

## Towards an efficient intraday market design



### *EFET<sup>1</sup> position paper – 6 May 2020*

Creating a market design that is well-suited to the features and needs of all market participants while contributing to a more efficient dispatch is essential for the integration of existing and new technologies and services and the contribution of the electricity sector to the decarbonisation of the economy. The growth of intermittent RES electricity generation and the development of demand response and storage increase the need and opportunities for adjustments closer to real time. This suggests a growing role and importance for the intraday (ID) market and requires a careful assessment of the most appropriate and efficient ID market design.

With the go-live of XBID (the platform for continuous cross-border intraday trading) and the gradual extension of Single Intraday Coupling (SIDC), European intraday markets have become increasingly connected, efficient, and liquid. At the same time, the introduction of auctions (regional or pan-European, as a means of implementing capacity pricing) has posed a challenge for the coherence of the intraday market model.

Beyond the debate on the fundamental features of intraday markets, whichever the final market design, a number of technical features would also require proper attention to ensure its proper functioning, especially in view of the transitional phase between current and target market design. Those include introducing capacity recalculation post day-ahead clearing, increasing the granularity and complexity of (cross-border) intraday products, and ensuring early and effective gate opening and late gate closure times, while safeguarding efficiency.

### **Summary of EFET recommendations**

- Removing barriers to ID liquidity growth.
- Developing cross-border products with a 15-minute granularity and harmonising the imbalance settlement period to 15 minutes across Europe.
- Ensuring the effective harmonisation of cross-zonal intraday gate opening time (ID CZ GOT) and opening of shared order books at 15:00 (CET).

---

<sup>1</sup> The European Federation of Energy Traders (EFET) promotes and facilitates European energy trading in open transparent, sustainable and liquid wholesale markets, unhindered by national borders or other undue obstacles. We currently represent more than 100 energy trading companies, active in over 28 European countries. For more information, visit our website at [www.efet.org](http://www.efet.org)

- Setting cross-zonal intraday gate closure time (ID CZ GCT) to 15 min before the start of the relevant market time unit and ideally, even closer to delivery.
- Implementing clear, transparent and harmonised capacity calculation and recalculation methodologies and frequency.
- Ensuring that the technical price limit in ID includes an adjustment mechanism to reflect VoLL.
- Ensuring minimum interruption time of the three pan-European auctions required by ACER decision by postponing their implementation until 15 min products are available.

### **The intraday target model: a continuous market with implicit capacity allocation**

Commission Regulation ([EU\) 2015/1222](#) of 24 July 2015, establishing a guideline on capacity allocation and congestion management (CACM GL), defines the target model for the single European market for electricity in the day-ahead (DA) and ID timeframes. It describes the target model for the intraday market as an implicit continuous trade-matching algorithm, allowing the coupling of intraday markets at EU level, with first-come first-served allocation of capacity (Article 51).

The CACM GL also foresees the implementation of a methodology to price cross-zonal intraday capacity (Article 55). To do so, ACER decided on 24 January 2019<sup>2</sup> to introduce three pan-European auctions for the pricing of capacity. The single intraday coupling (continuous trading) will continue to run in-between these auctions, but it will be interrupted for the duration of the auctions (60 min per auction at go-live, expected to be reduced to 40 min a year later).

In addition, the CACM GL offers the possibility for individual regions to implement complementary auctions (Article 63), again with continuous trading running in-between these local auctions. So far, only the Iberian Peninsula has implemented regional auctions, and Italy has finalised but not yet implemented its proposal for complementary auctions at its borders.

#### **I. Why should continuous trading be safeguarded?**

The debate regarding the design of intraday markets at the EU level revolves around continuous trading versus auctions. EFET has been a strong supporter of continuous cross-border intraday trading for years. While both designs come with advantages and drawbacks, we consider continuous trading a better option, in particular as it improves the reaction capacity of market participants close to real time, which is essential for the integration of RES into the market and the development of innovative technologies and services such as demand response and storage. The introduction of regional or pan-European auctions, on the other hand, would drain liquidity from continuous trading, thereby reducing severely its efficiency.

