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| PSE  Response to the ACER public consultation on the influence of existing bidding zones on electricity markets  (PC 2013 E 04) |
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# The influence of existing bidding zones on electricity markets

Successful implementation of the European integrated electricity market depends on the way the rules for the cross-border electricity market are aligned with the technical capabilities of the interconnected power systems. It is of utmost importance that cross-border trading arrangements are based on coordinated capacity calculation and allocation. In that respect, future cross-border market rules must ensure that all cross-border transactions are coordinated so as to ensure that interdependencies between cross-border transactions and the resulting power flows are correctly managed and constraints in the whole interconnected power system are taken into account. Therefore the issue of appropriate bidding zones definition is of utmost importance to ensure successful development of European integrated electricity market and secure power systems operation.

PSE welcomes the public consultation on the influence of existing bidding zones on electricity markets and sees a real need to assess current bidding zones configuration, particularly in the Central Eastern Europe (CEE) region. This initiative of ACER constitutes the first public consultation on the important issue of bidding zones and may increase chances that the current, by far inadequate, status quo will be modified to reflect current situation and experience on electricity market and power system operation gained in past years.

PSE is convinced about the need for a proper coordination of cross-border capacity calculation and allocation in the CEE region. The utmost priority is to ensure that all borders between EU Member States are treated equally. Cross-border exchanges between two EU Member States, such is the case of Germany and Austria, should be subject to the same rules as exchanges in other part of Europe, as defined in Regulation 714/EC/2009. Such an arrangement would eliminate discrimination and ensure fair treatment of market participants throughout the CEE region. In meshed grids, with high interdependencies of power flows, unlimited exchange capacities on one border do not exist. Especially in case of border between Germany and Austria where significant part of commercial exchange is transmitted through Polish grid and temporary causes an unsecure operation.

# Consultation questions

1. How appropriate do you consider the measure of redefining zones compared to other measures, such as, continued or possibly increased application of redispatching actions or increased investment in transmission infrastructure to deal with congestion management and/or loop flows related issues? What is the trade-off between these choices and how should the costs attached to each (e.g. redispatching costs) be distributed and recovered?

Redefining bidding zones is a means to address the fundamental market imperfections like i.e. inability of market solution to ensure technically feasible dispatch and lack of level playing field for all market participants in the different EU countries. Redispatching in fact does not solve the root cause of the problems but only tries to address the symptoms.

Redispatching is therefore a “out-of-market correction measure”, necessary to ensure secure operation of the grid that was not possible to be obtained based on the market outcome. However, if the redispatching measures are not possible, the system will operate outside of security limits, threatening stable operation of the whole interconnected power system.

Given the fact that European power system is zonal, some approximation of physical reality in the market model are inevitable. Hence, redispatching will most likely remain to be needed from time to time. It must therefore be ensured, that cost of re-dispatching is shared according to the polluter pays principle, i.e. cost of redispatching actions shall be covered by entities, which cause problems to be solved by this action. However, in the zonal market design it is only possible to determine the polluter at member states level (bidding areas), thus costs of redispatching are socialized within bidding zone, while only some of entities get profits from redispatching. Therefore, the redispatching cannot send clear and proper market signals. If the redispatching occurs frequently, then the signals derived from redispatching actions are available only for some incumbent entities and may create incentives to aggravate the congestion.

Redefining of bidding zones and development of transmission network are much more efficient solutions. Although both of them may lead to the similar results, these measures differ significantly. Redefinition of bidding zones could be done relatively fast, and hence improve situation in mid and short term horizon. The cost of redefining bidding zones is however difficult to estimate (some indicative values can be assessed based on Swedish case). Costs of the investments in the infrastructure are usually much easier to estimate, however implementation of these changes requires much more time and can be perceived only as long-term solution. The costs of infrastructure development and bidding zones configuration shall be distributed among TSOs and Markets Participants, as all of them would benefit from introduced changes.

1. Do you perceive the existing bidding zone configuration to be efficient with respect to overall market efficiency (efficient dispatch of generation and load, liquidity, market power, redispatching costs, etc.) or do you consider that the bidding zone configuration can be improved? Which advantages or disadvantages do you see in having bidding zones of similar size or different size?

Existing bidding zone configuration in Continental Europe is definitely inefficient. We can observe many structural problems as massive amount of unscheduled power flows and increasing volume of re-dispatching. All this cause that huge amount of cross-border transmission capacity is on regular basis used outside of market-based coordinated cross-border exchange mechanism . Also high amount of generation capacity is dispatched due to redispatching measures, which does not ensure optimal usage of available resources. This causes that some market participants are privileged against others and achieved social welfare is reduced as some potentially efficient transaction are blocked.

If electricity market is organized as implicit auctions with flow based capacity allocation (as envisaged in Target Model) efficiency of bidding zones will not depend from their size but from their shape and network topology. If bidding zone has wrong “shape” (e.g. common market area of Germany and Austria) it may significantly distort PTDF’s which are dependent from distribution of generation and load within this zone.

