Subject: State Aid SA.53821 (2019/N) – Italy
Modification of the Italian capacity mechanism

Excellency,

1 PROCEDURE

(1) On 21 March 2019, Italy notified a number of amendments to the market-wide capacity mechanism, which had received State aid clearance in 2018 (Commission Decision C(2018) 617 final of 7.2.2018 in Case SA.42011 (2017/N) – Italy – Italian Capacity Mechanism, ‘the 2018 decision’). In particular, Italy intends to introduce CO₂ emission limits for generation capacity that are eligible to the mechanism.

(2) On 4 April and 7 June 2019, the Commission requested additional information on the notified measure.

1 Official Journal of the European Union, C 158, 4 May 2018

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The Commission received two sets of observations following the notification of these amendments. The first was submitted by Italia Solare on 12 April 2019, and it was forwarded to the Italian authorities on 26 April and 2 May 2019. As explained in more detail below, Italia Solare has criticised certain features of the Italian capacity mechanism as approved by the 2018 decision.

On 23 April 2019, the Commission received observations by Elettricità Futura. Elettricità Futura submitted that the amended capacity mechanism will help addressing the generation adequacy problems in Italy and will be key to reaching the decarbonisation targets set by the Clean Energy Package\(^2\). The Commission replied to Elettricità Futura by letter of 16 May 2019.

On 2024, and 28 May 2019 and 7 June 2019, the Italian authorities provided the additional information requested on 4 April 2019 and the comments to Italia Solare’s letter.

On 17 May 2019, Italy waived its rights deriving from Article 342 TFEU in conjunction with Article 3 of EC regulation 1/1958 and agreed to have the present decision adopted and notified in English language.

2 DESCRIPTION OF THE MEASURE

2.1 Background

2.1.1 The capacity mechanism as approved in 2018

The 2018 decision found that several market failures have put generation adequacy at risk in Italy, namely the fact that reliability is a public good, the lack of coordination between investments in generation and transmission, the existence of a missing money problem\(^3\). Some of these market failures are exacerbated by the growing penetration of intermittent renewables, which is expected to further increase in the future\(^4\).

The Transmission System Operator (‘TSO’) conducted a generation adequacy assessment using a probabilistic methodology\(^5\). Generation adequacy was assessed against a Loss of Load Expectation (‘LOLE’) standard and an Energy Not Supplied (‘ENS’) standard. The LOLE represents the number of hours per annum in which, over the long-term, it is statistically expected that supply will not meet demand. For the purpose of

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\(^2\) See COM(2016) 860 final Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank - Clean Energy For All Europeans and Press release IP/16/4009

\(^3\) For a detailed description, see Section 2.1.2 of the 2018 decision.

\(^4\) See recitals 10 and 16 of the 2018 decision.

\(^5\) See recital 32 of the 2018 decision.
its analysis, the TSO used a LOLE of 3 hours/year. The assessment performed by the TSO related to 2017, 2020 and 2025 and concluded that the existing capacity would not be able to meet LOLE and ENS targets in the subsequent five to ten years\(^6\).

(9) In order to ensure generation adequacy, Italy is undertaking a number of market reforms and, in parallel, planned to introduce a capacity mechanism. The market reforms to be undertaken include the implementation of market coupling, the improvement of intraday trading possibilities, reforming the balancing market, reinforcing demand-side response participation in the market, investing in storage technologies, upgrading the transmission network and increasing interconnection.\(^7\)

(10) However, Italy expects that these measures are not sufficient to overcome the identified market failures and to ensure that the market will deliver sufficient capacity, for a number of reasons. First, they will produce their effects only in the medium and long term. Second, the missing money problem will continue to persist even after the reform if scarcity prices occur very rarely, which could be the case given Italy's ambitious targets in terms of renewables penetration. Finally, while grid upgrades can certainly contribute to address the generation adequacy issue in Italy, they cannot completely substitute investment in generation, storage, and demand-response. This is due to the technical characteristics of transmission capacity and because these investments are often obstructed by local communities and thus riskier and lengthier than the building of new generation, storage, and demand-response capacity\(^8\).

