Response to ENTSO-E public consultation on cross-border participation in capacity mechanisms

13 March 2020

Response to questions

8. Would you have any comments related to the part specifying the General provisions?

Below we comment on Articles 1-3 covered by the General Provisions part of the methodology.

- Article 1, paragraph h: The scope of this provision is unclear and appears to be prospective. If the latter is not the case, it would be useful for ENTSO-E to expand on it. If distribution system operators (DSOs) are also involved in the implementation of capacity mechanisms, the present methodology should also be clear about their involvement.
- Article 1, paragraph i: The current provision is incomplete and, in particular, it is unclear why the payback obligation cannot apply to foreign capacity. ENTSO-E makes the assertion that a "Reliability Option type of capacity mechanism may result in a cost gap between foreign and domestic capacity contracts to cover part of payback obligations not covered by foreign contracted capacity." The provision doesn't, however, provide evidence to substantiate this. A capacity mechanism contract is a contract between the capacity market (CM) operator and a resource provider, whether the latter is located in the same Member State or not. Presumably, the payback obligation can be applied in the case of foreign capacity too, with the only exception being that the reference price be defined as the equivalent market price in the bidding zone where the foreign capacity is located. For example, if the reference price is determined by the day-ahead price in the country where the CM is established, following the same logic, the reference price for the resource that is located in another bidding zone should also be defined by the day-ahead price of that

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bidding zone. The objective of the payback obligation is to ensure that resources are not making windfall profits and consumers are not unnecessarily burdened with excessive costs. In return, resources with a reliability option contract receive the certainty and stability provided by the reliability option payment.

- Article 1, paragraph j: The statement by ENTSO-E that "a transition period is needed to implement this proposal in a timely manner after it is approved" is unnecessarily vague and inconsistent with the recently agreed Clean Energy for All Europeans package. This provision leaves the door open for ENTSO-E to delay implementation of the proposal, potentially without consideration of the benefits that a harmonised methodology will bring to the European market. Recognising that there might be elements in the proposal that require more time to implement than others, it would be important to establish a more definitive timeline. For example, the methodology for calculating the maximum entry capacity for cross-border participation could be applied already in 2020 following the approval or amendment process by the Agency for the Cooperation of Energy Regulators (ACER). The European Resource Adequacy Assessment (ERAA) modelling is already available. (We note that this requires significant refinement and improvement though, as per our response on the related consultation. See RAP. (2020). *ENTSO-E public consultation on ERAA: Response to questions*. Retrieved from https://www.raponline.org/knowledge-center/entso-e-public-consultation-eraa-response-questions/). On the other hand, creating the Registry in accordance with Article 26.11(e) of the Regulation (methodology 5 of this proposal), would require more time. This is already reflected in the Regulation itself, whereby "by 5 July 2021 the ENTSO for Electricity shall set up and operate the registry referred to in point (a) of paragraph 10" (Article 26, paragraph 15 of the Regulation). The implementation of the present proposal should abide by any relevant provisions in the Regulation. In its current form, and without any justification, this provision is inappropriate.

- Article 2: Some definitions are unclear (e.g., definition a.b. does not explain what capacities this could refer to or in what situations a capacity contracted in a capacity remuneration mechanism may not participate in the market? Does this refer to strategic reserves for example?), a significant number of terms used in the document that are not defined, and others would benefit from a more complete description (e.g., curtailment sharing rules within the market coupling algorithm).

- Article 3: The proposal suggests that, within its context, "costs incurred related to tasks listed in Article 26.10 of Regulation (EU) 2019/943 should not be borne by the TSO where the Capacity Market Unit is located." While this provision correctly suggests that the costs are not borne by the transmission system operator (TSO) where the foreign capacity mechanism unit is located, it is not clear who should bear the costs for it. It is important

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that costs related to tasks listed in Article 26.10 are not borne by the consumers of the country or bidding zone where the foreign capacity is located either. The initial costs are most equitably borne by the entity acting as the capacity market operator and thereafter recovered through the associated cost recovery mechanism. Because a capacity mechanism is aimed at delivering reliability for the consumers of a Member State, the same consumers who accrue the benefits of the CM should also bear the costs for it. The TSO where the foreign capacity is located should effectively act as a subcontractor to the capacity mechanism operator that implements the capacity mechanism. It is most logical that the methodology, therefore, determine what reasonable costs a TSO can incur for undertaking the tasks listed in Article 26.10 of the Regulation.

