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Public consultation on the high-level approach for the identification of alternative bidding zone configurations to be considered for the bidding zone review

Fields marked with * are mandatory.

This consultation is addressed to all interested stakeholders.

Replies to this consultation should be submitted by **3 August 2021, 23:59 hrs (CET)**.

Questions should be addressed to ACER-ELE-2020-001@acer.europa.eu.

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* Is your input into this consultation confidential?

- ○ Yes
- ◉ No

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Related documents

- Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators ('ACER Regulation')
- Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) ('Electricity Regulation')
- Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management ('CACM Regulation')
- Regulation (EU) 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 Text with EEA relevance
- All TSOs' proposal for the methodology and assumptions that are to be used in the bidding zone review process and for the alternative bidding zone configurations to be considered in accordance with Article 14(5) of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5th June 2019 on the internal market for electricity
- ACER Decision on the methodology and assumptions that are to be used in the bidding zone review process and for the alternative bidding zone configurations to be considered (ACER Decision 29-2020)
- ACER Guidance Note on Consultations

Introduction

This consultation aims to gather views and information from stakeholders on the high-level approach for the identification of alternative bidding zone (BZ) configurations to be considered for the bidding zone review (BZR) process, pursuant to Article 14(5) of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity ('The Electricity Regulation').

This consultation follows the one launched in April 2020, whose scope was to gather views and information from stakeholders on selected aspects of the proposal developed in accordance with the above-mentioned article.

The definition of alternative BZ configurations has proven a difficult aspect of the proposal. In particular, the proposal did not include any alternative BZ configuration for Central Europe. In light of the insufficient technical information available for ACER to take an informed decision on alternative BZ configurations, with its Decision 29-2020 (the 'Decision'), issued on 24 November 2020, ACER adopted a pan-European BZR methodology and requested Transmission System Operators (TSOs) to carry out a Locational Marginal Pricing (LMP) simulation. Based on the results of this LMP simulation, ACER will be able to take a separate decision on alternative BZ configurations at a later stage.

When it comes to delineating BZs, there are at least two possible approaches. A first approach is a top-down (expert-based) one, whereby experts propose alternative BZ delineations, which could potentially yield more efficient outcomes than the current BZ configuration (the status quo). Based on available data and, whenever feasible, by performing certain market/network simulations, those alternative delineations are then confirmed or refined and finally prioritised. A second approach is a bottom-up (model-based) one, whereby LMP simulations are performed with a view to clustering nodes into BZs. Subject to certain delineation constraints, the clustering exercise yields alternative BZ configurations. By requesting TSOs to perform a LMP simulation, ACER intends to adopt a model-based approach for identifying alternative BZ configurations, as further elaborated in this document.

Taking stock of lessons learnt from previous BZRs, ACER is gathering views from stakeholders in an attempt to identify improvements to the high-level approach for the identification of alternative BZ configurations to be considered for the BZR.

In the following, the context of this public consultation is first presented. Subsequently, the general approach is described and the detailed process explained in detail. At the end, the questions for consultation are listed.

Context

Background

Pursuant to Article 14(5) of the Electricity Regulation, ENTSO-E, on behalf of all TSOs, published and submitted to regulatory authorities on 7 October 2019 a proposal for the methodology and assumptions that are to be used as well as for the alternative BZ configurations to be considered for the BZR process. Regulatory authorities identified shortcomings in the proposal. In particular, the proposal did not include any alternative BZ configuration for Central Europe. Regulatory authorities requested that TSOs amend the proposal before 20 February 2020. ENTSO-E, on behalf of all TSOs, published and submitted to regulatory authorities on 18 February 2020 an amended proposal. By letter of 13 July 2020, the Chair of the Energy

Regulators' Forum, on behalf of all regulatory authorities, informed ACER that they were unable to reach a unanimous decision on all TSOs' updated BZR proposal and that the updated BZR proposal was considered as referred to ACER as of 7 July 2020, pursuant to Article 14(5) of the Electricity Regulation.

With its Decision 29-2020 (the 'Decision'), issued on 24 November 2020, ACER decided on the BZR proposal as far as the methodology and assumptions for the BZR process are concerned and adopted a pan-European BZR methodology, referring the decision on alternative BZ configurations to a later stage.