(11) Therefore, Italy plans to complement the market reforms (see recital (9)) by the introduction of a volume-based and market-wide mechanism ("the scheme as approved in 2018") where reliability options ("ROs") would be traded in central auctions managed by the TSO. The mechanism aims at procuring the level of capacity required to meet the desired LOLE standard. Italy will implement the mechanism in two phases: a First Implementation Phase and a Full Implementation Phase\(^9\). The main difference between the two phases is that the latter has a lead time of four years, while the former has lead times going from a few months to three years.

(12) The amount of capacity to be procured is expressed through a sloping demand curve and is defined by the TSO using a methodology similar to the one used to conduct the generation adequacy assessment.\(^{10}\) Since the Italian electrical system is divided in six different zones and the generation

\(^6\) See recitals 33-34 of the 2018 decision.

\(^7\) For a detailed description, see Section 2.1.3 of the 2018 decision.

\(^8\) See recitals 26-27 of the 2018 decision.

\(^9\) See recital 78 and Sections 2.7.1 and 2.7.2 of the 2018 decision.

\(^{10}\) See Section 2.5 of the 2018 decision.
adequacy assessment showed different levels of reliability for each zone\textsuperscript{11}, the TSO determines a demand curve for each zone. Before each auction, the TSO publishes the demand curve for each bidding zone. \textsuperscript{12} Every product is traded in a main auction followed by adjustment auctions and trading on the secondary market. \textsuperscript{13}

(13) The scheme as approved in 2018 was open to all capacity providers who met the requirements described in Section 2.6 of the 2018 decision, including foreign capacity. Those requirements did not include CO\textsubscript{2} emission limits. Participants can offer capacity on the basis of their likely available capacity (\textit{Capacità Disponibile in Probabilità} or ‘CDP’). CDP is assessed ex-ante taking into account some parameters representing the units' unavailability rates (i.e. de-rating). The de-rating factors for domestic capacity are calculated before each auction on the basis of historical data\textsuperscript{14}. Existing capacity providers will be able to qualify only one third of their capacity for each main auction\textsuperscript{15}.

(14) The supply curve is obtained by the auction offers presented in an ascending order. Eligible capacity not offered in the auction and ineligible capacity (for instance subsidised capacity) are implicitly considered as offered at 0 EUR/MW/year and do not receive any remuneration\textsuperscript{16}.

(15) The amount of capacity to be contracted and the premium awarded to successful bidders result from the intersection between the demand and the supply curve. In case of equivalent financial offers, priority is given to flexible capacity (capacity with a short start up time), which is particularly suitable to overcome the challenges that the TSO is facing in terms of system management. In case of equally flexible capacity, preference is given to low-carbon capacity.

(16) The premium is the clearing price of the auction on the basis of the marginal price principle (pay-as-clear)\textsuperscript{17}. Offers are capped, i.e. subject to a maximum price. The purpose of price caps is to protect consumers from unforeseen problems with the auction, such as a lack of competition or abuse of market power by participants. The price cap for offers submitted by existing capacity will be set in the range from EUR 25 000/MW/year to

\textsuperscript{11} See recital 34 of the 2018 decision.

\textsuperscript{12} See recital 56 of the 2018 decision.

\textsuperscript{13} See recital 77 of the 2018 decision.

\textsuperscript{14} See recitals 51 and Section 2.6 of the 2018 decision.

\textsuperscript{15} See recital 80 of the 2018 decision.

\textsuperscript{16} See recitals 67 and and Figure 5 of the 2018 decision.

\textsuperscript{17} See recitals 69 – 72 of the 2018 decision.
EUR 45 000/MW/year, on the basis of the annual fixed operating costs of combined cycle gas-fired plants (excluding depreciation costs)\(^\text{18}\).

(17) Furthermore, during the First Implementation Phase\(^\text{19}\), in the main auctions with a lead period shorter than three years and in the related adjustment auctions, the cap for existing capacity is applied as a pure cap. This means that existing capacity will not receive a higher premium even if the auction clears at a higher price because higher-priced bids for new capacity are accepted. Italy considers that the application of a pure cap avoids market abuse and moral hazard by holders of existing capacity, who could offer a bid for new capacity only to ensure a higher remuneration for their existing capacity. In the main auctions with a lead period of at least three years, existing capacity will receive a premium higher than the cap only if at least one offer of new capacity is accepted that is higher than the cap. Otherwise, the premium will be capped at the cap for existing capacity\(^\text{20}\).

