

Berlin, 30 June 2025

**BDEW Bundesverband
der Energie- und
Wasserwirtschaft e.V.
(German Association of Energy and
Water Industries)
BDEW Representation at the EU**

Avenue de Cortenbergh 52
1000 Brussels
Belgium

www.bdew.de

Position Paper

Public Consultation of NEMOs and TSOs on the Co- optimisation R0

The German Association of Energy and Water Industries (BDEW), Berlin, represents over 1,900 companies. The range of members stretches from local and communal through regional and up to national and international businesses. It represents around 90 percent of the electricity production, over 60 percent of local and district heating supply, 90 percent of natural gas, over 90 percent of energy grid as well as 80 percent of drinking water extraction as well as around a third of wastewater disposal in Germany.

BDEW is registered in the German lobby register for the representation of interests vis-à-vis the German Bundestag and the Federal Government, as well as in the EU transparency register for the representation of interests vis-à-vis the EU institutions. When representing interests, it follows the recognised Code of Conduct pursuant to the first sentence of Section 5(3), of the German Lobby Register Act, the Code of Conduct attached to the Register of Interest Representatives (europa.eu) as well as the internal BDEW Compliance Guidelines to ensure its activities are professional and transparent at all times. National register entry: R000888. European register entry: 20457441380-38

Bidding products related questions

8. Section 3.1.2 of the report identifies several issues with “explicit bidding” and, on this background, clearly concludes in favour of “implicit bidding”. Do you have comments on these issues, the conclusion to further develop implicit bidding or on possible advantages of co-optimisation with explicit bidding compared to implicit bidding with a possibility of an explicit ‘premium’? For further detailed information, please refer to sections 2.2 - 2.4 of Appendix A: N-Side Report.

Feedback:

We fully agree that there are issues with explicit bidding (cmp. our previous consultation responses). However, we strongly disagree with the conclusion to prefer implicit bidding instead. Actually (cmp. position paper) our concerns towards combined bids are much stronger.

While explicit bidding poses challenges for market participants and the clearing algorithm, at least the bidding format and the corresponding market outcome are comprehensible.

9. With implicit bidding, opportunity costs of balancing capacity that occur in SDAC will be automatically taken into account in the optimisation and at least recovered by each market participant. However, there may be other costs related to offering balancing capacity that are not captured within the SDAC optimisation. Section 3.1.3 of the report suggests the possibility of a premium for balancing capacity to be able to cover such costs. Do you agree with the need to have a premium for balancing capacity? If no, please explain why you disagree.

Feedback:

We definitely agree with the need for a separate premium for each individual balancing capacity product.

Also dedicated bids for energy, aFRR-pos, aFRR-neg, mFRR-pos, mFRR-neg need to be possible, cmp. page 3 (“energy-only or balancing capacity-only”).

10. The R0 report mentions some specific costs that can be reflected by means of a premium. Which costs would you consider relevant to be reflected by such a premium?

Feedback:

Non-exhaustive list of relevant costs that should be reflected by such a premium.

- Opportunity cost of lost intraday flexibility (the "intraday value") when capacity is reserved for balancing instead of being available for intraday trading,
- Risk-related costs, such as penalties (e.g. non-delivery penalties), forecast uncertainty, and the cost of potential outages,
- Wear and tear due to volatile operating patterns or suboptimal operating points, especially relevant for thermal assets and batteries.

11. Do you have any additional suggestions for this premium (e.g. potential restrictions, maximum, etc.)?

Feedback:

No restrictions or cap should be applied to the premium, apart from the respective technical limits for energy and balancing capacity.

The premium should also be allowed to become negative, to facilitate all possible bidding considerations.

12. Section 3.2.2 of the report proposes both "linked bids" and "combined bids" to be used in a potential future co-optimised SDAC market. For more detailed information on linked and combined bids, please refer to sections 3.1 and 3.2 of Appendix A: N-Side Report. Do you see the need to enable both types of bids, combined and linked?

Feedback:

Linked bids are definitely required, there is no need for combined bids.

13. Do you agree with the proposals referred to in Question 12 and/or do you have further suggestions for the design of linked bids and combined bids, for example, what kind of linking should be possible or what kind of combined bids should be provided?

Feedback:

Intertemporal and specific inter-product (em, aFRRpos, aFRRneg, mFRRpos, mFRRneg) links are required. Parent-child and exclusive groups including bids for all MTUs and products.

Linked bids are definitely required. However, there is no need for combined bids.

For linked bids:

We also see a need to further refine linked bid functionalities. As with combined bids, the assumption of a strict 1:1 relationship between balancing and wholesale capacities is too limiting, particularly for storage. More advanced linking options would allow for accurate representation of portfolio-level interdependencies and asset-specific behaviours.