What must be strongly underlined is that the size of bidding zone does not limit market liquidity inside of that zone. Smaller bidding areas will allow for better efficiency of capacity calculation process, and hence it should allow for more cross-border trade. At the same time, implicit auction will ensure that all cross-zonal exchange possibilities will be immediately used by mechanism depending on market conditions within and outside of bidding zone.

1. Do you deem that the current bidding zones configuration allows for an optimal use of existing transmission infrastructure or do you think that existing transmission infrastructure could be used more efficiently and how? Additionally, do you think that the configuration of bidding zones influences the effectiveness of flow-based capacity calculation and allocation?

Leaving aside the issue of explicit auctions vs implicit auction (implicit will be implemented everywhere in Europe soon), it is fair to say that existing bidding zone configuration in Continental Europe definitely does not allow for optimal use of existing capacity. This is clear from the fact, that some of the CEE countries need to limit their exchange capacities in order to mitigate security threats caused by unplanned power flows created by uncoordinated exchanges in other parts of the region. Each case where cross-border capacity is reduced due to uncoordinated trade in other parts of the grid is a potential inefficiency as the priorities for trade are not made on basis of economic consideration, but are done unilaterally by uncoordinated decisions.

We can observe many structural problems in the CEE region, such as massive amount of unplanned power flows and increasing volume of re-dispatching. All this causes that huge amount of transmission capacity is used out of market on regular basis without allocation. Therefore capacity often is not allocated to the most effective transactions but to the transactions having priority due to ineffective biding zone configuration (i.e. transactions not being subject to capacity allocation that creates significant power flows on other borders). That is the clear discrimination of some market participant that are required to obtain the transmission capacity, and cause that transmission transactions are not properly priced and do not contribute to proper development of transmission grid. Moreover high level of loop flows and consequently high uncertainty and large amount of redispatching actions require that relatively high volume of transmission capacity is reserved to deal with these problems (so called reliability margin). Better configuration of bidding zones, which would bring less uncertainty would allow to return part of this capacity to the market.

The efficiency of Flow-Based allocation methodology (FBA) will certainly depend on the bidding zones configuration. FBA could help solving the problem of uncoordinated transits between the bidding zones. However, if some EU Member States still decide not to coordinate their exchanges, FBA will not be able to improve the situation. In CEE, the highest by far share of trade is realized on the border between Germany and Austria. If FBA does not coordinate these exchanges, it will be ineffective to ensure coordination of trade in the region. Moreover, all other cross-border exchanges will be subject to coordination, distorting the level playing field of market participants in the different CEE countries.

In the long run, bidding zones should be defined based on technical criteria. Hence, coordination of trade should not only be for cross-border exchanges, but also for all exchanges inside current bidding zones which cause a significant effect on power flows outside of the bidding zone. Hence, PSE is looking with attention to the bidding zones redefinition process initiated by the CACM Network Code.

1. How are you impacted by the current structure of bidding zones, especially in terms of potential discrimination (e.g. between internal and cross-zonal exchanges, among different categories of market participants, among market participants in different member states, etc.)? In particular, does the bidding zones configuration limit cross-border capacity to be offered for allocation? Does this have an impact on you?

As has been described in the common V4 studies of Czech, Polish, Slovak and Hungarian TSOs[[1]](#footnote-1) in Poland we can observe significant levels of unplanned power flows. One of the reasons for this is an uncoordinated exchange between Germany and Austria that is not backed by sufficient transmission capacity to accommodate that trade within the Germany and Austria market areas. Due to this fact significant part of transaction between producers in northern Germany and consumers in Austria or southern Germany flows through Polish and Czech network. This situation causes that there is very little available import capacity on the border from Germany to Poland and Polish market participants cannot use it and get access to energy offers from Germany. Unplanned power flows in the polish system are also limiting export capacities from Poland to Germany, Czech Republic and Slovakia, limiting possibilities of exporting energy for polish producers.

1. Would a reconfiguration of bidding zones in the presence of EU-wide market coupling significantly influence the liquidity within the day-ahead and intraday market and in which way? What would be the impact on forward market liquidity and what are the available options to ensure or achieve liquidity in the forward market?

Liquidity is not an administrative decision. It is not created by forming artificially large bidding areas, but it is given by physical means of the transmission grid. Market power is therefore a physical network issue. If there is limited number of generators able to supply energy to particular consumers due to power system limitations, this will remain so whatever the bidding zone configuration! One could administratively form a large bidding zones but this would only be artificial liquidity – visible in the wholesale market but impossible to be realized in reality due to system constraints. Hence, transactions concluded in the wholesale market based on “artificial” liquidity would need to be redispatched back by the TSO.