(18) The capacity market auction is based on a market splitting mechanism. This means that participants submit offers for the areas where they are located but capacity located in one area can contribute to the adequacy of other areas up to the transmission limits between areas. The auction algorithm accept offers with the objective of minimising the costs to achieve the projected overall capacity demand, while satisfying maximum transmission limits between areas. The Italian authorities explained that the algorithm is conceptually similar to the mechanism used in the day-ahead market coupling. If the expected flows on the grid resulting from the auction process do not exceed any transmission limits, the clearing price of the auction will be the same across all areas. All capacity providers will then receive the same premium irrespective of their location. In contrast, if transmission limits are exceeded, the algorithm ‘splits’ the market in two or more market areas with different clearing prices\(^\text{21}\). The aim of the zonal auctions is to send locational signals for investment and to promote a coordinated development of investment in transmission and generation capacity\(^\text{22}\).

(19) During the delivery period, contracted capacity providers receive the premium and are under the obligation to pay to the TSO an amount equal to the difference between the reference price (based on the electricity market prices) and a pre-determined strike price, whenever the reference price

\(^{18}\) See recitals 70 and 71 of the 2018 decision. Starting from the second auction, based, for instance, on information gained in previous auctions, the price cap applied to existing capacity can be revised provided that either the new value is lower than EUR 25 000/MW/year or it does not exceed the upper limit of the abovementioned range (EUR 45 000/MW/year) multiplied by 1.2.

\(^{19}\) See Section 2.7.1 of the 2018 decision.

\(^{20}\) See recital 79 of the 2018 decision.

\(^{21}\) See recitals 75 and 76 of the 2018 decision.

\(^{22}\) See recital 27 of the 2018 decision.
exceeds the strike price. The strike price is set at the level of the standard hourly variable cost of the technology with the highest variable costs (i.e. peak technology). The obligation is load following, meaning that it will proportionally reduced ex post, if demand can be met by a portion of the contracted capacity. The payback obligation applies regardless of whether a capacity provider has offered capacity in the reference markets. Therefore, it provides the selected capacity providers with the incentive to make available their contracted capacity, especially in times of scarcity when the reference price is more likely to rise above the strike price.

(20) The TSO sanctions capacity provider in case of temporary and definitive non-fulfilment of the obligations.

(21) The annual expenditure associated with the capacity mechanism will depend on the results of the auctions. Italy estimated an annual budget between EUR 0.9 billion and EUR 1.4 billion for the first auction.

(22) The Italian Authorities have not set an end-date for the capacity mechanism since the measure is a long term intervention intended to complement the energy-only markets. However, Italy committed not to apply the measure beyond the duration authorised in the 2018 decision, unless it re-notifies the measure sufficiently in advance and the Commission has approved it.

(23) The Italian authorities explained that the duration of the capacity market will be subject to periodical assessments in order to verify whether it proves to be the most effective instrument to address underlying market failures. In particular, the TSO will periodically revise the adequacy assessment and Italy will periodically assess the effects of market reforms on security of supply and has committed to monitor annually the functioning of the capacity market with a view to re-assess its necessity and modify the measure if need be.

(24) The Italian authorities confirmed that any cumulation with other aid measures is excluded. In particular, if the generators receive any other State aid related to energy production, they can choose to relinquish the other

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23 See Section 2.8.1 of the 2018 decision.
24 See recital 90 of the 2018 decision.
25 See recital 93 of the 2018 decision.
26 See recital 94 of the 2018 decision.
27 See Section 2.8.2 of the 2018 decision.
28 See Section 2.10 of the 2018 decision.
29 See Section 2.11 of the 2018 decision.
30 See recital 107 and footnote 35 of the 2018 decision.
31 See recitals 28 and 37 of the 2018 decision.
support and participate in the capacity market, or keep the support and not participate in the capacity market\textsuperscript{32}.

\textbf{(25)} The capacity mechanism is described in detail in the 2018 decision. The mechanism has not been implemented yet.

