pursuant to point 1.2 of the Guidelines, there need be no capacity allocation procedure for access to a cross-border transmission service where there is usually no congestion; and, pursuant to point 1.4 of the Guidelines, appropriate congestion-management methods and arrangements, defined and agreed upon in advance, shall be implemented immediately by the TSOs if structural congestion appears.

(79) According to E-Control, the cross-border flows on the DE-AT interconnection are usually below the available transmission capacity of this interconnection. Based on this fact, E-Control infers that the DE-AT interconnection is usually in a position to accommodate all physical flows between Austria and Germany. Therefore, E-Control concludes that the DE-AT interconnection as such cannot be considered as structurally congested and that

Regulation (EC) No 714/2009 and the Guidelines do not impose an obligation to implement a capacity allocation procedure at the DE-AT interconnection.

(80) However, the capacity of and the flows on an interconnection itself are not the only factors to be considered in deciding whether or not a capacity allocation procedure is required. In fact, as confirmed by the definition of congestion in Article 2(2)(c) of Regulation (EC) No 714/2009, not only the capacity of the interconnectors, but also the capacities of the national networks concerned by physical flows engendered by the cross-border exchanges at a border, have to be taken into account to conclude whether or not an interconnection can accommodate these flows. For instance, if an interconnection could host the relevant flows only at the expense of network security violations or discriminatory access to other interconnectors, it should be considered as, in fact, lacking the capacity necessary to accommodate those flows.

(81) As shown above, the cross-border exchanges on the DE-AT border are physically realised partly through congested network elements on the DE-PL, DE-CZ and CZ-AT borders, as well as congested network elements within Germany. As such, these cross-border exchanges either lead to the capacity of those network elements being frequently insufficient to accommodate all the flows arising from trade requests having a significant impact on those network elements; or they frequently require remedial actions, such as redispatching or countertrading, to ensure that the flows on those network elements comply with the requirements of network operational security.

(82) Thus, to the extent that the DE-AT interconnection can carry the scheduled DE-AT cross-border exchanges and the resulting physical flows, it can do so only at the expense of significant limitations of the available cross-border capacity and international trade on other interconnectors, as well as of remedial actions due to congestions on internal network elements as well as on interconnectors. Therefore, in the Agency's view, the direct impact of the exchange on the DE-AT border on the congested DE-PL, DE-CZ and CZ-AT interconnectors, as well as on the congested network elements within Germany, implies that in fact the DE-AT interconnection can usually not accommodate all physical flows resulting from international trade requested by market participants. Therefore, the Agency considers the DE-AT interconnection as usually and structurally congested, pursuant to point 1.2 and 1.4 of the Guidelines in conjunction with Article 2(2)(c) of Regulation (EC) No 714/2009.

(83) According to E-Control, capacity allocation should be used as a congestion management method only in cases where no other cost-efficient and technically effective measures are available. E-Control however also acknowledges that "only in case of 'structural' congestion, a permanent capacity allocation method has to be implemented".

(84) The Agency agrees that, in case of structural congestion as defined in Article 2(19) of the CACM Guideline, a permanent capacity allocation method has to be implemented. The Agency considers redispatching and countertrading as less cost-efficient in case of structural congestions, but they might be needed to address structural congestions during the transition period[36]. Whilst point 1.3 of the Guidelines allows curative re-dispatching and countertrading in case lower-cost measures cannot be applied, points 1.2 and 1.4 of the Guidelines do not mention the use of redispatching or countertrading measures to address structural congestion.

(85) Thus, since the Agency considers the DE-AT interconnection as usually and structurally congested, it deems necessary that capacity allocation methods are implemented on this border, pursuant to Article 2(2) (c) of Regulation (EC) No 714/2009 and points 1.2 and 1.4 of the Guidelines.

6.3.3 The requirement to implement a coordinated common capacity allocation procedure

(86) Regulation (EC) No 714/2009 and its Guidelines also emphasise the need for a coordinated and common approach to dealing with congestion problems. Pursuant to Article 12(2) of Regulation (EC) No 714/2009, TSOs shall promote operational arrangements in order to ensure the optimal management of the network and shall promote the coordinated allocation of cross-border capacity through non-discriminatory market-based solutions.

(87) More specifically, pursuant to point 3.1 of the Guidelines, capacity allocation at an interconnection shall be coordinated and implemented using common allocation procedures by the TSOs involved in cases where commercial exchanges between two countries (TSOs) are expected to significantly affect physical flow conditions in any third country. NRAs and TSOs shall ensure that no congestion-management procedure with significant effects on physical electric power flows in other networks is devised unilaterally. Furthermore, point 3.2(d) of the Guidelines requires the application of a common coordinated congestion-management method and procedure for the allocation of capacity to the market at least annually, monthly and day-ahead by 1 January 2007 between the countries in the CEE region, i.e. Germany, Poland, Czech Republic, Slovakia, Hungary, Austria and Slovenia. Moreover, point 3.5 of the Guidelines provides that the coordination between TSOs, with a view of promoting fair and efficient competition and cross-border trade, as well as of securing operation of the network, includes all the steps from capacity calculation and optimisation of allocation.