14. Are there special characteristics in your portfolio or your country that are not adequately addressed in the proposed bid structures? What are your suggestions for additional features that may be needed? You may also consult Appendix B of R0 report to review which already provided input might be particularly important for you.

Feedback:

We would like to emphasize that we disagree with and do not support an approach where asset- or country-specific characteristics are hardcoded into the bid structure. The product design should be uniform across all markets, ensuring a level playing field and simplicity in market clearing.

Storage assets in a portfolio present specific challenges that are not yet adequately addressed in the proposed bid structures—particularly with regard to the flexibility in linking energy and balancing capacities, and the need to model constraints such as state-of-charge and non-linear opportunity costs.

15. Specifically, to what extent do the proposed bid designs address portfolio bidding?

Feedback:

With combined bids for particular asset types, unit-based bidding is not explicitly required, but portfolio flexibility is reduced.

16. If you consider that portfolio bidding is not sufficiently supported, what kind of additions or improvements would you suggest?

Feedback:

Bids should be product-specific, not specific to certain asset types. Only this way it is up to the market participant to combine all of the assets in his portfolio to match the required products. This is particularly relevant for continuously optimizing the portfolio until delivery. With asset type specific bids, the possibility to reassign assets to deliver certain products is severely limited, obviously resulting in a loss of efficiency. For this reason, combined bids should be abandoned.

17. Specifically, if you operate storage facilities, do the proposed combined and/or linked bids cover your needs?

Feedback:

No.

18. In your opinion, what additional benefits could result from the ability to also include linking of combined bids? For additional information, please refer to section 6.3 of Appendix A: N-Side Report.

Feedback:

It is difficult to assess at this stage. The ability to link combined bids might offer some simplification or added flexibility in representing certain portfolio configurations, but we are currently not in a position to clearly evaluate the benefits

19. If you own or operate any of the following asset types, please identify which type of bid format (combined bid, linked bid, linking of combined bids, all of them) would address your technical and economic constraints in the best possible way and why: Biomass; Demand response; Solar; Battery storage; Pumped hydro; Thermal generators; Wind; Other (please specify). If none of the proposed bid formats are suitable for your asset types, please explain which needs are not properly addressed and why. Disclaimer: NEMOs and TSOs are aware that portfolio bidding is the current practice in

most European countries. This question could still help discover additional requirements.

Feedback:

To replicate all of the considerations involved in sequential bidding, a vast set of linking options is required - regardless of the asset type.

We do not support individual combined bids for each asset type.

20. What kind of challenges do you foresee for your own company related to the proposed new bid designs (linked and combined bids)?

Feedback:

The proposed bid designs 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.

Pricing related questions

21. The report (Chapter 3) considers non-convexities as a major challenge for co-optimisation, caused by the technical characteristics/constraints of production assets (primarily thermal generators and their startup costs, minimum generation levels, minimum up/down times and other modelling options). What other sources of non-convexities do you see that have not been considered (e.g. in hydro fleets)?

Feedback:

Even though it is stated that combined bids do not imply unit-based bidding, with more specific bid structures there is an obvious tendency towards unit-based bidding. This would restrict the efficiency gains that market participants can generate by portfolio bidding and self-dispatch up to delivery.

22. Do you have comments on the proposed pricing approach with a preference for a solution where Paradoxically Accepted Bids (No PAB) are removed from the solution? For more detailed information on the No PAB design, please refer to section 5.4.1 of Appendix A: N-Side Report.

Feedback:

We agree with the proposed removal of Paradoxically Accepted Bids. The "No PAB" design ensures clear and uniform pricing, which enhances market coherence, transparency, and trust. It aligns with existing SDAC practice and supports consistent price signals across markets.

23. What are your reflections on other alternative pricing options outlined in the report and its annexes?

Feedback:

The ambiguity that is introduced in price formation by jointly clearing energy and balancing capacity is even increased with more sophisticated pricing options.

24. What is your view on the substitutability rule for aFRR and mFRR, or do you have suggestions to modify or improve it? For more information on the substitutability rule, please also refer to section 6.1 of Appendix A: N-Side Report.

Feedback:

We consider the proposed substitutability rule between aFRR and mFRR acceptable. If a fraction of aFRR bids is transformed into mFRR because there is limited liquidity and the price is higher, the mFRR price should also be applied to mFRR-substitutable aFRR bids that are accepted as aFRR bids.

General questions

25. Are there any issues regarding bidding products, bid design and pricing that have not or not sufficiently been addressed in the report? If yes, please explain.

Feedback:

In co-optimization the allocation of CZC will be performed according to an integrated welfare calculation as part of the Euphemia target function. The market-based methodology is doing a similar calculation when determining the value of CZC. While the CZC available for balancing capacity in the market-based methodology is restricted to 10%, it is not limited for co-optimization. With the price-insensitive demand and generally steeper offer curves, it is possible that this will result in a preference for balancing capacity when allocating CZC. Such a potential bias needs to be evaluated and properly communicated, as a risk of increased SDAC spreads and reduced levels of price convergence are of high general interest to various stakeholders.