Legal framework

Pursuant to Article 14(1) of the Electricity Regulation, "*Bidding zone borders shall be based on long-term, structural congestions in the transmission network. Bidding zones shall not contain such structural congestions unless they have no impact on neighbouring bidding zones or, as a temporary exemption, their impact on neighbouring bidding zones is mitigated through the use of remedial actions and those structural congestions do not lead to reductions of cross-zonal trading capacity in accordance with the requirements of Article 16. The configuration of bidding zones in the Union shall be designed in such a way as to maximise economic efficiency and to maximise cross-zonal trading opportunities in accordance with Article 16, while maintaining security of supply".*

In addition, Article 33 of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management ('the CACM Regulation') includes a list of minimum criteria that the BZR shall consider.

While the BZR study has to consider all the criteria listed in the CACM Regulation, the following three elements are explicitly mentioned in the Electricity Regulation as objectives to be pursued when delineating BZs. Moreover, these three elements can be quantified and, as such, more efficiently compared. These elements are:

- Minimisation of structural congestions within BZs;
- Maximisation of economic efficiency;
- Maximisation of cross-zonal trading opportunities.

A fourth element mentioned in the Electricity Regulation is security of supply, which is difficult to quantify during the identification of alternative BZ configurations. This element will however be considered during the BZR study as envisaged in the CACM Regulation.

General approach

The approach to identify alternative BZ configurations depends on the available data.

As reported in paragraph 150 of the Decision, results derived from LMP simulations are adequate to inform on the decision on alternative BZ configurations and in particular on the three objectives derived from Article 14(1) of the Electricity Regulation.

With regard to the objective ‘Minimisation of structural congestions within BZs’, LMP simulations shed light on whether BZs contain structural congestions or not. In particular, LMP simulations, together with clustering and flow decomposition techniques, allow establishing a cause-effect relationship between physical congestions and the network areas that, by exchanging energy, significantly contribute to such congestions. This is in line with Article 2(4) of the Electricity Regulation that describes congestion as “*a situation in which all requests from market participants to trade between network areas cannot be accommodated because they would significantly affect the physical flows on network elements which cannot accommodate these flows*”. How the results of the LMP simulations and clustering techniques can be combined to identify the relevant network areas contributing to congestions is further described in the following section.

With regard to the other two objectives to be pursued when delineating BZs:

- Maximisation of economic efficiency: The results derived from LMP simulations provide a good opportunity to incorporate the economic efficiency criterion in the identification of alternative BZ configurations. While economic efficiency will be more accurately modelled in the BZR study itself, it is possible to use a proxy for economic efficiency when defining alternative BZ configurations. For example, a more efficient dispatch is expected to be attained when there are no or very limited nodal price differentials within a BZ. This is because the absence of nodal price differentials suggests that intra-zonal congestions are not expected to severely constrain the results of the market.

- Maximisation of cross-zonal trading opportunities: First, the minimum 70% target introduced in Article 16(8) of the Electricity Regulation is a binding requirement to be satisfied as of 1 January 2026, which could lead to a BZ change if not met, pursuant to Article 15(5) of the Electricity Regulation. Second, such minimum target is easier to meet when the flows that do not result from capacity allocation, i.e. loop flows and internal flows, consume a relatively small share of the capacity of network elements. In this context, a flow decomposition analysis is an adequate tool to identify whether alternative BZ configurations are able to limit the amount of flows that do not result from capacity allocation and to achieve the legally required targets.