9. Would you have any comments related to the part specifying the methodology for calculating the maximum entry capacity?

We recognise and agree with ENTSO-E's statement that the level of maturity of this methodology is less advanced (see section 3 of the explanatory document). At the same time, this raises a question about the usefulness of a consultation on a methodology that is not sufficiently developed. We suggest that ENTSO-E consults on it again once it has further refined the proposed methodology. The requirement to submit a proposal to ACER by 4 July 2020 suggests that there is enough time to consult on an advanced draft of the methodology under question. Thereby we offer comments and recommendations about how ENTSO-E can further refine this methodology.

According to ENTSO-E's proposal: "The Methodology for calculating the maximum entry capacity for cross-border participation does not apply when interconnectors participate directly in the capacity mechanism in the sense of Article 26(2) of Regulation (EU) 2019/943." We disagree with this approach. It makes sense that the methodology be used regardless of whether a capacity mechanism allows for the direct participation of resources or the participation of interconnectors (the latter approach would be phased out in due course, as determined in the Regulation). One objective of this methodology is to determine the expected contribution of foreign resources to the security of supply of a Member State (or to the bidding zones within it) that applies a capacity mechanism. The assessment is based in part on the likelihood of simultaneous system stress periods between the two systems. This expected contribution is independent of whether a capacity mechanism allows for the direct participation of capacity or the participation of interconnectors. The methodology, therefore, can be applied in both cases. For those reasons, we recommend that ENTSO-E changes the aforementioned provision to clarify that this methodology will also apply when interconnectors participate directly in a capacity mechanism.

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One of our key concerns about this methodology relates to the definition of system stress periods. ENTSO-E suggests equating system stress periods with periods of involuntary customer disconnections (i.e., periods where the energy not served figure in the ERAA modelling is greater than zero). This definition is extremely narrow and does not adequately reflect the times when the system is stressed from a system operation perspective. The system is indeed stressed when the available resources cannot meet the demand for energy and reserves. During these periods, the loss of load probability (LOLP) and risk of involuntary disconnections are material.

Considering only the periods when the system is expected to face involuntary disconnections in the ERAA model could imply that only a limited amount of periods need to be taken into consideration for assessing the expected contribution of foreign resources. It could thus be biased by limited and very specific conditions. (Note: Expected involuntary disconnections in the model does not mean that these will happen, but this outcome reflects an expectation of what might happen based on historical information and the projected evolution of the power system). Such a limited assessment would for example ignore any periods when the contribution of resources from outside a market with a CM have helped to secure supplies and avoid involuntary disconnections.

Implementation of the proposed definition would require defining LOLP across every Member State and bidding zone, especially if this is not already the case. For example, the ERAA model should already incorporate the LOLP estimate in Member States that have administrative shortage pricing in place, such as Great Britain, or others that are planning to implement it, such as Belgium and Poland. The implementation of LOLP should be relatively straightforward, given that the model encompasses an assessment of the different reserves required to operate the system safely.

[Note: The aforementioned definition of LOLP has been used for a long time in the power sector (e.g. in the Pool market in Great Britain). Most recently, the LOLP has been used widely in the implementation of administrative shortage pricing, also referred to as Operating Reserve Demand Curve in U.S. jurisdictions. In these markets, the price is defined administratively when the available resources are lower than the demand for energy and reserves, and in its basic configuration is determined by multiplying the LOLP by the value of lost load. This configuration forms the basis for alternative configurations too.]