[36] The Agency notes that measures such as implementation of capacity allocation requires a certain transition period for stakeholders to prepare, as was done in the Swedish case where this period was set to 18 months. During this period, curative re-dispatching and countertrading might be needed to address structural congestions. For example, in the Swedish case, these measures were applied in such an amount as to mirror the situation after implementation of capacity allocation in Sweden. See paragraph 94; http://ec.europa.eu/competition/antitrust/cases/dec_docs/39351/39351_1211_8.pdf.

(88) These provisions illustrate that Regulation (EC) No 714/2009 understands congestion not as a stand-alone concept which can be evaluated for an interconnection disregarding the physical reality of the surrounding network, but as a phenomenon inherently linked to the other interconnectors and national transmission systems which are affected by the cross-border exchanges on the interconnection concerned. It is the physical reality of electricity flows in the European meshed electricity network that cross-border exchanges on one interconnection can have a significant impact on the physical flows on other interconnections and can cause congestions and reduction in available cross-border capacity there.

(89) Against this background, the Agency is of the view that the purpose of the coordinated "common congestion management procedure", referred to in point 3.1 of the Guidelines, is to address the significant (negative) effects which cross-border exchanges scheduled on one interconnection may have on other interconnections. Thus, a common congestion management procedure coordinated by the relevant TSOs is not an end in itself, but should address these (negative) effects effectively. Moreover, in view of the objectives, principles and specific requirements which Regulation (EC) No 714/2009 defines for the management of congestion problems, the common coordinated congestion management procedure should address congestion problems with solutions which (a) are market-based thus enhancing competition, (b) are non-discriminatory, (c) give efficient economic signals to the market participants and transmission system operators involved, and (d) involve transparent congestion-management methods. Those requirements are in particular evident from:

- Article 16(1) of Regulation (EC) No 714/2009, which provides that network congestion problems shall be addressed with non-discriminatory market-based solutions which give efficient economic signals to the market participants and transmission system operators involved;
- Point 1.5 of the Guidelines, which provides that the methods adopted for congestion management shall give efficient economic signals to market participants and TSOs, promote competition and be suitable for regional and Community-wide application;
- Point 1.6 of the Guidelines, which provides that a particular request for transmission service shall be denied only when the incremental physical power flows resulting from the acceptance of that request imply that secure operation of the power system may no longer be guaranteed and the monetary value of the request in the congestion-management procedure is lower than all other requests intended to be accepted for the same service and conditions;
- Point 3.1 of the Guidelines, which requires that, where commercial exchanges between two countries (TSOs) are expected to affect physical flow conditions in any third-country (TSO) significantly, congestion-management methods are coordinated

between all the TSOs so affected through a common congestion-management procedure and that NRAs and TSOs ensure that no congestion-management procedure with significant effects on physical electric power flows in other networks is devised unilaterally;

- Point 5.2 of the Guidelines, which requires TSOs to publish a general description of the congestion-management method applied under different circumstances for maximising the capacity available to the market, and a general scheme for the calculation of the interconnection capacity for the different timeframes, based upon the electrical and physical realities of the network;
- Point 5.3 of the Guidelines, which requires transparent description of the congestion management and capacity-allocation procedures in use, together with the times and procedures for applying for capacity, a description of the products offered and the obligations and rights of both the TSOs and the party obtaining the capacity, including the liabilities that accrue upon failure to honour obligations.

(90) E-Control has provided consultancy studies concluding that cross-border exchanges on the DE-AT border do not have a significant impact on congestions in other parts of the CEE network and thus, a capacity allocation procedure on the DE-AT border would not address the congestion problems in the CEE network.

(91) The Agency notes that these studies did not analyse the impact of a coordinated capacity allocation procedure on the DE-AT border on congestion problems in other parts of the CEE region[37]. Thus in the Agency's opinion, these studies have not demonstrated that a coordinated capacity allocation procedure on the DE-AT border would not address congestion problems. Indeed, the studies provided by E-Control demonstrate that non-coordinated capacity allocation procedure would likely not address congestion problems in the CEE region. Since there are structural congestions on the DE-PL, DE-CZ and CZ-AT interconnectors and since the cross-border exchanges over the DE-AT interconnection have a significant impact on the flow conditions on these interconnectors, point 3.1 of the Guidelines requires a common and coordinated congestion management procedure, involving the DE-AT interconnection and other interconnections in the CEE region, which is transparent, market-based, competition enhancing, non-discriminatory, and which provides for efficient economic signals. The following sections 6.3.3.1 to 6.3.3.4 demonstrate that only coordinated capacity allocation procedure can fulfil these requirements and can adequately address congestion problems in highly-meshed networks (such as the network in the CEE region) where physical congestions are caused not only by cross-border exchange on one border, but by cross-border exchanges on many borders simultaneously.

[37] The studies focus on bilaterally defined NTC values on the DE-AT border, without clarity on how they have been determined or calculated.

