

ACER Decision on Algorithm methodology: Annex IV

Evaluation of responses to the public consultation on the proposal for the price coupling algorithm and for the continuous trading matching algorithm

1 Introduction

Pursuant to Article 9(6)(g) and 37(5) of the CACM Regulation, all NEMOs submitted the amended proposal regarding the price coupling and continuous trading matching algorithm ('the Amended Proposal') to their respective regulatory authorities for approval. The date on which the last NRA received the Amended Proposal was 1 December 2017.

The regulatory authorities agreed to request the Agency to adopt a decision on the Amended Proposal, because they were not able to agree on all provisions of the Amended Proposal as described in the body of this decision. Therefore, in accordance with Article 9(12) of the CACM Regulation and Article 8(1) of Regulation (EC) No 713/2009¹, the Agency became responsible for adopting a decision concerning the Amended Proposal as of 30 January 2018. In order to take an informed decision on the Amended Proposal, the Agency launched a public consultation on 26 April 2018 inviting all interested parties to express their views on potential amendments of the Amended Proposal. The closing date for comments was 18 May 2018.

More specifically, those potential amendments covered the following three topics:

Topic I: Application of corrective measures to maintain the algorithm performance:

- (i) What is your opinion on the approach proposed by NEMOs to achieve and maintain the algorithm performance during and after the prototyping phase?
- (ii) Which amendments would be needed to the Amended Proposal to make the application of corrective measures compliant with the CACM Regulation?

Topic II: Metrics and thresholds to assess and monitor the algorithm performance with regard to its optimality, repeatability and scalability:

- (iii) Do you agree that NEMOs, in coordination with TSOs, are best placed for establishing the set of metrics and indicators to monitor the performance of the algorithm? How to insure the independence of the monitoring process?

¹ OJ L 211, 14.8.2009, p. 1.

- (iv) Should the Amended Proposal include a minimum set of metrics and thresholds, which can be complemented over time to support further improvement in the performance of the algorithm?

Topic III: Approach towards the enduring algorithm solution:

- (v) Do you consider the minimum requirements for the enduring algorithm solution as sufficient and compliant with the CACM Regulation?
- (vi) Do you think that NEMOs are best placed and/or able to strike a balance between meeting the market participants' needs in terms of flexibility of the products and ensuring that the algorithm is robust and compliant with CACM Regulation?

2 Responses

By the end of the consultation period, the Agency received responses from 10 respondents.

This evaluation paper summarises all received comments and responses to them. The table below is organised according to the consultation questions and provides the respective views from the respondents as well as the response from the Agency how their comments were taken into account.

Respondents' views	ACER views
Question 1: What is your opinion on the approach proposed by NEMOs to achieve and maintain the algorithm performance during and after the prototyping phase? 8 respondents provided an answer to this question. Most of them were concerned about the lack of detail and transparency. The following specific comments were raised: a) BNetzA is of the opinion that the methodology should include obligations with respect to the performance of the algorithms in order to ensure transparency. b) EAI is not satisfied with the current performance concerning the ability to accommodate all order types without restriction of any market needs. For them, rules and transparency on actions regarding performance monitoring and consequent actions are missing. c) EDF: Indicators with minimum requirements and targets for the performance should be established by NEMOs. The parameters should be subject to regulatory scrutiny, and be discussed with stakeholders. All kind of changes should be published. They ask for more detailed definition of the types of changes falling within the identified categories. The request for change process has to be transparent and should include a stakeholders consultation process. ACER and NRAs should act as arbitral body during this consultation process in case of no possible compromise. d) Enel is missing sufficient details and examples. e) Eni is missing a non-discriminatory equal access to all product types in different bidding zones.	The Agency agrees with the concerns raised regarding the insufficient transparency and the lack of sufficiently detailed timelines. Therefore, the Agency introduced in coordination with NRAs and NEMOs a clear timeline for the algorithm development in the amended Algorithm methodology. Concerning the corrective measures and change requests, more stringent rules were added to ensure a non-discriminatory and more transparent use of corrective measures and change requests. TSOs participation in these processes was upgraded and their participation in the reporting of the algorithm performance was added in order to provide some neutrality in managing the algorithms. As mentioned in the methodology, the algorithm shall support all products covered in the product proposal developed in accordance with Articles 40(1) and 53(1) of the CACM Regulation as well as their reasonable usage based on anticipated and effective usage. Some of the indicators for monitoring the algorithm performance are described in more detail. More specific descriptions of various types of indicators will be added in