\textbf{(26)} The legal basis of the capacity mechanism are:

\textbf{(a)} Legislative Decree No 379/2003, which provides that the energy regulator (Autorità di Regolazione per Energia Reti e Ambiente – ‘ARERA’) should define the criteria and conditions on the basis of which the Transmission System Operator (‘TSO’) shall propose a mechanism to remunerate capacity in order to guarantee system adequacy. Such proposal is approved by the Minister for Economic Development (‘the Minister’) after hearing the ARERA.

\textbf{(b)} Article 1, paragraph 153 of law No 147/2013, which provides that the Ministry of Economic Development (the 'Ministry') shall define the conditions and modality for the definition of a capacity remuneration system for flexible capacity.

\textbf{(c)} Minister's decree of 30 June 2014, which approved the TSO's proposal of 20 September 2013 TE/P20130004704, following the ARERA Decision ARG/elt/98/11 of 21 July 2011.\textsuperscript{33}

\textbf{(27)} The capacity market is financed through a charge levied on a monthly basis upon the dispatching users per energy withdrawal point (mainly retailers) and is collected by the TSO. The overall value of this charge corresponds to the aggregated premiums paid to the capacity providers minus the money returned to the TSO by capacity providers in case they sell electricity above the strike price. The amount of the charge for each dispatching user is calculated mainly based on its contribution to peak system load\textsuperscript{34}.

\subsection*{2.1.2 The electricity regulation}

\textbf{(28)} In November 2016, the Commission adopted a proposal for a Regulation on the internal market for electricity (recast)\textsuperscript{35} (‘the new electricity regulation’), on which a political agreement was found in December 2018. The new electricity regulation\textsuperscript{36} has not entered into force yet.

\textsuperscript{32} See Section 2.12 of the 2018 decision.

\textsuperscript{33} See Section 2.2 of the 2018 decision.

\textsuperscript{34} See recitals 45-46 of the 2018 decision.

\textsuperscript{35} COM (2016) 861

(29) The new electricity regulation will include a chapter on capacity mechanism (Chapter IV), which introduces CO2 emission limits for installations that participate in those mechanisms.

(30) In particular, Article 22 (4) of the new electricity regulation provides that:

“Capacity mechanisms shall incorporate the following requirements regarding CO2 emission limits:

(a) from ... [date of entry into force of this Regulation] at the latest, generation capacity that started commercial production on or after that date and that emits more than 550 g of CO2 of fossil fuel origin per kWh of electricity shall not be committed or to receive payments or commitments for future payments under a capacity mechanism;

(b) from 1 July 2025 at the latest, generation capacity that started commercial production before ... [date of entry into force of this Regulation] and that emits more than 550 g of CO2 of fossil fuel origin per kWh of electricity and more than 350 kg CO2 of fossil fuel origin on average per year per installed kWe shall not be committed or receive payments or commitments for future payments under a capacity mechanism;

The emission limit of 550 g CO2 of fossil fuel origin per kWh of electricity and the limit of 350 kg CO2 of fossil fuel origin on average per year per installed kWe referred to in points (a) and (b) of the first subparagraph shall be calculated on the basis of the design efficiency of the generation unit meaning the net efficiency at nominal capacity under the relevant standards provided for by the International Organization for Standardization.

[...]”

(31) Concerning the interplay between the new electricity regulation and the 2018 decision, the latter states:

“The Commission underlines that this decision needs and will need to be interpreted in the light of relevant secondary legislation, including legislation that has not been adopted yet at the time of this decision. In this regard, the Commission would like to point to the proposal for a Regulation on the internal market for electricity (recast), COM (2016) 861, and in particular to the principles (such as the requirements regarding CO2 emission limits) which capacity mechanisms need to incorporate and apply, even if they are already in force and have been deemed as compliant with Union state aid rules, in line with the final text of the Regulation when it becomes effective.”

37 See footnote 50 of the 2018 decision.
2.2 The notified amendments to the capacity mechanism (as approved by the 2018 decision)

2.2.1 Generation adequacy situation and 2019 National Energy and Climate Plan

(32) As regards the general context and generation adequacy situation, Italy refers, first, to the analysis submitted in the context of case SA.42011 and described in Section 2.1 of the 2018 decision.