After improving bidding zones configuration, cross-border capacity calculation will improve (less assumptions, less uncertainties) and therefore the liquidity on the European level shall increase. The ineffective bidding zone configuration create requirement for high reliability margins thus reduces amount of transmission capacity that is available to market participants. Liquidity within given bidding zone will depend on the available transmission capacity on its border. In some areas this liquidity will increase while in other could decrease. However, one should notice that these increases and decreases will better reflect network topology and hence physical possibilities of transmission between given areas.

1. Are there sufficient possibilities to hedge electricity prices in the long term in the bidding zones you are active in? If not, what changes would be needed to ensure sufficient hedging opportunities? Are the transaction costs related to hedging significant or too high and how could they be reduced?

Currently, due to the high level of unplanned power flows resulting from actual bidding zones configuration, there is almost no offered import capacity to Poland, while offered export capacity is often reduced. This is already one of the main reasons for reducing electricity price hedging possibilities, as such hedging could only be provided by internal generating resources.

1. Do you think that the current bidding zones configuration provides adequate price signals for investment in transmission and generation/consumption? Can you provide any concrete example or experience where price signals were/are inappropriate/appropriate for investment?

Current bidding zones configuration does not provide adequate price signals for investments. The problems concern both generation and transmission investments.

In case of transmission investments, especially the ones aiming at increasing of cross-border capacities, unplanned power flows can often undermine the investment case. Potential increase of interconnection capacity is often consumed by increase of unplanned power flows, and therefore envisaged increase of commercial trading capacities for market participants does not materialize. Moreover, there is no incentives for the countries which are causing unplanned power flows to invest in internal transmission lines, which would be the correct measure to mitigate the issues. The important issue is therefore cost sharing of such investments, as in case of inappropriate biding zones configuration strengthening of transmission network may bring most profits to entities, which cause loop flows and not to entities connected in given bidding zone

Incorrect bidding zone definition also negatively affects the generation investments. As unplanned power flows limit offered cross border transmission capacity in zones which they are going through they also reduce incentives to investment in generation capacity in this area.

1. Is market power an important issue in the bidding zones you are active in? If so, how is it reflected and what are the consequences? What would need to be done to mitigate the market power in these zones? Which indicator would you suggest to measure market power taking into account that markets are interconnected?

Currently there are over 50 trading companies competing in wholesale electricity market in Poland. This figure includes 6 major generating companies who are the owners of big power plants in Poland. PSE monitors market power at the Balancing Market timeframe. If there is limited number of generators able to supply energy to particular customers due to transmission system limitations and they offer energy prices higher than hourly energy cost determined at the Balancing Market, this is considered as a possible case for exercising of market power and the supplying generators are settled against their cost based prices.

1. As the reporting process (Activity 1 and Activity 2) will be followed by a review of bidding zones (Activity 4), stakeholders are also invited to provide some expectations about this process. Specifically, which parameters and assumptions should ENTSO-E consider in the review of bidding zones when defining scenarios (e.g. generation pattern, electricity prices) or alternative bidding zone configurations? Are there other aspects not explicitly considered in the draft CACM network code that should be taken into account and if so how to quantify their influence in terms of costs and benefits?

PSE is involved in these activities on the ENTSO-E level. However, bearing in mind the differences in operational conditions in the different EU countries and the resulting differences in the TSO views on the matter of bidding zones definition, PSE is taking this ACER Consultation as the opportunity to express its position as a TSO of one of the countries negatively influenced by incorrect bidding zones definition and insufficient coordination of cross-border trade.

PSE is looking with attention to the bidding zones redefinition process initiated by the CACM Network Code. Our main expectation is the so much needed strengthening of coordination in capacity calculation and allocation in Europe, ensuring secure operation of the interconnected power system and level playing field of all market participants in the EU to facilitate efficient trading across EU.

1. In the process for redefining bidding zones configuration, what do you think are the most important factors that NRAs should consider? Do you have any other comments related to the questions raised or considerations provided in this consultation document?

The most important factors to be considered by NRA during redefinition of bidding zones:

* Influence of internal transactions in given bidding zone on other zones in the context of trading opportunities (fair distribution of trading capacities) and secure operation of the interconnected European power system.
* Frequency of remedial actions caused by loop and transit flows (non-costly and costly). One should bear in mind that remedial measures are not always possible, and relying on them too often creates a higher risk.
* Cost of remedial actions caused by loop and transit flows and distribution of cost of remedial actions and benefits between bidding zones / member states resulting from given configuration. Critical factor here is the adequate key for sharing of these costs, so that the Member States that create security problems in other MS are the one who also cover the costs of needed redispatching (so called “polluter pays principle”).

1. See <http://www.pse.pl/uploads/pliki/17225Position_of_CEPS_MAVIR_PSEO_SEPS-Bidding_Zones_Definition.pdf>

   and <http://www.pse.pl/uploads/pliki/Unplanned_flows_in_the_CEE_region.pdf> [↑](#footnote-ref-1)