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f) ENTSO-E is in favour of simplifying the number and the kind of products to support performance and ensure safe grid operations. g) FSE cannot accept the approach of NEMOs as it is not compliant with ISO standards (best international practice). The development and maintenance of the algorithms must be supervised by independent bodies and ideally, should not be done by the NEMOs but by an organization appointed by ACER. h) Ørsted is missing clear implementation timelines and transparency regarding the implementation of the interim and enduring solutions and the use of corrective measures. A simulation tool for market participants and other stakeholders in case of major changes to the existing solution would be appreciated.	the algorithm monitoring methodology through an amendment of the Algorithm methodology.
2 respondents provided no comments concerning this question.	
Question 2: Which amendments would be needed to the Amended Proposal to make the application of corrective measures compliant with the CACM Regulation?	
8 respondents provided an answer to this question. The following specific comments were raised: a) BDEW: Any measure should keep in mind to promote liquid markets and to provide stable and robust market mechanisms to enforce trust with market participants. b) EAI is missing a description on how NEMOs will ensure the application of corrective measures in a non-discriminatory way. c) EDF: Corrective measures should be of temporary nature and should not prevent NEMOs from achieving their performance targets. The enduring	The Agency agrees with the concerns referring to the missing transparency and details on the described process of applying corrective measures. Therefore, the Agency redrafted the article covering corrective measures to provide a clearer description of corrective measures as a form of change request with the aim to manage the performance of the algorithm in case of unanticipated degradation. The Agency also provided a clear and exhaustive list of corrective measures as well as the rules

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solution of the algorithms should guarantee the functionalities and the performance proposed by NEMOs and approved by regulatory authorities, taking into account the needs of market participants and the objectives of the CACM Regulation. The maximum period in which corrective measures can be applied should be clearly described as the period in which NEMOs shall define, test and deliver the enduring solutions to solve the unanticipated impacts of certain functionalities on the algorithm performance targets. d) Enel: More details on the corrective measures and the way they will be used are necessary. Applying corrective measures up to 6 months in the industrialisation phase to solve unanticipated impacts on Algorithm Performance seems too long. The apparently unlimited possibility of corrective measures usage in the prototyping phase should be explained and somehow controlled, taking into account that this initial phase could last long time. e) Eni: For the avoidance of decoupling, corrective measures could be introduced to ensure the correct functioning and performance of the algorithm as well as the repeatability and scalability requirements. The operating methods for using the algorithm must be transparent and reliable. f) ENTSO-E: As corrective measures will have an impact on the TSOs operation of the grid, TSOs should be involved in the corrective measures related to these activities. CACM foresees that TSOs and NEMOs should jointly organise the day-to-day management of the SDAC	for communication to the public and subsequent reporting. After the full implementation of the algorithms, these corrective measures aiming to maintain adequate performance of the algorithms should be limited to 6 months and should not be extended. The Agency decided not to impose further restrictions on these limits, but rather clarify the governance and decision making on these corrective measures (by including also TSOs), which should ensure that the interest of market participants are taken into account.

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and SIDC. The involvement of TSOs in corrective measures falls under the scope of such day-to-day management. g) FSE: Independent supervising bodies are required; ISO standards must be followed. h) Ørsted proposes a full and better-described list of corrective measures. How these corrective measures will effectively be used should be mentioned and the full effect of these measures should be transparent. The Amended Proposal states that the use of corrective measures depends on the algorithm performance deteriorating below a certain critical threshold, but these thresholds are not clear and defined. 2 respondents provided no response to this question.	
Question 3: Do you agree that NEMOs, in coordination with TSOs, are best placed for establishing the set of metrics and indicators to monitor the performance of the algorithm? How to insure the independence of the monitoring process? 4 respondents answered YES to this question and provided the following additional comments: a) BDEW: A close monitoring of the performance by the NEMOs is essential for NEMOs to be able to take actions in the eventuality that the level of performance degrades. A re-opening of the debate on NEMO tasks is not necessary and might cause unnecessary costs and time losses. b) BNetzA: More concrete definitions of related performance indicators and space for future amendments are required. c) EDF: Stakeholders should be systematically informed and should be consulted for the selection of metrics and indicators. ACER and NRAs should act as arbitral body during this consultation process in case of	The Agency provided more clarity in the Algorithm methodology concerning the metrics and the method for monitoring the algorithm performance. These indicators will indeed have to be consulted and approved by regulatory authorities. To improve the neutrality of the reporting of performance monitoring the involvement of TSOs in the reporting was introduced. The outcome of these reports should be discussed in stakeholder fora held in accordance with Article 11 of the CACM Regulation. As TSOs' and NEMOs' interests are not aligned, the Agency expects that this should provide some