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6.3.3.1 Market-based congestion management enhancing competition

(92) Points 1.5 and 1.6 of the Guidelines imply that when TSOs cannot accommodate all requests for cross-border exchanges because the secure operation of the power system would not be guaranteed, they shall deny the requests with the lowest monetary value (i.e. willingness-to-pay for cross-border exchange).

(93) The presence of structural congestions in the CEE region indicates that TSOs cannot accommodate all the requests for cross-border exchanges which have a significant influence on these structural congestions. This implies that the requests for those cross-border exchanges should be granted or denied using the above competitive and market-based principle, so as to facilitate efficient cross-border trade. It also implies that when a single structural congestion is significantly impacted by the requests for cross-border exchanges on two or more different borders, the monetary value of these requests should be weighed against their relative impact on the structural congestion.

(94) Currently, the cross-border exchanges on the DE-AT border, while having a significant impact on structural congestions in the CEE region, do not compete for the limited capacity of these congested network elements. The requests for cross-border exchanges on the DE-AT border are accepted unconditionally by the Austrian and German TSOs, even though these exchanges have a significant impact on congested network elements in other parts of the CEE region. As a consequence, the TSOs responsible for keeping the physical flows on these congested network elements within operational security limits are forced to reduce the cross-border capacity available on their CEE borders. In addition, the large uncertainty of cross-border exchanges on the DE-AT border (see Table 4) further reduces the available cross-border capacity on other CEE borders, since the capacity on other CEE borders is calculated before the actual cross-border exchanges on the DE-AT border are known. Thus, the TSOs on other CEE borders need to reduce the cross-border capacities not only for the expected volume of physical flows resulting from the DE-AT exchanges, but also due to the uncertainty of their level (i.e. actual flows may be bigger than the expected ones).

(95) Therefore the requests for cross-border exchanges on the DE-AT border are systematically accepted without taking into account the actual monetary value of such requests. On other CEE borders, however, the requests for cross-border exchanges are often denied because of limited available cross-border capacity. Thus, the situation where the requests for cross-border exchanges with a lower monetary value (e.g. on the DE-AT border) are being granted whereas the requests for cross-border exchanges with a higher monetary value (e.g. on the DE-PL border) are being denied is not systematically prevented.

(96) In the Agency's opinion, a market-based congestion management method enhancing competition is currently not applied on the DE-AT interconnection, despite the fact that it is usually and structurally congested.

(97) In the Agency's view, the inclusion of the DE-AT border in a capacity allocation procedure coordinated within the CEE region, pursuant to points 3.1 and 3.5 of the Guidelines, would be the most appropriate market-based congestion management method enhancing competition, as it would ensure that all requests for cross-border exchanges are granted or denied based on their monetary value weighed against their relative impact on congestion.

6.3.3.2 Congestion management providing efficient economic signals

(98) Congestion costs attributed to cross-border exchanges have a direct impact on the wholesale electricity price formation in different areas as they impact the price at which electricity can be imported to, or exported from, different areas. To ensure correct economic signals, cross-border exchanges and related congestion management methods need to reflect the costs of all congestions which those cross-border exchanges cause.

(99) Currently, the requests for cross-border exchanges on the DE-AT border are being accepted assuming no costs from congestions in other parts of the CEE network, while the requests for cross-border exchanges on other CEE borders are being granted or denied by attributing disproportionally higher costs of congestions to those cross-border exchanges. The absence of congestion costs for exchanges on the DE-AT border results in a misleadingly equal wholesale market price in the whole of Germany and Austria, whereas the presence of (high) congestion costs on other CEE borders results in relatively high differences in wholesale market prices in other parts of the CEE region (e.g. between Germany and Poland).

(100) Such inadequate representation and allocation of congestion costs distorts the wholesale market price signals. As a result, investment signals for generation, consumption and network reinforcements are distorted and do not provide correct signals for investments, as well as adequate locational information on where these investments are needed.

(101) In the Agency's opinion, the DE-AT interconnection, whilst being usually and structurally congested, is currently not subject to a congestion management method providing efficient economic signals.

(102) In the Agency's view, the inclusion of the DE-AT border in a capacity allocation procedure coordinated within the CEE region, pursuant to points 3.1 and 3.5 of the Guidelines, would be the most appropriate and most efficient congestion management method providing efficient economic signals, considering that a coordinated capacity allocation procedure

would allocate congestion costs to cross-border exchanges proportionately to their contribution to the congestion.

6.3.3.3 Non-discriminatory congestion management

(103) The capacity of interconnectors is calculated at a point in time when the precise exchanges outside the capacity allocation procedures are not yet known. Therefore, the total capacity of the relevant network elements is actually reduced for:

- The expected physical flows resulting from the expected exchanges outside the capacity allocation procedures;
- The reliability margin, representing the reduction in cross-border capacity to cover the uncertainties within the capacity calculation, most notably the uncertainty of the expected physical flows resulting from the expected exchanges outside the capacity allocation procedures.