Moreover, we believe that the methodology would benefit significantly from an analysis of the correlation between stress periods in the electricity market, based on the fundamental drivers of these periods. This, for example, could include study of the correlation between peak demand periods, production from variable renewables and hydro production, at a regional level. Such analysis would help ENTSO-E to better understand the potential risks of

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concurrent stress periods and complementarities between different systems, in order to determine where one system can help another. For example, according to the new interconnector between France and Spain, the Bay of Biscay interconnector, the two countries face peak demand at different times. [See INELFE. (2017). *Electricity interconnection France-Spain across the Bay of Biscay*. Retrieved from https://www.inelfe.eu/sites/default/files/2017-08/Inelfe_INGL_04Agos_WEB.pdf.] This is a good indicator that Spain could contribute to securing France's supplies at times of highest demand in France, when the system is more likely to be stressed, and vice versa. This is further supported by the fact that Spain faces a healthy resource adequacy situation, as evidenced by the latest ENTSO-E Mid-Term Adequacy Forecast. This recommended analysis would be helpful for the present methodology, but also beyond, to get a better grasp of the risks across Europe. [For an example of such an analysis see: Pöyry Management Consulting (UK) Ltd. (2013). *Analysis of the correlation of stress periods in the electricity markets in GB and its interconnected systems – A report to Ofgem*. Retrieved from https://www.ofgem.gov.uk/ofgem-publications/75231/poyry-analysis-correlation-tight-periods-electricity-markets-gb-and-its-interconnected-systems.pdf.]

Expected availability of interconnectors

The Regulation stipulates that the methodology should consider the expected *availability of interconnection*. We interpret this to mean both the technical and commercial availability of interconnectors, as both will have an impact on the level of support that can be provided by foreign resources. The proposed methodology by ENTSO-E does not touch on either element and would, therefore, benefit from being further developed to explain how it will take them into account.

With regard to the technical availability of interconnector — in other words, the probability of a cable being technically available or unavailable due to a fault — we recommend that this assessment is based on recent historical experience during the period the system with a CM is expecting to face tightness (e.g. the past 10 years), for each of the relevant cables. For Great Britain and France, for example, this would be the winter period, when the two systems are facing peak demand, instead of the entire year. The timeseries of historical years should be long enough to ensure that the results are not captured by one-off, large events. For future interconnection, technical availability should be assessed considering recent experience from cables that use the same technology either in Europe or internationally.

Regarding the commercial availability of interconnectors, it should be consistent with the Clean Energy for All Europeans package and, more specifically, with the provisions under Article 16 of the Regulation and any action plans that have been developed by Member States pursuant to Article 15 of the Regulation. These set the minimum level of interconnector capacity to be offered to the market. ACER has developed a recommendation for

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implementing the 70% minimum margin of capacity available for cross-border trade in electricity, that this present methodology should take into due consideration. [See ACER. (2019, 9 August). *ACER issues a Recommendation for implementing the 70% minimum margin of capacity available for cross border trade in electricity* [Webpage.] Retrieved from: https://acer.europa.eu/Media/News/Pages/Electricity-ACER-issues-a-Recommendation-for-implementing-the-70-minimum-margin-of-capacity-available-for-cross-border-trad.aspx.] It would also be important for the methodology to consider the realised level of interconnector capacity made available to the market where this is higher than the minimum level. For example, in the case of direct current interconnectors, the level of installed capacity that has been offered to the market is generally well above the minimum 70% target, as demonstrated by ACER's most recent Market Monitoring Report. These considerations are important to include in the assumptions about the level of interconnector capacity available to the market in the future for the participation of foreign resources in a capacity mechanism.

According to Article 6 of the methodology, the maximum entry capacity for cross-border participation (or the contribution) "shall be calculated as the average of imports during scarcity hours and shall be expressed in MW." We agree with ENTSO-E's proposal to use the average imports during system stress periods, notwithstanding our previous comments on the definition of these periods and the consideration of the technical and commercial availability of interconnectors. Using the minimum level of imports, instead of an average, would underestimate the contribution that foreign resources can make and unnecessarily increase the costs to consumers. Considering a maximum instead would overestimate the potential contribution of interconnectors and increase system risks. This balanced approach is similar to the one for estimating the availability of dispatchable resources, in that both of them consider the average over a given period.

According to Article 9,"The calculation shall consider the latest available 'Scenarios with Capacity Mechanisms'…" We believe that ENTSO-E would be wise to consider scenarios without capacity mechanisms here instead. The ERAA model does not simulate CM auctions and these scenarios will depend on TSO's decisions about the resources that will be successful in the CM auctions and where these are located. These subjective opinions would, in turn, determine the resource mix of the future and, effectively, the contribution of interconnectors, as the flows on them will depend on the available resources and relative costs. Thus, this whole approach would be circular if ENTSO-E considers scenarios with CMs.