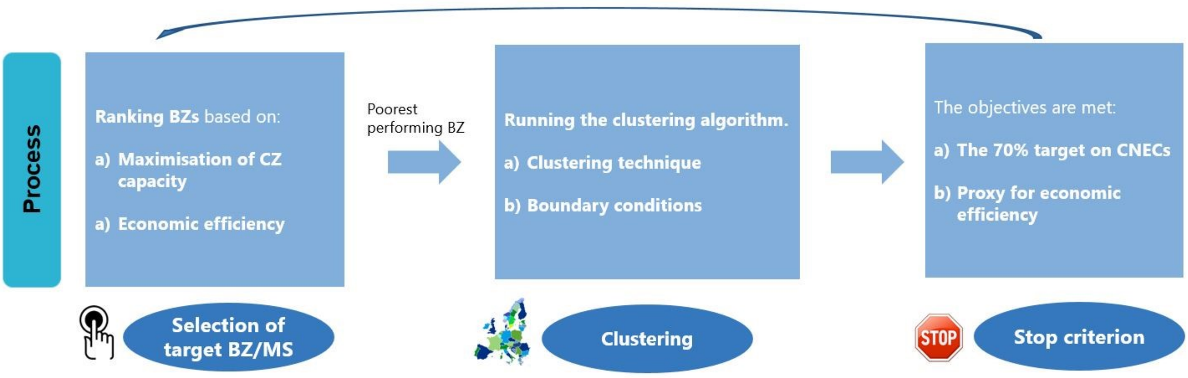
As a summary, results derived from LMP simulations, complemented with flow decomposition analyses, will be used to assess whether different alternative BZ configurations contribute to the objectives envisaged in the Electricity Regulation for the design of BZs. This includes the presence, or the lack thereof, of structural congestions within BZs and the maximisation of economic efficiency and cross-zonal trading opportunities.

In the following, the detailed process leading to the definition of alternative BZ configurations is presented.

Detailed process

The process proposed to identify alternative BZ configurations is an iterative one that comprises three steps: i) the selection of the target BZ/Member State (MS), ii) the clustering and iii) the stop criterion, as presented in Figure 1. An additional fourth step that is not part of the iterations is also required to combine the identified individual alternative BZ configurations to study their joint impact. For the sake of clarity, an individual BZ configuration refers to e.g. the split of a given BZ A into two BZs A1 and A2, while an alternative BZ configuration may consider the joint impact of such split with another individual BZ configuration, e.g. the merge of BZ B and BZ C into a single BZ. This fourth step is described at the end of this section.

Figure 1 – High-level approach for the definition of alternative BZ configurations



The process is designed in such a way that each iteration focuses on one single BZ or one single MS, based on the ranking built in the first step ('the selection of the target BZ/MS'), as further described below. This is an important feature of the process as it imposes the MS borders as a boundary condition to the process. In practical terms, this implies that both splits and mergers of BZs as alternative configurations are possible as long as the new BZ remains within existing MS borders, with the only exception of maintaining already existing BZs comprising more than one MS (essentially Germany and Luxembourg).

This choice does not exclude the possibility for mergers beyond MS borders in future BZRs. However, such a possibility is not considered for this BZR for the following reasons. First, in light of the Electricity Regulation, the main trigger and objective of a BZR is to address structural congestions and/or facilitate the attainment of the minimum 70% target. In view of the significant presence of congestions in Europe and the significant efforts still needed to meet the 70% target, it seems efficient to focus on configurations that help to meet this target. Second, it was found that it would be difficult to reach an agreement on which mergers to prioritise, if any, and to introduce specific arrangements that MS mergers would entail. Hence, as the number of configurations to be studied needs to remain limited, it is efficient to focus on alternative configurations for which an agreement is likely to be found.

The iterative process is conducted separately for each area where a joint LMP analysis is carried out by the TSOs. In the following, each step is presented in detail.

The first step, 'the selection of the target BZ/MS', aims to identify the BZ (or the MS to which the BZ belongs when several BZs belong to the same MS, as further elaborated below) that is selected in each step for the identification of alternative configurations in such BZ. Such identification is based on a ranking built on the following two indicators:

- Amount of burdening internal flows and loop flows per BZ on relevant network elements; and

- An indicator on economic efficiency, as further detailed below.

With regard to the first indicator, the amount of burdening internal flows and loop flows per BZ is derived from a flow decomposition analysis. An internal flow or a loop flow caused by a given BZ is considered to be burdening if it is in the same direction as the sum of all internal flows and loop flows on the considered network element. Flow decomposition is performed on all cross-zonal network elements as well as internal network elements used in capacity calculation, based on best available data and computational capabilities. This analysis covers the most recent three years (i.e. 2018, 2019 and 2020) of the latest ENTSO-E's technical report on structural congestions and other major congestions as well as the target year of the BZR, i.e. 2025. The lower the amount of burdening internal flows and loop flows on network elements originated in a given BZ, the higher the BZ scores with regard to this indicator.