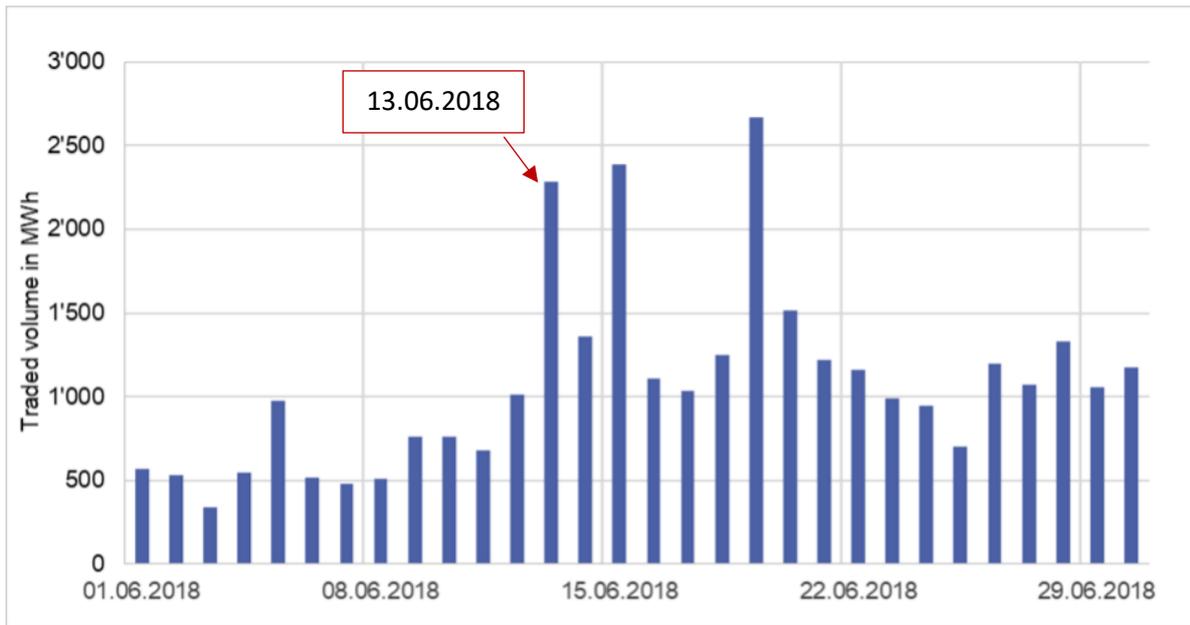
---

<sup>2</sup> ACER Decision establishing a single methodology for pricing intraday cross-zonal capacity, 24 January 2019, [https://acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Individual%20decisions/ACER%20Decision%20001-2019%20on%20intraday%20cross-zonal%20capacity%20pricing%20methodology.pdf](https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Individual%20decisions/ACER%20Decision%20001-2019%20on%20intraday%20cross-zonal%20capacity%20pricing%20methodology.pdf)

1. More and faster trading opportunities

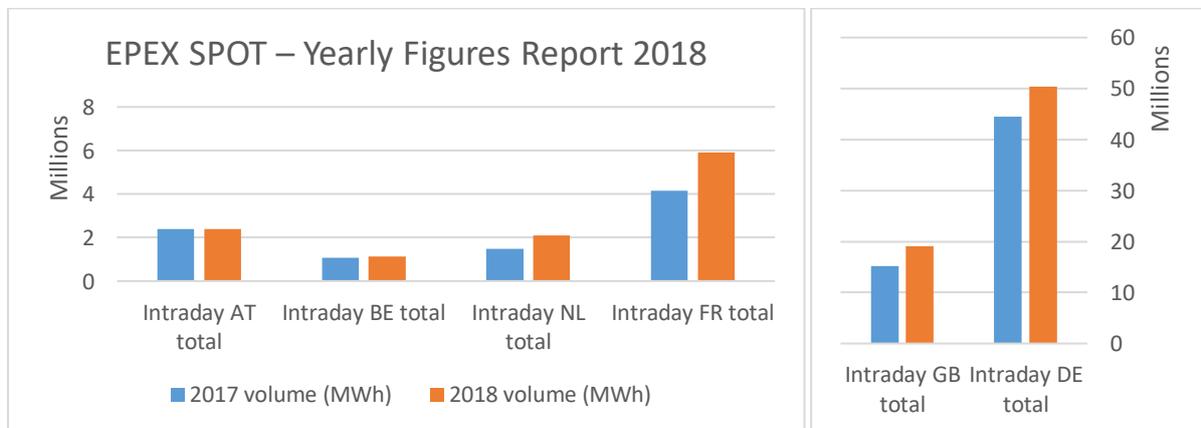
Continuous cross-border intraday trading allows for better and faster trading opportunities compared to auctions. It is perfectly suited to deliver an almost real-time price signal and allows market participants to optimise continuously the dispatch of their production and consumption units close to real time, as market and physical conditions evolve. It is worth noting that the last hour before delivery is the most vital for market participants and is where most trades on continuous ID markets take place. The recent, albeit short, experience following the launch of XBID (figure 1 and figure 2) shows a surge in intraday transactions in bidding zones and at borders where continuous trading was previously not available.

**Figure 1.** Volume traded in the German intraday market in June 2018 - before and after the introduction of XBID (go-live of XBID on 13 June 2018)



Source: Market Transparency 2018, EICom Report, p.16, <https://www.elcom.admin.ch/dam/elcom/en/dokumente/2019/Markttransparenz%202018.%20Bericht%20der%20ELCom.pdf.download.pdf/Market%20Transparency%202018.%20EICom%20Report.pdf>

**Figure 2.** Volume traded on EpexSpot in the intraday market, 2017-2018 comparison



Source: "Traded volumes soar to an all-time high in 2018," EpexSpot Press Release, 10 January 2019, <https://www.epexspot.com/en/news/traded-volumes-soar-all-time-high-2018>.

2. *A market design better suited for intermittent RES generation, demand-response and storage*

For RES integration into the market, continuous trading is more advantageous, as it offers an instantaneous possibility for market participants to trade, allowing them to adjust their position continuously, according to production forecast updates (without having to wait until the next auction).

In addition, continuous cross-border intraday trading with coupling products with lower granularity, e.g. 15-minute, would make the market design even better suited for RES generation.

Technologies and services such as demand-response and storage, which are particularly suited to absorb the effects of RES generation intermittency, also benefit from continuous trading and shorter granularity. Safeguarding and improving the efficiency of continuous trading would contribute to the development of these activities.

3. *Minimising the volume and cost of TSOs' balancing activity*

The *market vs. security* dichotomy, where continuous trading represents “more market” and auctions mean “more security,” is sometimes put forward. This debate, however, is misleading. Allowing market participants to use cross-border capacity very close to real time to adjust their positions close to delivery, combined with adequate TSO transparency on system state, is the best means to ensure system security. This reduces the need for residual balancing by TSOs and thus, improves system security.

## **II. Some criticisms of continuous trading addressed**

1. *Price discovery*

One of the criticisms of the continuous trading system<sup>3</sup> is that the first-come first-served allocation of transmission capacity inherent to it does not allow for congestion-based pricing of transmission capacity. As a result, dispatch distortions are created in the short term, and investment distortions in the long term.

We do not agree with this line of thinking. Fundamentally, pricing scarce intraday cross-zonal capacity is about redistribution of benefits from market participants to TSOs, rather than about increasing social welfare. All things equal, it is primarily a question between the benefits of first-come-first-served capacity for market participants – with an ultimate redistribution to end-consumers via lower energy costs in their bill – and the benefits of reduced congestion for TSOs – with an ultimate redistribution to end-consumers via lower transmission costs in their bill. Besides, pricing intraday capacity, if it has not been recalculated after day-ahead clearing, would be tantamount to pricing it twice, as left-over capacities from day-ahead were valued at zero at that point in time.

---

<sup>3</sup> “The future electricity intraday market design,” TRACTEBEL Advisory and Advanced Analytics, March 2019, [https://op.europa.eu/en/publication-detail/-/publication/f85fbc70-4f81-11e9-a8ed-01aa75ed71a1/language-en?WT.mc\\_id=Searchresult&WT.ria\\_c=null&WT.ria\\_f=3608&WT.ria\\_ev=search](https://op.europa.eu/en/publication-detail/-/publication/f85fbc70-4f81-11e9-a8ed-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=null&WT.ria_f=3608&WT.ria_ev=search)

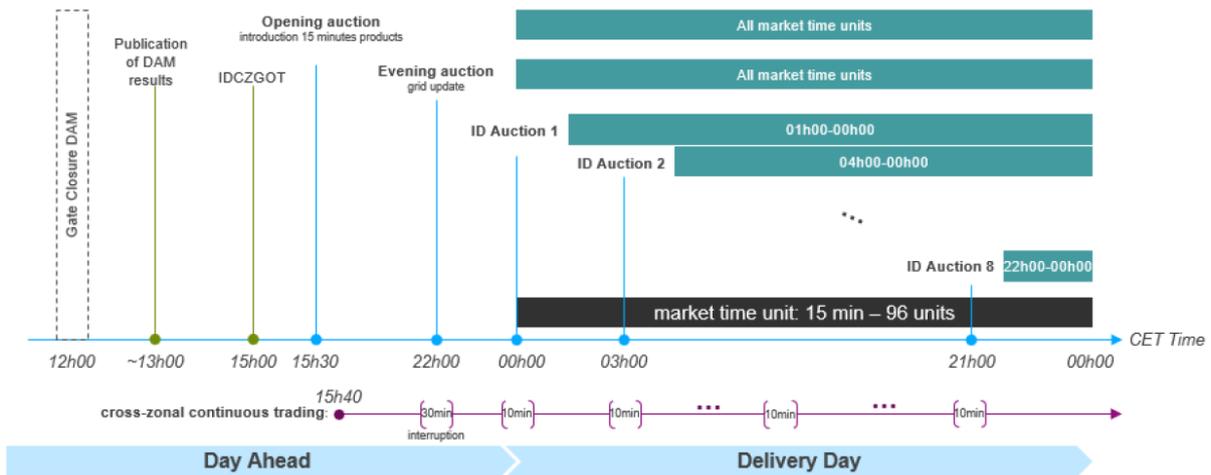
So far, TSOs have made a convincing case neither for real welfare gains linked to the introduction of intraday capacity pricing itself, nor for a solution that would limit the negative effect of intraday capacity pricing auctions on the continuous market. Considering all this and the fact that intraday capacity pricing auctions will necessarily have a disruptive effect on the efficiency of continuous trading (XBID interruptions, liquidity drain), we see intraday auctions as risking to create welfare losses rather than gains.

## 2. Participation of new and smaller market participants

It is argued that auctions would be easier to manage for new and smaller market participants. However, even if limited to 3 per day, as described in the ACER Decision of 24 January 2019, they could not be covered by an office with normal working hours, because the auction taking place at 22:00 would require a late shift. If the number of auctions increases to double digits, then a 24/7 trading desk would be required, similarly to continuous trading. Hence, the effort that would be required of new or smaller market participants would not differ fundamentally between continuous trading and highly frequent auctions. Moreover, market participants offer 24/7 services to new and/or smaller market participants at competitive rates, which means that access to the market is already facilitated for new and smaller market participants.

It is vital that capacity pricing methods do not affect negatively the efficiency and liquidity of cross-border continuous trading. It is already clear that the three auctions decided by ACER will interrupt continuous trading by 60 minutes (30 min before and 30 min after GCT) at the go-live, to be reduced to 40 min (20+20) at a later stage. A dozen or so additional auctions (see figure 3) would simply drain liquidity and destroy XBID and the continuous market.

**Figure 3.** Interruptions in the case of ten auctions, estimated by TRACTEBEL study: 110 minutes of continuous trading interruption



Source: "The future electricity intraday market design," TRACTEBEL Advisory and Advanced Analytics, 2019, p.39, [https://op.europa.eu/en/publication-detail/-/publication/f85fbc70-4f81-11e9-a8ed-01aa75ed71a1/language-en?WT.mc\\_id=Searchresult&WT.ria\\_c=null&WT.ria\\_f=3608&WT.ria\\_ev=search](https://op.europa.eu/en/publication-detail/-/publication/f85fbc70-4f81-11e9-a8ed-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=null&WT.ria_f=3608&WT.ria_ev=search)

### 3. *Lack of a reference price*

Intraday markets have been criticised for their lack of a reference price. This criticism, however, is unfounded. Intraday indices do exist. EPEX SPOT, for instance, offers standard ID reference prices for every market in which they operate. ID reference price indices can be calculated and there are already a number of examples where they have been used (e.g. EPEX SPOT ID indices, UK ID market indices used for pricing PPAs).

The real issue with reference prices is whether there is sufficient liquidity when an index is generated. Provided that there is liquidity, an index can be calculated. Auctions are usually promoted for their ability to generate a reference price, but this is misleading. Not every auction offers a good reference price – it would have to have sufficient volume for that. With the removal of constraints on the growth of ID market liquidity, there is no reason why continuous intraday markets cannot produce reliable reference prices.

## III. Recommendations for an efficient cross-border intraday market design

We see the future of intraday in Europe as a market where continuous trading keeps its central place and its remit is extended beyond current limitations to allow market participants to reap opportunities from growing liquidity. It should also allow market participants to balance their portfolio and, where possible, play their role to the fullest extent possible in supporting the system, from the closure of the day-ahead market until very close to real time, as volatility of production and demand increases in the future.

To improve the health and efficiency of intraday markets, there are several areas where immediate action should be taken:

- **Drawing a clear distinction between physical schedules and commercial flows:** A number of jurisdictions maintain legal requirements for market participants to be balanced in DA. These requirements are a) impractical, as DA forecasts are increasingly unreliable due to the growing share of RES, and b) constitute a hindrance on portfolio optimisation and proprietary trading.

Market participants must be free to optimise their full portfolio across all timeframes until the gate closure of the intraday market. Turning the obligation to be balanced in DA to a simple notification of physical schedules without concern for a market participant's commercial position in DA (regardless whether the market participant is an asset owners or not) would both ensure that TSOs receive in a timely manner accurate information for planning purposes and remove a considerable restriction on free price formation.

- **Portfolio bidding across Europe:** The market model chosen in certain Member States continues to mandate market participants to bid separately for each unit in the intraday market or imposes portfolio optimisation restrictions, while market participants in most other bidding zones can optimise their portfolio without linking bids to specific units and can net freely positions prior to trading. This “unit bidding” model either prevents market participants from deviating from schedules linked to individual transactions, or requires them to trade on the market every variation of schedules, rather than simply allowing the reallocation of production or demand within the same portfolio.

Portfolio bidding allows for a more efficient optimisation of production and demand portfolios and is a necessary precondition for improving liquidity in the intraday market. We call for the introduction of this market model everywhere where unit bidding is still mandatory or portfolio use restrictions are in place.

- **Capacity calculation and recalculations in intraday:** The adoption of capacity calculation methodologies (CCM) for intraday according to the CACM GL requirements has been a lengthy process. At this stage, most regions have adopted their CCM, but how, how fast, and how frequently calculation and recalculations of cross-zonal capacities will be performed in intraday remains unclear. The ACER Decision of 21 February 2019<sup>4</sup> recommends, for the Core region, that capacity calculation and recalculation for ID is carried out at least in accordance with the required auction schedule - first calculated by ID CZ GOT (i.e. 15:00 D-1), using the cross-zonal capacity remaining from the day-ahead timeframe, then at 22:00 D-1, and later at 10:00 on the delivery day. Paragraph (52) of the ACER Decision of 24 January 2019 on intraday capacity pricing appears to recommend these deadlines for intraday capacity (re)calculation for the whole SIDC area. We call on TSOs to implement these requirements.

When ID capacity (re)calculation is performed, TSOs should inform market participants of available volumes, as well as any use of ID capacities by TSOs themselves for countertrading or redispatch. Concretely, all the information on ID cross-border capacities available in the Capacity Management Module (CMM) should be shared transparently with all market participants.

- **Development of products with a 15-minute granularity (both in DA and ID) and harmonisation of the imbalance settlement period (ISP) to 15 minutes across Europe:** Full harmonisation should include 15-minute ISP, 15-minute cross-border granularity (gates) and 15-minute granularity of tradable products. Due attention should, of course, be given to the performance of the day-ahead and intraday coupling algorithms to ensure coupling operations remain at least at the same level of reliability as today. A feasibility study with respect to cross-product matching on continuous trading between the moment 15-minute products are introduced and all ISPs are harmonised to 15 minutes should be carried out.
- **Effective harmonisation of cross-zonal intraday gate opening time (ID CZ GOT):** Although ACER has set<sup>5</sup> the cross-zonal intraday GOT to 15:00 (CET) D-1 for the whole of Europe, many TSOs in Continental Europe do not offer capacity until much later – e.g. up to 22:00. We oppose this reading of the CACM GL and the ACER Decision, resulting in a CZ GOT in name only and circumventing the ACER Decision. We request that at least the capacity left from the DA timeframe should be offered at