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dispute between NEMOs and stakeholders. Metrics and indicators should be submitted to regulatory authorities for approval. d) ENTSE-E: External audit of the monitoring process and of the performance of the algorithm itself should be ensured. The entity in question should be independent from any TSOs' or NEMOs' activities.	basic level of neutrality in this process. However, at this stage, the Agency does not yet see the need to involve a third party on a regular basis. Instead a third party could be hired on an ad-hoc basis at the request of regulatory authorities in case of doubts. For this purpose, the Agency added the obligation to provide the relevant data to the regulatory authorities or to the Agency.
1 respondent answered NO to this question and provided the following additional comments: a) FSE: The NEMOs originally opposed the welfare criterion and introduced redundant requirements in the price coupling algorithm, which pushed the solution away from the Pareto optimum. The development and maintenance should be supervised by independent bodies (ACER and/or a board with representatives from the EU Member States) and ideally should be operated by an entity appointed by ACER (i.e. not operated by the NEMOs).	
2 respondents provided a different answer: a) EAI: NEMOs must provide stakeholders with more insight into the breadth, regularity or results of performance reviews as well as planned actions arising on foot of them. b) Enel: A consultation with market participants and an approval by regulators have to be included in the process. Monitoring activities should be performed or certified by a third party or at least supervised by regulatory authorities and effective transparency towards market participants is required.	
3 respondents provided no response to this question.	

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Question 4: Should the Amended Proposal include a minimum set of metrics and thresholds, which can be complemented over time to support further improvement in the performance of the algorithm?	
2 respondents answer with YES to this question and raised the following comments: a) ENTSO-E states that these should be jointly defined by NEMOs and TSOs in the operational procedures. Failure to meet metrics indicates lacking performance. Metrics need to be defined, but should not be absolute. If the metrics are not met, the market coupling results should not be invalidated but rather the necessary actions from the NEMOs and/or from the TSOs should be taken. b) FSE states that this should be supervised by independent bodies.	Where possible, the Agency increased the level of details of some indicators for monitoring the algorithm performance. As there was not sufficient time to include a more detailed list and descriptions of the various indicators, an algorithm monitoring methodology should be developed through an amendment of Algorithm methodology. This algorithm monitoring methodology shall be developed by all NEMOs in coordination with all TSOs by August 2019. The annex should contain a more detailed description of the processes, indicators and thresholds, while providing technical flexibility for the further development of the algorithm and its monitoring. See also Agency's response to the previous question.
5 respondents provided a different answer raising the following comments: a) EAI, EDF, Enel and Ørsted demand more transparency on metrics, indicators, thresholds and timelines. EDF would additionally like to have possibilities for stakeholders to propose additional indicators and would like to see some specific thresholds already where these are already possible. b) Enel mentions that consultation with market participants and an approval by regulators have to be included in the process. c) BNetzA mentions that the methodology in general should aim at providing an incentive for NEMOs to improve the algorithm and its performance continuously.	
3 respondents provided no response to this question.	

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Question 5: Do you consider the minimum requirements for the enduring algorithm solution as sufficient and compliant with CACM Regulation? 3 respondents favoured the answer NO and raised the following comments: a) FSE reasons that the requirements must state that the price coupling algorithm gets as closed to the Pareto optimum as possible. b) NGIC: The scheduled flow calculation may not be sufficient for the case where a border comprises DC I/Cs, and particularly if there is more than one. NGIC would therefore strongly recommend to include the original DC requirement, perhaps with the inclusion of the phrase “where applicable” to reflect the differing approaches in the different Bidding Zones. c) ENTSO-E states that the minimum requirement together with the proposal is not fully CACM compliant as scheduled flows should be calculated between bidding zones, scheduling areas, NEMO trading hubs and where applicable, into and out of individual relevant DC network elements. All TSOs need to highlight that if implementation of certain functionalities in the Algorithm are delivered too late, this may delay the implementation of certain TSO methodologies. 3 respondents provided a different answer raising the following comments: a) EAI mentions that the current solution is not meeting the market participants' needs concerning the ability to accommodate all order types without restrictions to the market (scalability).	The Agency considers that a balance is needed between an algorithm accommodating all complex products and an algorithm achieving full optimality and adequate performance. The Agency believes that this balance needs to be defined by all NEMOs within the legally binding constraints on the algorithm performance, optimality, products and requirements. Hence, the Agency clarified these constraints with the Algorithm methodology and all NEMOs are responsible to find the right balance within these constraints. For example, in case of problems with performance, optimality or scalability, all NEMOs have to simplify the products or requirements to the extent possible and needed. As the provision of scheduled exchanges of DC elements (including losses) is covered in the annexed DA requirements, the Agency does not deem it necessary to mention explicitly these in different parts of the main document. Further descriptions of scheduled exchanges will be covered in the scheduled exchange methodology according to Article 43 and 56 of the CACM Regulation and is therefore not covered in this methodology. The order types accommodated by the algorithm are covered in the DA and ID products defined in accordance