With regard to the second indicator, different indicators, which can be used as a proxy for economic efficiency, are currently being considered. An example of this could be the dispersion of nodal prices. In such a case, the lower the dispersion of nodal prices in a given BZ, the higher the BZ scores with regard to this indicator.

Then, BZs are first ranked according to each of the two indicators and then a single ranking is built by combining the positions of each BZ in both rankings, while considering that the two proposed indicators are equally important for the purpose of the aggregated ranking. At each iteration, the geographic area where alternative BZ configurations are investigated is the BZ which performs the worst in the aggregated ranking. If the MS already includes multiple BZs, the identification of alternative BZ configurations for the MS as a whole may be investigated. This allows the possibility of considering mergers of BZs within MSs that currently comprise more than one BZ. When a MS with multiple BZs is selected for the first time in step 1, then the algorithm would seek to identity two BZs within the MS. If the MS is selected again in a subsequent step 1, then the algorithm would seek to identify three BZs within the MS and so on.

The second step corresponds to the application of a clustering algorithm, aiming to group nodes into BZs. Additional considerations regarding this step are as follows:

- First, this step is based on the results of the LMP simulations, which is solely conducted for the target year of the BZR, i.e. 2025.

- Second, currently two types of clustering methods, namely graph-based and constrained clustering, are being considered for the selection of the most adequate clustering algorithm. The final selection will depend on the outcome of the consultancy study on the matter.

- Third, the identification of sub-BZs within a BZ is subject to an additional boundary condition: the size, in terms of total generation and consumption of the newly identified BZs, should not be too different. This is needed to mitigate the issue related to the so-called flow-factor competition that could arise in case of very diverse BZ sizes.

The third step, the ‘stop criterion’, aims to determine whether the iterations for the identification of additional BZ configurations should continue or not. In line with the objectives envisaged in the Electricity Regulation, the iterations stop when the following two targets are simultaneously met:

- For all the considered network elements and market time units, the share of internal flows and loop flows taken together is lower than or equal to 23% of the thermal capacity of the network element. This value is obtained by assuming a 10% share for reliability margins and a contribution of this share in the ratio 20/70 to internal flows and loop flows.

- The indicator used as a proxy for economic efficiency reaches the target for all considered BZs. For example, if the dispersion of nodal prices is considered as a proxy, the target would be set to a residual value.

If, after each iteration, the stop criteria are not met, then the process restarts from step 1, to identify a new BZ to be selected for the identification of alternative configurations in such BZ. For each step, a new list of BZs is used as an input. Such list comprises: i) the BZs of the status quo, except those that were altered in previous iterations and ii) the BZs proposed in any of the previous steps. For MSs with multiple BZs, the BZs to be considered in each step are the ones identified during the latest iteration when the MS was selected in step 1.

The fourth and final step concerns the combination of the identified alternative BZs into alternative configurations to be studied. A list of maximum 10 alternative configurations per bidding zone review region is envisaged. This list includes a limited number of:

- Individual alternative BZ configurations;

- Combination of two individual alternative BZ configurations;

- Combination of three (or more) individual alternative BZ configurations

selected among all possible combinations of individual alternative BZ configurations that lead to the highest incremental improvements for the considered indicators.

Questions

Topic 1: Main objectives for the identification of alternative bidding zone configurations

Article 14(1) of the Electricity Regulation establishes that "*Bidding zone borders shall be based on long-term, structural congestions in the transmission network. Bidding zones shall not contain such structural congestions unless they have no impact on neighbouring bidding zones or, as a temporary exemption, their impact on neighbouring bidding zones is mitigated through the use of remedial actions and those structural congestions do not lead to reductions of cross-zonal trading capacity in accordance with the requirements of Article 16. The configuration of bidding zones in the Union shall be designed in such a way as to maximise economic efficiency and to maximise cross-zonal trading opportunities in accordance with Article 16, while maintaining security of supply".*

1.1. Do you agree that the identification of alternative bidding zone configurations should mainly seek the following three objectives: 1) Minimisation of structural congestions within bidding zones; 2) Maximization of economic efficiency and 3) Maximisation of cross-zonal trading opportunities?

at most 1 choice(s)

- [ ] Strongly disagree
- [x] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

1.2 Please provide any comments on the main objectives to be considered when identifying and prioritising alternative bidding zone configurations.