In the same Article, the methodology proposes that: "Regarding assumptions of transmission capacity, the calculation of the contribution shall be consistent with the assumption used in the ERAA assessment and hence incorporate the relevant grid modifications applicable to the different target time horizons considered in the assessment." It is unclear what this provision

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refers to and we suggest that ENTSO-E expands further on it. By definition, any bidding zone considered in the model is assumed to be congestion free. Therefore, there is no apparent reason to consider transmission capacity within it, as this would never cause resource adequacy problems. It is unclear, therefore, what transmission capacity is referred to in this provision, and what the relevant grid modifications and different target time horizons would be. This provision would benefit significantly from further clarification.

The next paragraph of the same Article asserts that: "RCCs shall inform TSOs upon their recommendation in case the results of this *ERAA do not ensure that Reliability Standard* – defined by the methodology pertinent to Article 25 of Regulation (EU) 2019/943 – is met for countries with an existing or approved capacity mechanism." A similar point is made further down in the methodology, whereby: "If the result of the ERAA assessment shows that the considered country, having an existing or approved capacity mechanism, is significantly not respecting its national reliability standard target, (hence is not adequate), the NRAA [National Resource Adequacy Assessment] may calibrate the pertinent ERAA scenario chosen for the purposes of setting the maximum entry capacity available for the participation of foreign capacity within the capacity mechanism of the Member State performing the NRAA." At first, it is unclear why the reliability standard would not be met in the ERAA in the case of a CM. This is counterintuitive, given that the goal of a CM is exactly that, to achieve a certain reliability standard. In light of the fact that the ERAA doesn't contain a CM auction module, the decisions around the capacities that will be successful in a CM seem to rely entirely on the subjective opinions of national TSOs. The present methodology doesn't explain how the national TSOs will assess which resources will be successful in a CM. By default, it is extremely difficult to assess which resources will be successful in an auction, as this will depend on the availability of new resources, such as demand response, that might not be known at the time of the assessment, the bidding strategy of different market players, any available resources that may not participate in a CM and other parameters.

We generally believe that Article 9 of the methodology is problematic: Its objectives and content are largely unclear, and there appears to be little to no justification about the proposed provisions in it.

Finally, we would like to comment on the proposals about the use of national assessments in relation to the EU-wide assessment. Our understanding is that ENTSO-E proposes that national assessments can override the European-wide assessment (ERAA) when estimating the maximum entry capacity, if the reliability standard is not met in the ERAA. The approach proposed by ENTSO-E is that national TSOs amend the scenarios in this case, until they reach the established reliability standard. As commented above, we believe that the present exercise should base the maximum entry capacity estimate on scenarios without CMs, as the scenarios with CMs are effectively pre-determining the contribution of foreign resources. This

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change would also eliminate the burdensome exercise of deciding which resources will be successful in a CM. The present methodology does not explain how TSOs should treat both the ERAA (and by extension the RCCs recommendation) and NRAA, where relevant, when making a decision about the Maximum Entry Capacity for foreign capacities. We recommend that the results of the ERAA and NRAA be analysed together when deciding on the maximum entry capacity. This approach would be best served by taking into account the probability of the different EU-wide scenarios and national sensitivities and the outcome in each of them.

Moreover, Article 6 of the methodology suggests that: "Beyond the average indicator, the National Resource Adequacy Assessments (NRAA) may analyse the statistical distribution of the contribution over all scarcity hours, after the recommendation of Regional Coordination Centres (RCCs) to TSOs, pertinent to Article 26(7) of Regulation (EU) 2019/943." The methodology doesn't explain the purpose of this exercise, why the responsibility should lie with the national assessments or what scenarios, sensitivities and results it will consider. It would be useful if the methodology explained how the results are going to be used. If this refers to the detailed results of the ERAA, then it would seem appropriate that the RCCs provide this analysis as they are responsible for providing a recommendation to national TSOs about the maximum entry capacity.