(104) The cross-border capacities available on CEE borders other than on the DE-AT border represent the capacities of the congested network elements, which are reduced, *inter alia*, by the amount of physical flows resulting from expected exchanges on the DE-AT border and by the reliability margin associated with the uncertainty of these exchanges. This *de facto* provides a priority right for cross-border exchanges on the DE-AT border to use the capacities of the congested network elements at the expense of cross-border exchanges on other CEE borders, as these can only use the portion of the capacities of congested network elements which has not already been used by the cross-border exchanges on the DE-AT border. This results in discrimination among network users on different interconnections (i.e. borders) who want access to scarce transmission capacities in the CEE region. In particular, it results in discrimination between market participants requesting cross-border exchanges on the DE-AT border and market participants requesting cross-border exchanges on other CEE borders: while the requests of the former are never denied, the request of the latter are denied frequently, *inter alia*, as a direct consequence of the (acceptance of the) requests of the former.

(105) In the Agency's view, the inclusion of the DE-AT border into a capacity allocation procedure coordinated within the CEE region, pursuant to points 3.1 and 3.5 of the Guidelines, would be the most appropriate and the most efficient way of remedying this discriminatory situation, as a coordinated capacity allocation procedure would accept or reject requests for cross-border exchanges in a non-discriminatory manner, based on their monetary value and their relative impact on congested network elements and would not be based on country of origin of the requests as it is currently the case.

6.3.3.4 Transparent congestion management

(106) Point 5.2 of the Guidelines requires that TSOs *"...publish a general description of the congestion-management method applied under different circumstances for maximising the capacity available to the market, and a general scheme for the calculation of the interconnection capacity for the different timeframes, based upon the electrical and physical realities of the network."* The transparency of a congestion management procedure, including the coordinated capacity allocation procedure, essentially addresses three questions that are of interest to network users and the general public:

1. Which network elements are congested and are limiting the cross-border exchanges and trade?
2. How is the capacity of these network elements calculated?
3. How is the scarce capacity of these network elements allocated to the requests for cross-border exchanges?

(107) The application of coordinated capacity allocation procedures, as described in Chapter 3 of the Guidelines, does require TSOs to disclose information related to these three questions. This ensures that the coordinated capacity allocation procedure is based on objectively defined physical properties of the network and the monetary value of the requests for cross-border exchanges.

(108) The DE-AT interconnection, whilst being, in the Agency's opinion, usually and structurally congested, currently does not apply a transparent congestion management method. The impact of cross-border exchanges on the DE-AT border on congestion problems in the CEE region seems to be implicitly acknowledged by the Austrian and German TSOs, which actively participate in solving congestion problems in the CEE region. This participation mostly involves coordinated remedial actions, namely coordinated redispatching through the vPST arrangements aiming at ensuring network security, as well as some minimum cross-border capacity on the DE-PL border. Nevertheless, the NTC values on the DE-PL border have returned to zero, as the experience has shown that the available remedial actions are not sufficient to guarantee a non-zero NTC value. In spite of these arrangements, the Agency notes that the methodology for solving congestion problems and calculating cross-border capacity on the DE-PL border is not transparently described by the involved TSOs and does not address the three questions outlined above.

(109) The Agency also notes that cross-border exchanges on the DE-AT border in the intraday timeframe are being blocked during significant time periods, even though the very notion of a bidding zone does not allow any restrictions to trade within its borders (i.e. trade can be restricted only with capacity allocation). During the first half of 2015, intraday trade on

the DE-AT interconnection was stopped before the intraday gate closure time during 67 days (which accounts for 35.8% of days in the observed period). The reason for applying this measure, as reported by APG[38], is most often the critical level of load flows, although the exact location of congestion problems is not reported. This raises significant concerns with regard to the transparency of congestion management on the DE-AT interconnection.

(110) In the Agency's view, the inclusion of the DE-AT border into a capacity allocation procedure coordinated within the CEE region pursuant to points 3.1 and 3.5 of the Guidelines would be the most transparent congestion management method, as it would make the information available on a) the network elements which are congested and are limiting the cross-border exchanges and trade, b) how the capacity of these network elements is calculated and c) how the scarce capacity of these network elements is allocated to the requests for cross-border exchanges.

6.3.3.5 Coordination of capacity calculation and allocation

(111) In the previous sections of this Opinion, the Agency has demonstrated that cross-border exchanges on the DE-AT border have a significant impact on structurally congested interconnectors and network elements located in the CEE region and, therefore, the capacity calculation and allocation on the DE-AT border should be coordinated within the CEE region, as defined in point 3.2 of the Guidelines.

(112) Point 3.5 of the Guidelines requires that *"coordination between TSOs within the regions set out in point 3.2 shall include all the steps from capacity calculation and optimisation of allocation to secure operation of the network, with clear assignments of responsibility"*.

(113) With regard to this requirement, the Agency is of the view that the capacity calculation and allocation on the DE-AT border should be coordinated within the CEE region in such a way that the DE-AT border forms a constituent part of the CEE region for the application of coordinated capacity calculation, optimisation of allocation and secure operation of the network.

6.3.4 Alternatives to a coordinated common capacity allocation procedure

(114) E-Control and BNetzA refer to mitigating measures, notably redispatching, network investments and the bidding zone review process under the CACM Guideline, as more appropriate solutions for the congestion problems in the CEE region.