4999 character(s) maximum

While UNIPER agrees that the mentioned 3 points are meaningful, UNIPER considers that there are other major criteria which the above list is lacking. In addition, from looking at the proposed procedure, UNIPER is under the impression that ACER's interpretation of "maximization of economic efficiency" is much too narrow, i.e., far from comprehensive.
In more detail:
From the ACER description, it seems as if the "maximization of economic efficiency" refers to operational efficiency only (i.e., day-ahead clearing and / or redispatch) rather than taking into account long-term economic efficiency. Aspects like market liquidity, market power, transaction costs, transition costs as well as reliable investment signals are however essential for the goal of achieving a cost-efficient and reliable power system. These aspects and others are not sufficiently addressed by ACER's proposal. But UNIPER considers them as mandatory aspect of the said economic efficiency.
In the same way, investments into renewables (new-build, repowering as well as major overhauls) and hydrogen-related assets require a reliable framework. This holds for reliable policies, but in the same way, it holds for a reliable market design. If the market design is subject to various changes over an investment cycle, uncertainty among investors increases which implies contingency margins for investors and thus higher system costs and / or less investment.
The trust in the market is essential for investments. A bidding zone configuration of Europe should ensure a robust and efficient design for the next decades and not only for a couple of years, which will finally influence long-run economic efficiency and speed of system transformation.

Furthermore, focusing only on the network infrastructure is insufficient. It is also essential to consider the impact on the power and balancing markets. For example, the size of the bidding zone has to ensure that market participants can make investment decisions. This requires a certain size of the bidding zone (trading volume for hedging) to be able to handle an investment.
With regard to the target of “minimizing structural congestion”, in the way it is formulated in the ACER document, this point may be interpreted as completely avoiding congestion. However, completely avoiding congestion is certainly not the right approach. For transitory period (e.g., prior to grid expansion), short-lived market design changes may cause more harm/costs than they reduce costs. Furthermore, redispatch during a limited number of hours should be better than ever-decreasing bidding zones. UNIPER considers that a well-formulated welfare-maximizing approach takes these trade-offs into account and would avoid structural congestions where this causes higher costs than the alternative options. Therefore, “minimization of structural congestion” should not be a target per se.
Importantly, the major challenge of the power system is its decarbonization within the next two decades. This will change the supply as well as the demand side substantial. The resulting requirements for a network or market have to be considered. Also, the secure power supply across Europe needs to be solved efficiently (also being expressly mentioned as precondition in Article 14(1) of the Electricity Regulation), and the role of H2 in the future power system have to be taken into account as well. By basing the assessment solely on one target year, this transition of the energy system is hardly considered by the proposed analysis.
Hence, the current ACER objectives for the identification of alternative bidding zone configurations are insufficient or overemphasized, respectively. Finally, “security of supply” as well as “firm investment signals for sustainable technologies” must be added to the list of objectives. “Minimization of structural congestions” does not require to be a target per se. Economic efficiency (with its various facets) should establish a reduction of structural congestion as long as the reduced redispatch costs outweigh the transitional costs, transaction costs, additional costs due to contingency margins on investments, etc. The term “economic efficiency” must furthermore clearly understood as long-run economic efficiency.

Topic 2: Indicators for the selection of the target bidding zone/member state

To ensure that the objectives listed in Topic 1 are met, and based on the data available to ACER, the following indicators are proposed:

- The amount of internal flows and loop flows contributing to congestions, per bidding zone and on network elements included in capacity calculation, for the maximisation of cross-zonal trading opportunities; and

- The dispersion of nodal prices, i.e. assessing the level of homogeneity of nodal prices within the same bidding zone, for the maximisation of economic efficiency.

2.1. Do you agree with the proposed indicators?

at most 1 choice(s)

- [ ] Strongly disagree
- [x] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

2.2 In light of the objectives listed in Topic 1, please indicate other possible indicators for the selection of the target bidding zone/member state.

4999 character(s) maximum

UNIPER considers these two indicators to be far from comprehensive. Dispersion of nodal prices can only be an indicator for short-run economic efficiency. However, long-run efficiency should be the target.
In addition, market indicators such as liquidity are essential for an assessment of the alternative bidding zone configurations. Hence, a bidding zone should cross a threshold level in terms of both supply and demand to ensure a functioning liquidity in the financial market.
Please find further details in our response to questions 1.1 and 4.1.

