Public consultation on amending the electricity price coupling algorithm methodology

> Fields marked with * are mandatory.

Introduction

On 24 November 2023, ACER received a proposal ('the Proposal') from all Nominated Electricity Market Operators (NEMOs) for amending the methodology for the price coupling algorithm and the continuous trading matching algorithm.

The methodology sets the regulatory framework for the algorithms used for matching orders and allocating cross-zonal capacities in the European day-ahead and intraday electricity markets. The European day-ahead electricity market is based on an implicit auction, whereas the intraday market currently relies only on continuous trading. However, intraday auctions are expected to be introduced in 2024.

Thanks to a coordinated calculation of prices and cross-zonal exchanges, which is referred to as market coupling, available cross-zonal capacity is used more efficiently and price differences are reduced.

The current methodology was approved by ACER in July 2018 and amended in January 2020.

This public consultation aims to gather stakeholders' feedback on the proposed amendments to the methodology for the price coupling algorithm and the continuous trading matching algorithm.

Amending the methodology, in particular the day-ahead coupling algorithm, is needed to enable so-called 'co-optimisation'. By allocating cross-zonal capacity where its market value is the highest (either to the day-ahead market or to the balancing capacity markets), co-optimisation facilitates the integration of the balancing capacity markets and allows for a more efficient use of cross-zonal capacity.

On 1 February 2024, ACER is organising a workshop to present the public consultation and answer any clarification questions from stakeholders on the content of the consultation.

ACER expects to decide on the amended methodology by 24 May 2024.

To inform its decision-making process, ACER is collecting inputs from stakeholders. This consultation is addressed to all interested stakeholders, including market participants, NEMOs, transmission system operators (TSOs), regulatory authorities and academics.

Stakeholders are invited to respond to this survey by **15 February 2024**, 23:59 hrs (CET).

Data protection

ACER will process personal data of the respondents in accordance with [Regulation (EU) 2018/1725](#), taking into account that this processing is necessary for performing ACER's consultation tasks.

More information on data protection is available in ACER's [data protection notice](#) and on [ACER's website](#).

ACER will not publish personal data.

Confidentiality

Following this consultation, ACER will make public:

- the number of responses received;
- company names, unless they should be considered as confidential;
- all non-confidential responses; and
- ACER's evaluation of responses. In the evaluation, ACER may link responses to specific respondents or groups of respondents.

You may request that the name of your company or any information provided in your response is treated as confidential. To this aim, you need to explicitly indicate whether your response contains confidential information.

You will be asked this question at the end of the survey.

☐ I have read the information provided in this section.

Respondent's data

* Country
- ○ Austria
- ○ Belgium
- ○ Bulgaria
- ○ Croatia
- ○ Cyprus
- ○ Czechia
- ○ Denmark
- ○ Estonia
- ○ Finland
- ○ France
- ○ Germany

○ Greece

○ Hungary

○ Ireland

○ Italy

○ Latvia

○ Lithuania

○ Luxembourg

○ Malta

○ Netherlands

○ Poland

○ Portugal

○ Romania

○ Slovakia

○ Slovenia

○ Spain

○ Sweden

○ Switzerland

○ Norway

○ United Kingdom

○ **Other**

* Name and surname

50 character(s) maximum

This information will not be published.

* Company

50 character(s) maximum

* Email

This information will not be published.

Related documents

NEMOs' proposal:

Explanatory note

Algorithm methodology (clean) (tracked changes)

Annex 1 - Common set of requirements for day-ahead (clean)

Annex 2 - Common set of requirements for intraday (clean) (tracked changes)

Annex 3 - Algorithm monitoring methodology for day-ahead (clean) (tracked changes)

Appendix 1 - List of NEMOs and TSOs

Related ACER decisions:

Decision No 08/2018 on the NEMOs' proposal for the price coupling algorithm and for the continuous trading matching algorithm, also incorporating TSOs' and NEMOs' proposal for a common set of requirements
Decision No 04/2020 on the NEMOs' proposal for the price coupling algorithm and for the continuous trading matching algorithm, also incorporating TSOs' and NEMOs' proposal for a common set of requirements and its Annex I (currently approved 'algorithm methodology')
Decision No 12/2020 on the methodology for a co-optimised allocation process of cross-zonal capacity and its Annex I ('co-optimisation methodology')
Decision No 37/2020 on the products that can be taken into account in the single day-ahead coupling and its Annex I ('SDAC product methodology')
Decision No 11/2023 on the TSOs' proposal for the harmonised cross-zonal capacity allocation methodology and its Annex I ('HCZCA methodology')

Related legal acts:

CACM Regulation - Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management
EB Regulation - Regulation (EU) 2017/2195 establishing a guideline on electricity balancing
Electricity Regulation - Regulation (EU) 2019/943 on the internal market for electricity
ACER Regulation - Regulation (EU) 2019/942 establishing a European Union Agency for the Cooperation of Energy Regulators

Other relevant documents:

TSOs' implementation impact assessment
Feasibility study
ACER's request for amendment 2022
Updated set of SDAC algorithm requirements 2022
Updated set of SDAC algorithm requirements 2023

Background

On 24 November 2023, all NEMOs submitted to ACER their proposal for the amendment of the methodology for the price coupling algorithm and for the continuous trading matching algorithm ('algorithm methodology'), also incorporating TSOs' and NEMOs' proposals for a common set of requirements, in accordance with Article 37 of the CACM Regulation. The intention of this amendment is to consider the co-optimised allocation process, laid down under Article 40 of the EB Regulation, in the Single Day-Ahead Coupling (SDAC) algorithm.

The existing algorithm methodology was developed by all NEMOs under Article 37(5) of the CACM Regulation, and was approved by ACER with Decision No 08/2018 of 26 July 2018 and Decision No 04 /2020 of 30 January 2020. The methodology includes the TSOs' and NEMOs' sets of requirements for algorithm development in accordance with Article 37(1) of the CACM Regulation.

What is co-optimisation?

The EB Regulation establishes an EU-wide set of technical, operational and market rules to govern the functioning and integration of the national electricity balancing markets. One of its cornerstones is the application of cross-zonal capacity allocation for the balancing timeframe, which improves competition and increases welfare by means of cross-zonal balancing capacity exchanges.

Cross-zonal capacity between bidding zones is limited. To allocate it in an economically efficient way, the EB Regulation defines the following cross-zonal capacity allocation processes:

- Co-optimisation (Article 40)
- Market-based allocation and inverted market-based allocation (Article 41)
- Allocation based on an economic efficiency analysis (Article 42)

The scope of this public consultation is limited to co-optimisation. In the co-optimised allocation process, the allocation of cross-zonal capacity for the day-ahead and the balancing capacity markets is performed in the SDAC algorithm with actual energy supply and demand bids, together with actual balancing capacity bids, which compete for the available cross-zonal capacity for each market time unit of the following day. The objective of the co-optimisation function is to maximise the sum of the welfare gains of the day-ahead energy market and the balancing capacity markets. As a result, one unit of cross-zonal capacity is allocated to either market, depending on where its market value is the highest.

All TSOs' submission of algorithm requirements for the co-optimised allocation process

According to Article 13 of the methodology for a co-optimised allocation process of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves ('co-optimisation methodology'), developed under Article 40 of the EB Regulation and approved by ACER with Decision No 12/2020 of 17 June 2020, all TSOs had to carry out an implementation impact assessment (IIA) and propose an updated set of requirements for the SDAC algorithm to all NEMOs.

On 17 December 2021, the TSOs issued an IIA Report, in which they recommended to complement the IIA with a technical feasibility study based on an algorithm prototype in order to support their work on the updated set of SDAC algorithm requirements. The feasibility study, performed by the day-ahead algorithm service provider with the input from the TSOs and NEMOs, was completed in May 2022 and shared with ACER and the national regulatory authorities (NRAs) in October 2022. On 16 June 2022, all TSOs published and submitted to all NEMOs a proposal for updating the common set of requirements for the price coupling algorithm to include the TSOs' requirements ('updated set of SDAC algorithm requirements 2022').

The methodology for harmonising processes for the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with Article 38(3) of the EB Regulation ('HCZ CA methodology'), as approved with ACER Decision No 11/2023 of 19 July 2023, includes the co-optimised allocation process and therefore replaced the initial co-optimisation methodology. Article 27 (7) of the HCZCA methodology requires all TSOs to review and re-submit, if necessary, a new set of requirements for the price coupling algorithm to the NEMOs by two months after ACER's Decision.

Accordingly, on 15 September 2023, the TSOs submitted an [updated set of SDAC algorithm requirements 2023](#) to the NEMOs. Since the co-optimised allocation process in the HCZCA methodology remains broadly similar to the previous co-optimisation methodology, the amendments in the updated set of SDAC algorithm requirements 2023 compared to the previous version are only limited to the deletion of provisions for the linking of bids between balancing capacity and day-ahead energy bids.

ACER's request for amendment

In the TSOs' submission of the updated set of SDAC algorithm requirements 2022 and the all NEMOs letter responding to the TSOs' submission, the TSOs and NEMOs mentioned their intention not to amend the algorithm methodology, but to start considering further research and development (R&D) for co-optimisation after ACER's Decision on the HCZCA methodology.