[38] See publications on current market information at http://www.apg.at/en/market/cross-border-exchange/REMIT

(115) As indicated above, the Agency considers redispatching and countertrading as less cost-efficient in case of structural congestions, though they might be needed to address structural congestions during the transition period[39]. In fact, as already recalled above, Regulation (EC) No 714/2009 requires that structural congestions are addressed with a coordinated congestion management procedure that should address congestion problems with solutions which (a) are market-based, thus enhance competition, (b) are non-discriminatory, (c) give efficient economic signals to the market participants and transmission system operators involved, and (d) involve transparent congestion management methods.

(116) Among the envisaged measures to limit the negative impact of the DE-AT cross-border exchanges on the physical flows of congested network elements and on available cross-border capacities on other CEE borders is the so called SOO, which introduces an artificial limit to the cross-border exchanges on the DE-AT border that is applied in the capacity calculation process, but not in reality (e.g. day-ahead or intraday market coupling). In the Agency's understanding, such limit would indeed increase cross-border capacity on other borders at times when the expected volume of cross-border exchanges on the DE-AT border exceed this limit, but would also result in significant violations of operational security, thereby leading to a significant increase in the use of remedial actions.

(117) Regarding network investments, the Agency notes the significant efforts and plans of the involved parties to strengthen the network and, thereby, to contribute to mitigate the congestion problems in the CEE region. However, the Agency does not consider these planned network investments as a sufficient reason for not introducing a coordinated capacity allocation procedure on the DE-AT border[40]. Firstly, the Agency considers the network development as a long-term measure, whereas the evolution of network congestions is often a much more dynamic process (for example due to unanticipated and rapid changes in the generation and load patterns) requiring actions in the short- to mid-term timeframe. Secondly, the Agency notes that, in highly meshed AC networks such as Central Europe, investments inside one bidding zone might mitigate congestions in such bidding zone, but it does not guarantee that exchanges inside this bidding zone will no longer cause congestions in another bidding zone due to loop flows. Finally, the Agency notes that such a long-term solution will, by no means, solve the immediate issue at stake (i.e. a lack of compliance of some NRAs' decisions with the provisions of the Guidelines and of Regulation (EC) No 714/2009).

(118) The bidding zone review under the CACM Guideline is indeed an important project. However, in the Agency's view, this review does not constitute a prerequisite for

[39] See paragraph 84.

[40] According to information provided to the Agency by BNetzA, the German network development plans are based on the assumption that a certain restriction in trade between Germany and Austria is in place. Therefore, the planned network development will naturally only suffice to accommodate the trade of such quantity.

reconfigurations of bidding zones which are necessitated by the congestion management requirements of Regulation (EC) No 714/2009, and accordingly, the fact that it has not yet delivered its conclusions does not justify non-compliance with the congestion management requirements of Regulation (EC) No 714/2009. Thus, the Agency deems it necessary that compliance with the legal requirements of capacity allocation for congested interconnections is ensured through the implementation of capacity allocation on the DE-AT interconnection as soon as possible and not only once a bidding zone review under the CACM Guideline has been completed.

(119) The Agency does still consider the review of bidding zones which has been initiated in the frame of the early implementation of the CACM Guideline as an important early attempt to define efficient and optimal bidding zones in Central Europe, and will therefore continue to focus on it. The outcome of this ongoing review may also be relevant for the issue which is considered in this Opinion. It is also to note that the review's potential to solve the congestion problems in the CEE region is uncertain, since the review envisages a decision-making process which requires consensus among all the involved Member States without a specified dispute resolution process; it is in particular uncertain if and when this review will produce a final result, which would address the imminent congestion problems which are considered in this Opinion. Besides, it is to note that in the ongoing bidding-zone review, all the scenarios of alternative bidding-zone configurations currently being considered and aiming to address congestion problems also in the CEE region[41] do in fact include the DE-AT border as a bidding zone border and hence imply capacity allocation methods on that border, i.e. the DE-AT interconnection.

(120) For all these reasons, the Agency considers the implementation of a coordinated capacity allocation procedure on the DE-AT border as soon as possible as an important and necessary measure to address the congestion problems considered in this Opinion, even though such procedure will not solve all the congestion problems in the CEE region. In particular the increasing amount of north-to-south exchanges within Germany causes severe structural physical congestions within Germany and in the neighbouring countries and this indicates that additional measures would also be needed. While this issue falls outside the scope of this Opinion, the Agency recommends that this issue be further investigated and seriously addressed in a coordinated way, i.e. in the framework of the bidding zone review process or in any other appropriate framework.

6.3.5 Coordinated capacity allocation procedure on the DE-AT border with respect to other elements of market efficiency and Articles 34, 35, 101 and 102 TFEU

[41] The Agency notes that there is also one scenario under review which suggests merging smaller bidding zones and in which the Austrian-German bidding zone is maintained. However, this scenario does not have the potential to solve the congestion problems in the CEE region.

(121) E-Control argues that capacity allocation on the DE-AT border could have a detrimental effect on the functioning of the electricity market in Austria and Germany, as it could affect market liquidity, market power or retail market competition.