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b) EDF: The minimum requirements for the enduring algorithm solution should also include the ability to support "user defined" block products covering multiple market time units (MTUs) and support cross-border implicit capacity allocation with a granularity corresponding to the longest market time unit in force in adjacent bidding zones. c) Enel believes that the enduring solution should strive for the elimination of complex products and allow simple products together with portfolio bids in both DA and ID markets. Portfolio bidding should be guaranteed in all Member States by proper methodologies and rules.	with Articles 40(1) and 53(1) of the CACM Regulation and are therefore out of scope of the Algorithm methodology. Portfolio or unit based bidding is also outside of the legal mandate of this methodology. As the immediate full provision of all requirements and all products covered in the DA and ID product proposals is technically not feasible yet, a reasonable balance between supported products and requirements and a sufficient performance of the algorithm to provide a solution in time needs to be established in the meantime.
4 respondents provided no response to this question.	Question 6: Do you think that NEMOs are best placed and/or able to strike a balance between meeting the market participants' needs in terms of flexibility of the products and ensuring that the algorithm is robust and compliant with the CACM Regulation?
2 respondents answered YES and raised the following comments: a) BDEW states that NEMOs have the competences, abilities and experience to do so. A re-opening of the debate on NEMO tasks is not necessary and might cause unnecessary costs and time losses. b) EDF: Other entities could also propose improvements if the algorithms are open source. A consultation process with market participants is necessary for both the implementation phase and the request for change process in order to ensure that the solutions proposed are in line with market participants' needs and do not unduly hamper their activities. Regulatory scrutiny is also necessary to ensure the independence of the assessment of NEMO's proposals.	The Agency considers the NEMOs should be capable of striking a balance between meeting the market participants' needs in terms of flexibility of the products and ensuring that the algorithm is robust and compliant with the CACM Regulation. However, the Agency considers that a proper legal framework is needed to provide the right incentives and constraints for NEMOs. For this reason, the Agency clarified and strengthened the obligations regarding the implementation of the algorithms with regard to the requirements, products, scalability repeatability and performance. All the issues not legally

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1 respondents answered NO and raised the following comment: a) FSE states NEMOs are not the ones to decide how to strike the balance between having a sufficient amount of block products for the hedging needs of market participants and a limited share of orders as block bids to ensure a reliable spot price calculation. The parties, which have their money at stake, must decide how to strike the balance.	defined should therefore be considered as possible degrees of freedom for NEMOs to find the correct balance. Among them, the simplification of products or requirements are the most obvious ones. The Agency also agrees on the need of TSOs' involvement in the change request process and therefore its general governance was improved, stakeholders' involvement was added and more possibilities for regulatory scrutiny were put in place.
2 respondents provided a different answer raising the following comments: a) EAI is concerned with the conflict of interest between various NEMOs arising from the common MCO governance while being in competition with each other. This may raise barriers to entry (for market participants but also for further NEMOs), discrimination between different markets and potentially collusive behaviour among NEMOs. b) ENTSO-E: Future market evolution requires a stouter reflection of power system constraints in capacity allocation, which would increase the complexity of the IT solutions and tighten the link between TSOs and the MCO function. The current legal framework does not ensure sufficient TSOs' control over this vital function. TSOs call for a stronger role in the process for running the MCO function affecting their core business designation of the MCO coordinator, the possibility for TSOs to approve the DA and ID algorithm amendments and the possibility for TSOs to have a role in the decision-making process on necessary measures when a new bidding zone (BZ) border joins. All TSOs contend that the	The general discussion on MCO governance is, however, out of scope and legal mandate of the Algorithm methodology.

Respondents' views	ACER views
MCO Function should be properly regulated and separated from the competitive activities of NEMOs.	
5 respondents provided no response to this question.	

3 List of respondents

Organisation	Type
BDEW	Association
BNetzA	NRA
Danish Federation of Industrial Energy Consumers (FSE)	Association
EDF	Energy company
Electricity Association of Ireland (EAI)	Association
Enel	Energy company
Eni	Energy company
ENTSO-E	European Network of Transmission System Operators
National Grid Interconnectors Ltd (NGIC)	TSO
Ørsted	Energy company