(33) In particular, Italy confirms that the Italian electricity system faces decreasing levels of generation adequacy because of the market failures referred to in recital (7) above and illustrated in detailed in Section 2.1.2 of the 2018 decision. Italy also confirmed that it is undertaking the market reforms referred to in recital (9) above and described in Section 2.1.3 of that decision, in parallel to the introduction of the capacity mechanism, in order to address those market failures.

(34) Italy also refers to the results of the generation adequacy assessment referred to in recital (8) above and illustrated in Section 2.1.4 of the 2018 decision and confirms that a similar methodology will be used to determine the amount of capacity to be procured in the capacity auctions. ENTSOE’s Mid-term Adequacy Forecast 2018 identified LOLE values higher than 3 hours in several Italian bidding zones in 2020 and 2025.

(35) Finally, in its 2019 Energy and Climate Plan, Italy has reiterated its intention to phase-out coal-fired generation by 2025.

(36) Table 1 below illustrates the amount of de-rated coal-based generation capacity over the total de-rated installed capacity per bidding zone in 2019.

2.2.2 Objective of the amended capacity mechanism

(37) The capacity mechanism as modified by the notified amendments (“the amended capacity mechanism”) aims at attaining the required level of security of electricity supply, while providing the investment signals to promote more environment-friendly capacity, in line with the new electricity regulation. The zonal auctions also aim at stimulating such investments in the areas where they are needed the most and to promote a coordinated development of investment in transmission and generation, storage and demand-response capacity.

2.2.3 Overview of the notified amendments

(38) Italy intends to apply CO₂ emission limits (‘the CO₂ emission limits’) to generation capacity that aims at participating in the capacity mechanism.

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38 ENTSO-E - Mid-term Adequacy Forecast 2018, Appendix 1: Methodology and Detailed Results, p. 29, 34, and 40.

39 This was already foreseen in the 2018 decision (see recital 10).

40 In principle, the CO₂ emission limits also apply to foreign capacity. However, the rules governing the participation of foreign capacity will remain unchanged as compared to the scheme as approved in
Those limits are in line with those provided for in Article 22 (4) of the future new electricity regulation. Italy also intends to increase the lead-time of the first auctions and partially modify the qualification requirements for new capacity (‘the notified amendments’).

(39) All the other features of the existing capacity mechanism, as described in Sections 2.4 to 2.12 of the 2018 decision, will remain unchanged.

2.2.4 CO₂ emission limits and effects of their application

(40) As of the first capacity auction⁴¹, Italy intends to apply the following CO₂ emission limits:

(a) New generation capacity and refurbished generation capacity can participate in the capacity mechanism only if it does not emit more than 550 g of CO₂ of fossil fuel origin per kWh of electricity;

(b) Existing generation capacity can participate in the capacity mechanism only if it does not emit more than 550 g of CO₂ of fossil fuel origin per kWh of electricity. If that limit is not complied with, existing capacity can participate in the capacity mechanism if it commits not emit more than 350 kg CO₂ of fossil fuel origin on average per installed kWe, for any given delivery year.

(41) The application of the CO₂ emission limits will affect mainly coal-fired generation. Oil-fired capacity could also be affected. In Italy, the only remaining oil-fired power plant is located in Sicily [...].

(42) The effects of the application of the CO₂ emission limits on the capacity eligible to participate in the mechanism and on the capacity auctions are illustrated in Table 1 and Table 2 below and Figure 1 and Figure 2 below.

(43) Table 1 provides an overview of the estimated amount of total (de-rated) capacity in each zone and of the (de-rated) coal-fired capacity in 2019.
Table 1 – Total available capacity vs available capacity affected by emission limits in GW

<table>
<thead>
<tr>
<th>Available capacity (including coal-fired capacity)</th>
<th>Total</th>
<th>Nord</th>
<th>Centre-Nord</th>
<th>Centre-South</th>
<th>South</th>
<th>Rossano</th>
<th>Sicily</th>
<th>Sardinia</th>
</tr>
</thead>
<tbody>
<tr>
<td>[59-69]</td>
<td>[33-37]</td>
<td>[3-4]</td>
<td>[8-9]</td>
<td>[8-9]</td>
<td>[2-3]</td>
<td>[4-5]</td>
<td>[1-2]</td>
<td></td>
</tr>
</tbody>
</table>

| Coal-fired capacity | 6 | 1.5 | 0.1 | 1.6 | 1.9 | 0 | 0 | 0.8 |

(44) Table 1 contains the estimates of the amount of capacity to be contracted in the mechanism for each zone for the year 2019\(^2\).