(122) With regard to retail market competition, the Agency's MMR from 2013 reported on the influence of the introduction of bidding zones in Sweden on retail market competition. The report concludes that *"...there is no clear evidence that retail market competition in Sweden decreased following the introduction of bidding zones in 2011. Both the number of retailers and the margins are roughly the same as prior to the reform. Furthermore, all retailers that Ei interviewed emphasised that the reform had not hampered retail competition"*. Therefore, the experience in Sweden does not support E-Control's concerns with regard to retail market competition.

(123) The impact of bidding zone reconfiguration on market liquidity and market power has to some extent been analysed by the Agency in its Report on the influence of existing bidding zones on electricity markets, published in 2014[42]. With respect to market power, the report concludes that the possible changes to the bidding zone configuration should not be primarily guided by possible impacts on market power, since market power is primarily impacted by market structure and market concentration, as well as the underlying network infrastructure. With respect to the impact on market liquidity, the report concludes that *"...liquidity in the day-ahead market is more influenced by the market structure, market design (e.g. obligatory participation on power exchanges) and market concentration, rather than by the configuration of bidding zones"*. With respect to the impact on forward market liquidity, the report concludes that the bidding zone configuration may indeed have an impact on forward market liquidity and *"...from this perspective it is essential that any bidding zone reconfiguration is complemented with a forward market design providing market participants in all bidding zones with sufficiently good possibilities to hedge their price risks at competitive costs. Such design might include implementing a multi-zone hub design or Transmission Rights also between non-neighbouring bidding zones. This in turn may decrease the negative impacts, which the bidding zone reconfiguration could have on the forward market"*.

(124) In this context, the Agency invites E-Control and BNetzA, as well as other NRAs in the CEE region, to analyse the potential negative impacts arising from the introduction of a coordinated capacity allocation procedure on the DE-AT border and, if necessary, to propose mitigating measures that address the negative impacts on market participants, at least during the transition phase. The Agency also invites the involved NRAs to analyse

[42] See: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Report%20on%20Bidding%20Zones%202014.pdf.

whether specific changes in the market design would be required to preserve and enhance the level of market liquidity and competition in the CEE region.

(125) E-Control also argued that capacity allocation measures might hinder the principle of free movement of goods as they could constitute measures having an equivalent effect to a quantitative restriction on imports or exports under Articles 34 and 35 TFEU if not properly justified. Further, it stated that reconfiguration of the Austrian-German bidding zone by way of a market splitting might constitute an infringement of Articles 101 and 102 TFEU.

(126) In this respect, the Agency notes that Regulation (EC) No 714/2009 requires a coordinated common capacity allocation for interconnections in case of structural congestions and significant impact of commercial exchanges between two countries on physical flow conditions in a third country. The Agency has to apply this requirement to a case, like the present one, where there is structural congestion and significant impact of commercial exchanges between two countries on physical flow conditions in a third country. Moreover, E-Control did not substantiate why capacity allocation on the DE-AT border would actually be inconsistent with Articles 34, 35, 101 and 102 TFEU.

HAS ADOPTED THIS OPINION:

1. There is currently structural congestion on the DE-PL, DE-CZ and CZ-AT interconnectors, as well on network elements within Germany. The cross-border exchanges between Germany and Austria are physically realised partly through those structurally congested interconnectors and through those structurally congested internal network elements. As such, they account frequently for significant limitations of the available cross-border capacity and international trade on those interconnectors, as well as for remedial actions on interconnectors and internal network elements due to congestions. In the Agency's view, the cross-border exchanges on the DE-AT border have a significant impact on those structural congestions and, in view of the structural lack of capacity, the DE-AT interconnection needs to be considered as usually unable to accommodate all physical flows resulting from international trade requested by market participants, i.e. as usually and structurally congested pursuant to Article 2(2)(c) of Regulation (EC) No 714/2009 and points 1.2 and 1.4 of Annex I to Regulation (EC) No 714/2009.

2. The existing mitigating measures, in particular the virtual phase shifter agreement on the DE-PL border and the currently investigated mitigating measures, in particular the flow-based method with Security Oriented Option, aim at fixing some limitations on the volume of North-South exchanges within the DE-AT bidding zone in order to reduce the impact of these exchanges on congestions in other parts of the CEE region. However, in the Agency's view, these measures, regardless of possible further improvements, cannot replace transparent, non-discriminatory and market-based congestion management procedures

compliant with Regulation (EC) No 714/2009, which give efficient economic signals to market participants and the transmission system operators involved.

3. Therefore, the Agency is of the view that the implementation of a capacity allocation procedure on the DE-AT border is required pursuant to Article 16(1) of Regulation (EC) No 714/2009 and points 1.2, 1.4 and 3.1 of Annex I to this Regulation. This implementation shall be coordinated at least at the level of the CEE region. Thus, the DE-AT border should form a constituent part of the CEE region for the application of coordinated capacity calculation, optimisation of allocation and secure operation of the network, as required by point 3.5 of Annex I to Regulation (EC) No 714/2009.