---

<sup>4</sup> ACER Decision on the CORE CCR TSOs proposals for the regional design of the day-ahead and intraday common capacity calculation methodologies, 21 February 2019, [https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Individual%20decisions/ACER%20Decision%202002-2019%20on%20CORE%20CCM.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Individual%20decisions/ACER%20Decision%202002-2019%20on%20CORE%20CCM.pdf)

<sup>5</sup> ACER Decision on TSOs' proposal for intraday cross-zonal gate opening and intraday cross-zonal gate closure times, 24 April 2018, [https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Individual%20decisions/ACER%20Decision%202004-2018%20on%20IDCZGTs.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Individual%20decisions/ACER%20Decision%202004-2018%20on%20IDCZGTs.pdf)

the GOT, if TSOs' calculations allowing for new capacity to be offered have not been done yet.

In addition, to improve liquidity on the market, we request the sharing of order books by all NEMOs from the official CZ GOT set by ACER at 15:00, in line with the requirement that order books should be shared for the whole duration of SIDC. Local technical or regulatory hurdles to this should be removed to ensure full compliance with the ACER Decision.

- **Cross-zonal intraday gate closure time (ID CZ GCT) set to 15 min before the start of the relevant market time unit**, with possible exceptions of 30 or 60 minutes before real time as a transitional measure and only if properly justified. In the long run, the ID CZ GCT should be set even closer to the start of a relevant market time unit.

The benefits of cross-border intraday trading closer to delivery are higher in cases of structural differences in the generation mix on each side of a border. This applies, for example, to borders with large shares of wind generation on one side and large shares of hydro generation on the other. For the sake of improving liquidity throughout the ID timeframe, including at local level, it is important to extend the sharing of order books by NEMOs until local ID GCT. Where local ID GCT is already 15 or even 5 minutes before delivery, and as market design evolves in other places towards extending the ID market closer to real time, continued sharing of order books until local ID GCT would be particularly beneficial.

- **Technical price limits in intraday**: For single intraday coupling, ACER set a technical price limit of +/- 9,999 EUR/MWh in its Decision of 14 November 2017.<sup>6</sup> The intraday technical price limits, however, do not foresee an automatic readjustment mechanism when prices come close to the limit, as is the case for day-ahead price limits. ACER should review its Decision to ensure compliance with Article 10.2 of Regulation 2019/943 and include an automatic readjustment mechanism that would allow the technical price limit in intraday to effectively reflect the value of lost load (VoLL).
- **Keeping the negative impact of auctions on continuous trading to a minimum**: Ideally, intraday auctions should not be implemented in parallel to continuous trading, as their harmful impact on the liquidity of the continuous market would outweigh considerably the advantages suggested by their proponents. Auctions only make sense if they are used to allocate additional amounts of cross-zonal capacity. We nonetheless take note of ACER's Decision to introduce three pan-European auctions to complement continuous trading.

However, we call for reducing the interruption time that the pan-European auctions would cause to continuous trading. In particular, we seek confirmation that one year following the go-live of these auctions, the interruption will, in effect, be reduced from 60 min per auction to 40 min at most. It should be the goal of TSOs to reduce the

---

<sup>6</sup> ACER Decision on the NEMO's proposal for harmonised maximum and minimum clearing prices for single intraday coupling, 14 November 2017, [https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Individual%20decisions/ACER%20Decision%202005-2017%20on%20NEMOs%20HMMCP%20for%20single%20intraday%20coupling.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Individual%20decisions/ACER%20Decision%202005-2017%20on%20NEMOs%20HMMCP%20for%20single%20intraday%20coupling.pdf)

interruption time of XBID induced by the pan-European auctions to 10 minutes maximum.

Further, we oppose market design proposals that would increase the number of pan-European auctions beyond the three auctions foreseen in the ACER Decision, as that would have an even greater detrimental effect on the liquidity of the continuous market.

Should complementary regional auctions be introduced in certain regions, they should be accessible to all market participants without discrimination, i.e. irrespective of location or physical asset ownership. They should be designed from the start to ensure that each auction does not interrupt XBID for more than 10 minutes, as per Article 63.2 of the CACM Regulation.