Table 1 Estimated capacity demand per zone in 2019 (GW)

<table>
<thead>
<tr>
<th>Zone</th>
<th>Estimated demand(^3) capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Centre-North</td>
<td>[36.5 - 38.5]</td>
</tr>
<tr>
<td>Centre-South</td>
<td>[9-10]</td>
</tr>
<tr>
<td>South Rossano</td>
<td>[4.5 – 5]</td>
</tr>
<tr>
<td>Sicily</td>
<td>[4.5-5]</td>
</tr>
<tr>
<td>Sardinia</td>
<td>[2-2.5]</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>[60-65]</strong></td>
</tr>
</tbody>
</table>

\(^2\)The figures will be adjusted to the generation adequacy assessment concerning the relevant delivery year.

\(^3\) It corresponds to point B of the capacity demand curve illustrated in Figure 4 of the 2018 decision.
Italy also provided data on the transmission capacity between zones, shown in Table 2.

### Table 2 Transmission capacity between zones (MW)

<table>
<thead>
<tr>
<th>Zone A</th>
<th>Zone B</th>
<th>Limit A $\rightarrow$ B (MW)</th>
<th>Limit B $\rightarrow$ A (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Center – North</td>
<td>[1500 – 3000]</td>
<td>[1000 – 2500]</td>
</tr>
<tr>
<td>Center – North</td>
<td>Center – South</td>
<td>[500 – 2000]</td>
<td>[2000 – 3000]</td>
</tr>
<tr>
<td>Center – South</td>
<td>South</td>
<td>[2500 – 3000]</td>
<td>[3000 – 4000]</td>
</tr>
<tr>
<td>South</td>
<td>Rossano</td>
<td>[500 – 1000]</td>
<td>[1500 – 2500]</td>
</tr>
<tr>
<td>Center – South</td>
<td>Sardinia</td>
<td>[500 – 1000]</td>
<td>[1000 – 1500]</td>
</tr>
<tr>
<td>Rossano</td>
<td>Sicily</td>
<td>[500 – 800]</td>
<td>[500 – 800]</td>
</tr>
</tbody>
</table>

Figure 1 and Figure 2 below illustrate the percentage of existing eligible capacity per market operator under the scheme as approved in 2018 and after the exclusion of coal-fired power plants is excluded, respectively.

**Figure 1 Available (de-rated) capacity per market operator including coal-fired power plants**
2.2.5 Measures to incentivise the participation of new capacity in the auctions

(47) Italy will implement a number of measures to incentivise the participation of new capacity in the auction. The first consists in increasing the lead-time for the first auction from a few months\(^{44}\) to at least two years. Furthermore, Italy will allow the participation in the auctions of installations that, during the qualification phase, have requested the relevant permits but have not obtained them yet\(^{45}\).

2.2.6 Clarifications on the function of the scheme as approved in 2018

(48) Italy provided a number of updates and clarifications as regards the legal basis, the financing of the mechanism, the transparency requirements and the application of a number of features of the scheme as approved in 2018 in light of the notified amendments.

(49) As regards the legal basis, in addition to the one mentioned in recital (26) above, ARERA has adopted Decision 261/2018/R/ee, which modifies Decision ARG/elt 98/11 in order to bring the capacity mechanism design in line with the measure as notified under SA.42011.

(50) The financing of the mechanism remains the same as described in recital (27) above. In particular, article 5(5) of Legislative Decree 379/2003 empowers ARERA to regulate the financing of the capacity mechanism “taking into account the tariff revenues devoted to it”. ARERA has done so in its Decision ARG/elt 98/11 (updated in 2018), which provides that the capacity mechanism is financed through a charge levied on a monthly basis upon the dispatching users per energy withdrawal point (retailers, shippers

\(^{44}\) See recital 79 of the 2018 decision.