4. The decisions of the NRAs of Slovenia, No 141-4/2013-09/203 of 23 October 2013, of Austria, No V AUK 02/13 of 11 October 2013, of Hungary, No 2538/2014 of 12 August 2014 and No 2890/2014 of 4 November 2014, and of Slovakia, No 0027/2014/E-PP of 22 August 2014, do not comply with Article 16(1) of Regulation (EC) No 714/2009 and points 1.2, 1.4 and 3.1 of Annex I to this Regulation, to the extent that those decisions approve the rules for the allocation of cross-border transmission capacity in the CEE region, although these rules do not provide for an allocation of cross-border capacity on the border between Germany and Austria.

5. The Agency invites:

(a) The TSOs and NRAs of the CEE region:

(i) To commit, within 4 months of the date in which this Opinion is adopted and published, to the adoption of a coordinated capacity allocation procedure on the DE-AT border, with a realistic but ambitious implementation calendar with concrete steps. This implementation calendar should give TSOs and market participants a reasonable amount of time to prepare themselves for this important change.

(ii) To allocate maximum resources and efforts to the implementation of Flow-Based Market Coupling in the CEE region as early as possible and work together constructively to avoid any further delays or disputes.

(iii) To evaluate, within 4 months of the date in which this Opinion is adopted and published, whether the already implemented interim measures (e.g. the virtual phase shifter in place since February 2014) are sufficient to ensure network security, or whether additional interim measures coordinated at regional level would be necessary to ensure that the network is operated safely until a coordinated capacity allocation procedure on the DE-AT border is implemented.

(b) The German and Austrian TSOs and NRAs to evaluate the need for potential transitory regulatory measures for market participants to accompany the implementation of a coordinated capacity allocation procedure on the DE-AT border.

(c) All relevant NRAs to continue supporting the market integration process during the transitional period until a coordinated allocation procedure on the DE-AT border is implemented. This support may imply approving CEE congestion management rules which are not fully compliant with the Regulation (EC) 714/2009 and its Annex until the measure recommended above becomes effective.

6. This Opinion is without prejudice to the determination of capacity calculation regions, pursuant to Article 15 of the CACM Guideline, and to the final outcome of the bidding zone review process, pursuant to Article 32 of the same Guideline.

Done at Ljubljana on 23 September 2015.

For the Agency:

Alberto Pototschnig
Director

ACER
Agency for the Cooperation of Energy Regulators

Annex I: Methodology and data on PTDF values

For the calculation of PTDF, the choice of a CGM and GSK is needed. The CGM usually represents a specific network situation characterised by the network topology, as well as generation and consumption patterns. Most often, forecasted or observed network situations are used for the creation of a CGM. The GSK means a method of translating a net position change of a given bidding zone into estimated specific injection increases or decreases in the CGM. Most commonly a proportional GSK is applied, where a change of 100 MW in the net position of a bidding zone is proportionally distributed among all injections in the common grid model.

The Agency has requested URE, ERO and BNetzA to provide the data on PTDFs for cross-border exchanges between Germany and Austria and for the structurally congested network elements as specified in Table 2 for congested areas No. 10, 11, 12, 16, 19 and 20. For these congested areas, where the network elements were not explicitly specified, the Agency asked the relevant NRAs to define them themselves. The request for data was accompanied by explicit directions with regard to the choice of CGM and GSK. With respect to the choice of CGM, the Agency selected eight common grid models where:

a) Four common grid models represent reference grid model (RGM) scenarios determined by ENTSO-E;
b) Four network models were selected among the latest available Intraday Congestion Forecast (IDCF) models, which TSOs are using within the process for forecasting the network congestions in the TSC region. These network models represent scenarios with different values of wind in-feed in Germany and commercial exchanges on the German-Austrian border.

The selected common grid models are presented in the first column of Tables 7 to 10. With respect to the choice of GSK, the Agency asked that the PTDF values are calculated with the upward shift of generation units in Germany (conventional and renewable-based) and downward shift of generation units in Austria. The generation units are shifted proportionally to their generation specified in the grid model (taking into account the generation both in generation nodes as well as in demand nodes) and ignoring non-linear phenomena such as the maximum/minimum power.

The cumulative data for PTDF values were calculated by the TSOs and delivered to the Agency by the NRAs. The data provided by each TSO are presented in Table 7 to Table 10. Cumulative PTDF values are presented for the network elements for the following congested areas:

a) Area 10: DE Internal: Mecklar – Vieselbach and Helmstedt – Wolmirstedt;
b) Area 11: DE>PL border: Krajnik – Vierraden and Hagenwerder-Mikułowa;
c) Area 12: DE>CZ border: Rohrsdorf – Hradec;
d) Area 16: DE Internal: Remptendorf – Redwitz;
e) Area 19: DE>CZ border: Etzenricht – Hradec and Etzenricht – Prestice;
f) Area 20: CZ>AT border: Sokolnice – Bisamberg and Slavetice – Durnrohr.

The PTDF values are specified in percentage terms and thus represent the percentage of cross-border exchanges on the DE-AT border realised physically through some given network elements. At the bottom of the table, the average and maximum PTDF value taken from the sample of eight CGMs are presented.

Table 7: Cumulative PTDF values provided by 50 HzT

Common Grid Model	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ
RGM Summer 2013	-9.8	11.7	12.6	10.5			
RGM Winter 2014	-12.2	13.5	13.7	7.2			
RGM Summer 2014	-12.4	12.4	13.3	9.8			
RGM Winter 2015	-12.9	12.7	13.0	11.7			
IDCF 20.10.2014 11h	-15.5	13.5	15.3	7.2			
IDCF 04.11.2014 09h	-16.3	15.1	19.8	7.2			
IDCF 10.12.2014 09h	-17.7	14.3	19.3	3.8			
IDCF 24.12.2014 11h	-14.3	15.9	20.3	4.8			
Average	-13.9	13.6	15.9	7.8			
Maximum	-17.7	15.9	20.3	11.7			

Source: 50HzT (2015).

Table 8: Cumulative PTDF values provided by ČEPS

Common Grid Model	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ
RGM Summer 2013			12.0		4.0	17.0	
RGM Winter 2014			12.8		5.4	20.0	
RGM Summer 2014			13.8		5.1	19.9	
RGM Winter 2015			11.6		3.4	18.5	
IDCF 20.10.2014 11h			18.4		11.5	32.4	
IDCF 04.11.2014 09h			22.4		11.2	36.9	
IDCF 10.12.2014 09h			22.3		7.9	31.5	
IDCF 24.12.2014 11h			7.8		-2.6	5.8	
Average			15.1		5.7	22.8	
Maximum			22.4		11.5	36.9	

Source: ČEPS (2015).

Table 9: Cumulative PTDF values provided by PSE

Common Grid Model	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ
RGM Summer 2013	-10.1	11.8	12.6	11.5	4.0		28.4
RGM Winter 2014	-10.2	13.3	13.2	9.8	5.3		31.8
RGM Summer 2014	-12.2	12.3	12.0	9.7	4.2		28.5
RGM Winter 2015	-13.4	11.7	12.8	11.4	4.6		29.1
IDCF 20.10.2014 11h	-17.6	15.2	17.4	5.8	10.9		43.5
IDCF 04.11.2014 09h	-18.2	16.4	22.4	6.7	10.9		49.7
IDCF 10.12.2014 09h	-20.4	15.5	21.6	3.6	8.5		45.6
IDCF 24.12.2014 11h	-2.1	5.1	8.2	10.7	3.0		16.3
Average	-13.0	12.7	15.0	8.7	6.4		34.1
Maximum	-20.4	16.4	22.4	11.5	10.9		49.7

Source: PSE (2015).

Table 10: Cumulative PTDF values provided by TenneT Germany

Common Grid Model	Area 10	Area 11	Area 12	Area 16	Area 19	Area 20	DE>PL+CZ
RGM Summer 2013	-10.2	11.9	12.6	10.6	4.0		28.6
RGM Winter 2014	-13.2	14.1	14.2	7.5	6.5		34.8
RGM Summer 2014	-11.8	12.1	13.2	9.9	4.5		29.7
RGM Winter 2015	-12.0	11.8	12.6	11.9	3.8		28.2
IDCF 20.10.2014 11h	-13.6	12.2	14.3	7.6	7.4		33.9
IDCF 04.11.2014 09h	-15.6	14.5	19.7	7.6	8.7		43.0
IDCF 10.12.2014 09h	-16.3	13.2	19.3	4.7	6.0		38.4
IDCF 24.12.2014 11h	-13.0	14.6	19.3	4.6	6.9		40.8
Average	-13.2	13.1	15.6	8.1	6.0		34.7
Maximum	-16.3	14.6	19.7	11.9	8.7		43.0

Source: Tennet Germany (2015).

The Agency notes that German TSOs, 50HzT and TenneT Germany, as well as PSE used the GSK in such a way that only the generation in generation nodes was shifted, whereas the negative demand in demand nodes, which represent net injection into the network, was not shifted.

The analysis based on PTDF has the following limitations. While the calculation of the PTDF data is considered as accurate since it uses an AC load-flow calculation, the possible sources of inaccuracy are:

1. The assumptions used for the construction of CGM. While CGM can be considered as reasonably accurate representation of the electricity system at the transmission level (network topology, generation and load), inaccuracies may arises due to the fact that nodal injections in CGM represent the net sum of generation and load in a specific node. Thus, the values of these injections may not represent the actual load and generation in a specific node.
2. The assumptions used for GSK. Most often a proportional GSK is used, which considers all nodal injections and increases them proportionally to their value given in CGM. Because nodal injections do not necessary represent the actual load and generation in a node, the proportional GSK may distribute the injection increase in a non-intuitive way.
3. The linear approximation. The PTDF is calculated assuming an exchange between two zones equal to 100 MW and assumes that the same PTDF would apply in case the exchange would be larger, e.g. 1000 MW. However, because of the non-linearity of electricity systems, the actual PTDF for a 1000 MW exchange may be different to some degree.