Topic 3: Boundary conditions for the clustering algorithm

The high-level approach is designed in such a way that each iteration focuses on one single bidding zone or one single member state, based on the ranking built in the first step ('the selection of the target bidding zone/member state'). In practical terms, this implies that both splits and mergers of bidding zones as alternative configurations are possible as long as the new bidding zone remains within existing member state borders, with the only exception of maintaining already existing bidding zones comprising more than one member state.

3.1. Do you agree that member state borders should be considered as boundary condition for the clustering algorithm?

at most 1 choice(s)

- [x] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

3.2 Please indicate other possible geographical boundary conditions for the clustering algorithm, including pros and cons of such approach.

4999 character(s) maximum

Indeed, national laws and regulations could hamper a cross border bidding zone. Nevertheless, the member state borders should not be considered as boundary condition for the clustering algorithm. In simple words: A transmission line which runs across country borders may not be congested - or at least very infrequently. If this is the case, such a boundary condition would not be necessary and only reduce liquidity, alongside other disadvantages and thus only entail an inferior level of economic efficiency. A common European power market should be the framework to archive an efficient bidding zone configuration instead.

An additional boundary condition of the clustering algorithm is introduced, according to which the size, in terms of total generation and consumption of the newly identified bidding zones, should not be too different. This is needed to mitigate the issue related to the so-called flow-factor competition that could arise in case of very diverse bidding zone sizes, as further elaborated below. The competitive position of one bidding zone with respect to the others in the access to cross-zonal capacity is determined by the zonal Power Transfer Distribution Factors (PTDFs). A so-called flow-factor competition issue arises whenever zone-to-zone PTDFs between two bidding zones are systematically larger than between any other pair of bidding zones. In those circumstances, the concerned bidding zones have fewer chances to access the available cross-zonal capacity and, under scarcity circumstances, this could in turn lead to security of supply issues.

3.3. Do you think that having bidding zones with homogenous size in terms of total generation and consumption should be an objective when identifying alternative bidding zone configurations?

at most 1 choice(s)

- [x] Only for newly-defined bidding zones
- [ ] Always
- [ ] Never

3.4 Please provide any comments on this boundary condition.

4999 character(s) maximum

While ACER's description of the flow-factor competition is not detailed enough to comment, the general idea seems plausible. However, the more important issue is a minimum threshold on the size of the BZs.
A certain size of a BZ is essential for the functioning. UNIPER can recognize that in Sweden the size of some current zones is not sufficient because the liquidity within these zones is very low and hedging is hardly possible sufficiently in advance of maturity and for the required volumes. Hence a certain minimum bidding zone size (i.e., minimum thresholds on both supply and demand) have to be a condition as well. Already in the current configuration, UNIPER sees severe problems with liquidity. Therefore, our position is that merging of zones should be considered. As the current ACER proposal does not consider this merging of BZs across country borders, a homogeneity condition across all BZs must not be imposed, as otherwise this would destruct liquidity and thus reduce economic efficiency. Homogeneity of BZs can therefore only be imposed on newly-defined BZs.

Topic 4: Combination of identified individual alternative bidding zone configurations to study their joint impact

An individual bidding zone configuration refers to e.g. the split of a given bidding zone A into two bidding zones A1 and A2, while an alternative bidding zone configuration may consider the joint impact of such split with another individual bidding zone configuration, e.g. the merge of bidding zone B and bidding zone C into a single bidding zone.

A list of maximum 10 alternative configurations per bidding zone review region is envisaged. This list includes a limited number of:

- Individual alternative bidding zone configurations;
- Combination of two individual alternative bidding zone configurations;
- Combination of three (or more) individual alternative bidding zone configurations.

selected among all possible combinations of individual alternative bidding zone configurations that lead to the highest incremental improvements for the considered indicators.

The need to set a limit to the maximum number of alternative configurations to be studied is derived from the time window available to transmission system operators to perform the bidding zone review. This is laid down in Article 14(6) of the Electricity Regulation, according to which "*On the basis of the methodology and assumptions approved pursuant to paragraph 5, the transmission system operators participating in the bidding zone review shall submit a joint proposal to the relevant Member States or their designated competent authorities to amend or maintain the bidding zone configuration no later than 12 months after approval of the methodology and assumptions pursuant to paragraph 5*".