\(^{45}\) The mechanism as approved in 2018 required capacity providers to have obtained the necessary building permits in order to participate in the auction (see recital 57 of the 2018 decision).
and large customers), as explained in the 2018 decision. Italy has clarified that dispatching users are obliged to pay the charge.

(51) The charge is applied by the TSO on the basis of the methodology established in Article 14 of ARERA’s Decision ARG/elt 98/11, which is based on the dispatching users’ contribution to peak system load. The latter is also defined by the ARERA Decision.

(52) The Italian authorities also confirmed that they will apply the transparency conditions laid down in Section 3.2.7 of the EEAG.

(53) Italy also confirmed that the market power mitigation measures of the scheme as approved in the 2018 remain unchanged. Therefore, the auction price caps described in recitals (16) and (17) above will remain applicable. Moreover, as explained in recital (14) above, eligible capacity not offered in the auction and ineligible capacity (for instance subsidised capacity) are implicitly considered as offered at 0 EUR/MW/year and do not receive any remuneration. Italy has also explained that this capacity will be implicitly considered as offered at 0 EUR/MW/year and do not receive any remuneration (supply curve).

(54) Finally, Italy confirmed that new capacity contracted in the auction that does not become operational at the start of the delivery period faces the penalties described in recital (20) above and Section 2.8 of the 2018 decision. Therefore, the TSO will suspend the payment of the capacity premium for the months in which the capacity provider does not comply with the availability obligation. If this occurs for a certain number of months, the TSO will reallocate the correspondent contracted capacity in the adjustment auctions or in the secondary market, unless the capacity provider can fulfil its obligation with other existing installations of the same kind. In that case, the capacity provider will pay a penalty corresponding to 10% of the premium of the last auction in which it took part. Moreover, it loses the guarantees provided during the qualification phase.47

3 THIRD PARTIES’ OBSERVATIONS

3.1 Observations of Italia Solare

(55) Italia Solare is an association of small electricity producers from photovoltaic sources and other companies operating in the PV value chain. In its submission, Italia Solare maintains that it is not aware of the subject of the notification in the present case. Therefore, the observations sent by Italia Solare refer to the mechanism as approved in 2018 and not to the notified amendments with the exception of the alleged lack of public consultation.

46 See recitals 45 and 46 of the 2018 decision.

47 See recital 57 of the 2018 decision.
**Lack of proper public consultation**

(56) Italia Solare criticises that Italy has not carried out a public consultation on the notified capacity mechanism scheme as approved in 2018. Moreover, according to Italia Solare, Italy should have publicly consulted also on any modifications to the approved scheme and has not done so. Italia Solare therefore requests the Commission to suspend the assessment in the present case until Italy has carried out a proper public consultation.

**Necessity of and alternatives to the capacity mechanism**

(57) Italia Solare also disputes the necessity of the capacity mechanism for a number of reasons.

(58) First, Italia Solare claims that the Commission should reassess the necessity of the capacity mechanism after Italy has introduced support measures for renewable energy sources and after verifying the effects of such measures. In its view, the Italian legislation hinders the development of new renewables installations and self-consumption. This is due to:

(a) the authorisation process for renewables installations, which is too cumbersome;

(b) the methodology to establish electricity retail tariffs, which is based on capacity rather than on consumption;

(c) the domestic regulation on self-consumption for apartment buildings;

(d) the absence of public financial incentives and fiscal measures in favour of photovoltaic installations and renewables installations in general.

(59) According to Italia Solare, the introduction of the capacity mechanism will further hinder the development of renewables as it will distort price signals, which are necessary for renewables penetration in the market.

(60) Second, Italia Solare contests the existence of a missing money problem in Italy, based on the argument that investments in photovoltaic installations have come forward based on long-term power purchase agreements. Moreover, the introduction of capacity-based tariffs, which, according to Italia Solare will lead to an increase in consumption, would demonstrate that the Italian electricity system does not face a generation adequacy problem.

(61) Third, