Background and Summary

Energy Traders Europe and Eurelectric have regularly expressed concerns regarding the potential implications of the implementation of a co-optimisation process by TSOs for the exchange of balancing capacities. In particular, one needs to consider the potential impacts of co-optimisation on established processes on market participant's side as well as on TSO's and NEMO's sides.

While we understand that implementing the co-optimisation methodology is a possibility opened by the Electricity Balancing Guideline (EBGL), we strongly urge NRAs and policy makers to advise TSOs to refrain from setting up balancing capacity cooperations based on such an approach as long as R&D activities have not identified acceptable solutions to the challenges it raises.

In particular, challenges such as algorithmic and bidding complexities or the compatibility with the flow-based need to be resolved. The market impacts (e.g. algorithmic simplifications or market design changes) of the solutions identified would eventually need to be accounted for in the actual welfare assessment of co-optimisation and the final implementation decision should be based on the respective outcome. If the theoretical benefits of co-optimisation cannot be realized considering real-world constraints and the benefits are outweighed by negative practical consequences, any further implementation steps should be stopped.

Main concerns related to co-optimisation

With co-optimisation market participants are simultaneously bidding for balancing capacity and day-ahead markets. In the current sequential bidding approach, market participants can re-optimise their bids according to the outcome of the preceding auction. To preserve the current bidding options with co-optimisation, complex linking between products and market time units is required.

This would lead to an increased bidding complexity which may not be manageable. Market participants could then need to resort to simplified bidding structures that would not reflect the full potential of their portfolio's capabilities, resulting in higher system costs.

In particular, such bidding complexity could lead to an artificial split of offers between spot and balancing capacity markets. This would have detrimental market impacts, e.g. reduce market liquidity, and **would lead to inefficiencies at a significant social cost which could outweigh any theoretical benefits of co-optimisation**.

The study performed by N-SIDE on behalf of the NEMOs and TSOs as part of the Co-Optimisation IIA Report to indicate feasibility and to demonstrate welfare gains was conducted using artificial bids and only a simplified setup. It is hence neither applicable for assessing potential benefits nor are the computational results meaningful. The costs, i.e. welfare loss, linked to additional **bidding complexity** on market participants is not considered at all.

Aside from the market impacts, the increased complexity introduced by advanced linking will further stress the Euphemia algorithm. The 15 min MTU change in 2025 can already only be tackled by adjusting the tight operational timing and applying further bidding limitations, e.g.

restricting the number of block bids. The **chance of a decoupling** event with significant immediate commercial risks for market participants could increase with the implementation of co-optimisation. This raises potential threats to **system security** because the balancing capacity process will still be open.

Co-optimisation involves solving large, complex optimisation problems that simultaneously consider multiple interrelated aspects of the energy system, such as generation, transmission, storage, and demand-side management. The computational requirements for solving these problems can be extremely high, especially for large-scale systems.

Co-optimisation also has scalability issues: as the number of variables and constraints increases (e.g., with more renewable energy sources, distributed energy resources, and storage systems), the computational complexity grows exponentially. This could significantly complicate the co-optimisation process within the limited time available, especially for large, dynamic grids.

SDAC achievements need to be accounted for in R&D scoping

New R&D considerations for co-optimisation have been initiated recently, following an academic study on behalf of ACER. However, the study has several substantial shortcomings such as an outdated power plant portfolio and oversimplified market behaviour assumptions. The envisaged bid structure without any explicit price for balancing capacity is pointing towards a central dispatch market design relying upon unit-based bidding.

While we can understand such a choice for a modelization purpose, we want to underline that a central dispatch model is contradicting the European energy market structure and needs to be excluded from the R&D considerations.

Without explicit bid prices to represent particular technical constraints for balancing capacity products, market clearing and transparent price formation, as it is, will change and instead of providing straightforward price signals for long-term investments into flexible assets, SDAC and balancing capacity results may be more complex to anticipate and understand.

As participation to balancing capacity and day ahead energy lead to different responsibilities (notably with the firmness of a balancing capacity obligation, unless secondary markets are in place), market participants should keep the ability to choose the market they are active in.

Under a central dispatch model, as market participants are deprived of the ability to define and implement bidding strategies and choices of markets to be active in, the ability of MPs to optimise their assets, as part of their asset ownership, is highly hindered. Specific flexibility services may no longer be remunerated at their actual cost and investment into flexible assets would then be severely discouraged.

As mentioned before, large parts of the SDAC bidding, also for energy-only bids, would need to be unit-based. This would restrict the efficiency gains that market participants can generate by portfolio bidding and self-dispatch up to delivery.

One can assume that market participants will respond to an increased uncertainty by overly complex bidding or arbitrary clearing rules by resorting to simplified bidding structures that would not reflect the full length of their portfolio's capabilities. The potential **reduced liquidity in balancing capacity and SDAC markets** would have considerable negative welfare implications.

Proposal

Despite the theoretical benefits that co-optimisation can bring to the electricity system, its implementation seems to come with several drawbacks and shortcomings.

The risks and welfare reducing elements of co-optimisation have been neglected in the discussion so far. Therefore, we strongly advocate for a change of direction, reflecting the concerns of market participants.

The R&D on co-optimisation should deliver a detailed CBA, properly assessing the potential benefits under realistic market assumptions and highlighting the costs involved with the collateral impacts on balancing capacity and wholesale markets. Only if such a comprehensive R&D study should robustly confirm a positive result, a respective recommendation on implementation should be issued. Furthermore, **clear boundaries on the design choices available to R&D** should be made to preserve existing market structures.

In the meantime, Energy Traders Europe and Eurelectric call for an open and continued involvement of market participants in setting the scope and working assumptions of the upcoming R&D work. Regular interactions would then be needed to allow for a mutual understanding and for a rightful development of any such work.