4.1. Please provide any comments on the approach to combine the incremental effects of individual alternative bidding zone configurations to study their joint impact.

4999 character(s) maximum

As mentioned in section 3.3 the minimum bidding zone size have to be a condition. UNIPER assesses that the size of the German bidding zone ensures an efficient power market at least. So, this knowledge should be taken into account when defining alternative bidding zone configurations.
The first bidding zone review showed very clearly that an assessment of alternative bidding zone configurations is a highly complex issue. Hence this bidding zone review should only consider few alternative configurations for an assessment of the methodology. If the methodology provides valid results then the number of alternative bidding zones can be increased and the European power market can be optimized.
As expressed under item 3.1, considering country borders as boundary condition can only yield inferior results in terms of welfare (short-run and long-run). Thus, an a-priori split must be avoided. If structural congestion was relevant enough alongside country borders, a proper LMP algorithm will identify this. I.e., the merge of bidding zones has to be taken into account to demonstrate that we achieve the highest social welfare gain. Or ideally, the starting point of the iterative approach should even be a single BZ for Europe, which is then disaggregated step by step. The later option would also solve ACER's problem of finding an agreement on which BZs to merge. By concept, the proposed BZ configurations will then be a rule-based choice of the iterative approach, not a discretionary agreement among stakeholders.
Furthermore, an LMP algorithm can give an indication of economic efficiency (in the short run). However, the capacity allocation process is different in zonal pricing and it carries a distinct set of uncertainties (in the Base Case derivation, GSK set-up, etc. in Flow-Based Market Coupling and others in NTC-based Market Coupling). Therefore, a proxy for economic efficiency using LMP results tends to overstate economic efficiency gains. Therefore, the capacity allocation process should be taken into account in the clustering technique.
UNIPER considers it far from sufficient to only assess one target year through LMP simulations. There are several substantial system changes underway (grid expansion measures, coal phase-outs, renewable projects (auction-based and merchant) and others). Selecting one single year provides a snapshot (of a somewhat arbitrary year) but does not provide a comprehensive picture which can form the basis of a longer-term market design change. This comment is further supported by our arguments under item 1.1.
The description does not lay out how uncertainties are handled in the iterative approach. An LMP simulation will be subject to underlying assumptions, such as commodity prices, capacities, availabilities, weather (solar irradiation, wind and hydrology), etc. An alternative BZ configuration must be robust to the associated volatilities, and an iterative approach must take that into account. From the current proposal, this does not seem to be the case.
The preselection of graph-based and constrained clustering approaches has not been explained. UNIPER therefore would request more details on such preselection in order to comment.

The stop criterion for the proxy of economic efficiency has not been quantified in ACER's description. UNIPER therefore would request more details on such criterion in order to comment.

4.2. In your view, how many alternative bidding zone configurations per bidding zone review region should be analysed during the bidding zone review to ensure an adequate level of representativeness, while still allowing transmission system operators to comply with the timeline set out in Article 14(6) of the Electricity Regulation?

at most 1 choice(s)

- [x] Less than 5
- [ ] Between 5 and 10
- [ ] More than 10

Topic 5: Other comments

5 Please provide any other comments on the high-level approach and add a sufficient explanation.

4999 character(s) maximum

Uniper would like to stress that the following aspects should be taken into account as well:
Market indicators such as liquidity (market volume) and number of market participants have to be considered.
Data transparency has to be ensured. A constructive and valid feedback from stakeholders is only possible if all data of all considered alternatives bidding zones configurations and scenarios are available or published.
As explained above, the alternative BZ configurations must be robust to typically uncertain parameters (commodity prices, capacity changes, availabilities, weather). UNIPER considers that this point is missing in the current description but must be taken into account.
UNIPER considers it far from sufficient to only assess one target year through LMP simulations. There are several substantial system changes underway (grid expansion measures, coal phase-outs, renewable projects (auction-based and merchant) and others). Selecting one single year provides a snapshot (of a somewhat arbitrary year) but does not provide a comprehensive picture which can form the basis of a longer-term market design change.

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