The approach of all TSOs and NEMOs did not respect the intention of the CACM Regulation to consider the submitted set of requirements in the algorithm methodology and implied a halt of R&D for co-optimisation for at least 1.5 years. Therefore, in a letter dated 25 November 2022, ACER requested the NEMOs to develop a proposal for amendment of the algorithm methodology in accordance with the TSOs' updated set of SDAC algorithm requirements 2022 by 25 November 2023 ([ACER's request for amendment 2022](#)). In this letter, ACER highlighted the findings of the feasibility study regarding the remaining need for R&D including the time required for such R&D as described in the feasibility study. ACER urged the NEMOs to resume R&D as soon as possible, providing them with sufficient time to perform R&D, and requested them to consider the relevant findings in their Proposal.

Consultation questions

Please note that none of the questions is mandatory.

Topic 1: R&D activities

1. Do you consider that the Proposal should take into account the steps listed under chapter 9 of the [feasibility study](#) when defining the R&D activities necessary to enable the implementation of co-optimisation?

- ○ Yes
- ○ Partially
- ○ No

Please explain your answer.

4000 character(s) maximum

2. Paragraph 4.3.2 of the [explanatory note](#) lists a set of design elements which, according to the NEMOs, would need to be further investigated before implementing co-optimisation. However, Article 4 (16)(c) of the algorithm methodology includes other elements that are not mentioned in the explanatory note.

Do you consider that the Proposal includes all the necessary design elements requiring further R&D?

- ⊙ Yes
- ⊙ No

In your view, what other elements should the Proposal consider?

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Topic 2: Bid design and products

3. When a market participant intends to bid in both day-ahead and balancing capacity markets, which bid design would you consider more appropriate?

- ⊙ Separate bids for day-ahead and balancing capacity market(s)
- ⊙ A single bid covering both day-ahead and balancing capacity market(s)

Please justify your answer and, in case of a single bid, please explain how the bid would allow to capture the interactions between the two markets.

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4. In your view, what information would the NEMOs and the TSOs still need from market participants to define the bid design?

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5. What is the most suitable process for market participants to provide such information?

- ⊙ Public consultation

○ Public workshop

○ Other

Please elaborate your answer.

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6. Under Article 4(16) of the algorithm methodology, a 1-year timeline is foreseen for the collection of inputs from market participants on the bid design. How do you consider this 1-year timeline?

○ Too short

○ Adequate

○ Too long

Please explain your answer.

4000 character(s) maximum

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7. With the introduction of co-optimisation, the list of products which can be taken into account in SDAC will need to be amended to include products related to balancing capacity and, potentially, products linking day-ahead and balancing capacity bids.

Which additional products would you consider necessary to be added to the list of SDAC products?

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Topic 3: Benefits of co-optimisation

8. By allocating cross-zonal capacity where its market value is the highest, i.e. either to the day-ahead market or to the balancing capacity markets, co-optimisation aims to facilitate the integration of balancing capacity markets and to allow for a more optimal use of cross-zonal capacity between these two markets. Thanks to the co-optimisation process, the cost for the procurement of balancing capacity is expected to decrease by making use of cheaper bids from other areas and/or by reducing the

individual TSO's demand for balancing capacity through sharing of reserves.

What do you consider to be the most significant benefits of co-optimisation?

4000 character(s) maximum

Topic 4: Other remarks

9. Please provide any other remarks on the Proposal.

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Confidentiality question

* Does your response contain confidential information?

◎ Yes

◎ No

If your response contains confidential information, you have to claim confidentiality according to Article 9 of ACER's Rules of Procedure.

How to do it:

1. download a PDF version of your response (see upper right corner of the page);
2. redact confidential information and provide descriptions* of the deleted information (e.g. use a PDF editor or print out your response and manually replace confidential information with descriptions);
3. upload the redacted (i.e. non-confidential) version of your response;
4. upload a separate document where you:
    * clearly identify which persons/undertakings should not have access to the deleted information;
    * provide reasons why the persons/undertakings should not have access to the information;

* Your descriptions of the deleted information must enable any party concerned with access to the file to determine whether:

- the information deleted is likely to be relevant to their defence; and
- there are sufficient grounds to request ACER to grand access to the information claimed to be confidential.

Please upload a redacted (i.e. non-confidential) version of your response:
The maximum file size is 1 MB. If your file is bigger, please send it to ACER-ELE-2023-014@acer.europa.eu

Please upload a separate document with the information listed in point 4 above:
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- assume that your answers do not contain confidential information and that you have no objections to the disclosure of your response in its entirety; or
- disregard your entire response because of non-compliance with the procedural requirements for confidentiality claims.

☐ I have read the information provided in this section and Article 9 of ACER's Rules of Procedure.