26. For potential providers of balancing capacity: what conditions must be satisfied for you in a co-optimised market to bid at least as much balancing capacity as today and potentially more? Please be as specific as possible.

Feedback:

Offering the same volume balancing capacity as currently is highly unlikely. In sequential bidding BSPs can re-optimize their bids after each auction outcome and offer all of the remaining capacity to subsequent balancing capacity and day-ahead markets. Not all combinations of balancing capacity and energy assignments are operationally feasible, particularly for operators of storage assets. However, BSPs still bear full responsibility for any balancing capacity assignment of the algorithm. To account for the uncertainty involved in receiving an arbitrary auction result for energy and balancing capacity, a more moderate bidding behaviour is necessary. This will result in a reduction of liquidity.

One approach to offer similar volumes of balancing capacity (neglecting re-optimization of aFRR/mFRR), would be to restrict the bid to balancing capacity only. This is obviously linked to an efficiency loss at the day-ahead stage, as energy bids will only be submitted intraday in case of no acceptance for balancing capacity

A key condition for storage assets is that they are properly reflected in the co-optimised market design. This includes:

- Accurate modelling of intertemporal constraints (e.g. state of charge, charging/discharging limits),
- Recognition of spread-based value rather than absolute price levels,
- Clear representation of opportunity costs across timeframes, including interactions with wholesale markets,

Practical and manageable bid formats that reflect these characteristics.

27. Please provide any other general comments to R0 report on Co-optimisation

Feedback:

Even though the report has provided initial ideas for a future market design, we remain sceptical as to whether the theoretical social welfare effects can be achieved in practice. Overall, the design appears to be too complex and its implementation involves too many risks for energy trading as a whole. The primary objective must remain that energy trading provides a comprehensible and trustworthy price signal for future investments in assets. It is not yet clear whether this will be the case under the proposed design. We also do not believe that these concerns can be completely dispelled in the coming years. The behavior of different market participants with their different preconditions and boundary conditions in the national markets cannot be predicted and therefore cannot be modeled.

The key question for us is whether all asset types can be mapped with sufficient accuracy and whether portfolio effects can be leveraged. In any case, the gap regarding the mapping of storage must therefore be closed. In principle, however, we still have a clear preference for portfolio bidding and decentralized dispatch in a future market design.

We therefore fully support the statement by NEMOs and TSOs: “NEMOs and TSOs remain highly sceptical on the technical and market function feasibility of cooptimisation - especially with regard to the appropriate consideration of multiple constraints on the side of balancing service providers in all kind of bidding regimes” (Executive Summary).

The impact of the modification of price formation on the energy system is not adequately considered. Without explicit bid prices for each product, market clearing and transparent price formation, as it is, will change and instead of providing straightforward price signals, SDAC and balancing capacity results may be more complex to anticipate and understand. This affects both long-term investments into flexible assets and forward markets settling on the SDAC price.

When assessing the benefits of different co-optimization implementation variants, changes in bidding behaviour need to be considered. Simulations with historical or synthetical data can provide insights into computational aspects of the algorithm but will not provide a valid quantitative assessment of the potential benefits. Shortcomings of studies like the one conducted on behalf of ACER have been highlighted in previous consultation responses. In the evaluation report (https://www.acer.europa.eu/sites/default/files/2024-09/ACER_Dcision_11-2024_Annex_V.pdf, Nr. 12) ACER even acknowledged the increased complexity in bids due to

intertemporal dependencies for storage units, that, however, were not considered in the study at all (the reasoning that no public data would be available on hydro assets is not clear

In the initial statement on page 1 it is emphasized that other markets where co-optimisation is applied are fundamentally different. Central dispatch and unit-based bidding is applied and all subsequent timeframes are included. Energy trading and dispatch optimization in EU energy markets is not a one-shot exercise formulated into a day-ahead bid but is continuously performed up to delivery. An accepted balancing capacity bid is an obligation that cannot be reversed like an accepted energy bid that just forms a trade position. Unlike in a central dispatch setting, market participants are bearing full responsibility for delivering the assigned balancing capacity and therefore need to have control over the offered and accepted capacity.

to us). Feedback of market participants must be adequately taken into account for a proper qualitative assessment of the potential benefits and downsides of co-optimization.

It is not clear which SPBC is envisaged in the study. Although balancing markets will transition to 15-minute granularity, the 4h block for balancing capacity should be additionally maintained.

Contact

Krassimir Stantchev

Unit Manager Electricity Trading

+49 30 300 199-1561

krassimir.stantchev@bdew.de