10. Would you have any comments related to the part specifying the methodology for sharing the revenues?

Capacity market participation: Article 26 of the Internal Energy Market (IEM) Regulation states that capacity providers may participate in more than one capacity market for the same delivery period. The proposed ENTSO-E methodology is consistent with the Regulation text, but neither document is clear about whether the same capacity may be offered to multiple capacity markets for the same delivery period. However, the example given in 6.4 of the Explanatory suggests that the same capacity may not be offered to multiple capacity mechanisms for the same delivery period. This would be sensible, as a single tranche of capacity can only contribute in one capacity market. Offering the same capacity to multiple capacity markets, even given the prospect of multiple non-availability payments, would undermine confidence in the capacity offering. If it is the intention that the same capacity may not be offered to multiple capacity markets for the same delivery period, then this should be made clear in the methodology.

Revenues derived from a capacity mechanism: ENTSO-E's methodology is correct in maintaining that, where scarcity exists in two coupled jurisdictions simultaneously, interconnector capacity between the two is unlikely to be fully utilised and therefore

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transmission system operators (TSOs) should receive no income. However, it is unclear whether TSOs should receive income from selling capacity tickets in any circumstances.

If scarcity exists in only one jurisdiction, then market coupling should ensure that any interconnection is fully utilised. In this case, participation of foreign capacity in the jurisdiction's capacity market is likely to be of no particular value, as the interconnection is likely to be fully utilised whether contracts with foreign capacity exist or not. Where the existence of capacity contracts with foreign capacity may be of value is in making sure that capacity is available and able to contribute in circumstances where it is not required in its domestic market. In other words, the capacity would be available to ensure that the interconnection is more fully or fully utilised.

However, in either case, it is difficult to see why TSOs should be allowed to benefit from selling capacity tickets. If the interconnection is fully utilised via market coupling, the constrained interconnection will yield market coupling revenues equal to the product of the price differential and the interconnector flow. As no interconnector capacity will be reserved for capacity contribution during scarcity events, the fact that TSOs can obtain revenues from selling capacity tickets would result in them being paid twice for the same capacity.

If the interconnection capacity would be underutilised without the existence of capacity contracts, then this is an indication that scarcity exists at both ends of the interconnector. However, two situations could arise. First, the existence of capacity contracts could cause the interconnection to be fully utilised. In this case, the TSOs would receive the market coupling revenues referred to above; any additional revenues resulting from capacity tickets would amount to double payments. Second, the existence of capacity contracts could lead to increased interconnector flows, but the interconnection could remain unconstrained. This would be confirmation that scarcity existed in both of the coupled jurisdictions, with no additional revenues being justified.

The contention that TSOs should not receive additional revenue from selling capacity tickets is consistent with the situation that interconnectors are not paid for direct participation in capacity markets. In this case, the interconnector owner simply receives the capacity market clearing price with no extra revenues arising. If TSOs were allowed to receive income from selling capacity tickets and the foreign capacity received the capacity market clearing price, then additional revenues would be involved. Foreign capacity providers, having to pay for capacity tickets, would also be at a disadvantage to domestic capacity providers. This could arguably amount to discrimination and is therefore at odds with provision 8 of Article 26 of the IEM Regulation.

In considering the issue of TSO revenues, it is worth noting that the IEM Regulation does not explicitly require revenues to be derived from allocating the Maximum Entry Capacity, but

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only that ENTSO-E develops a mechanism for the allocation of any such revenues should they arise. The issuing of capacity tickets is not necessary to select or rank prospective foreign capacity contributors, as this would be achieved through the capacity auction process.

Eligibility criteria: The methodology for calculating maximum capacity market contributions appears to be based on a bidding zone, with one link between each zone. In practice, however, the contribution made by an individual generator will be dependent on location and topology of the internal bidding zone. Is there a need to consider the impact of network topology or congestion on the ability of a resource to contribute to a foreign capacity market? Is this simply covered by nonavailability penalties?

15. **What is your general feedback on the proposal, and would there be anything you would like to add?**

Similar to our response on the European Resource Adequacy Assessment methodology, our key comment is that this proposal has significant scope for improvement and development. Overall, the methodology leaves too much room for subjective interpretation. We believe, therefore, that it would benefit from more detailed descriptions, especially in the first two methodologies, for which we offer comments in our response.

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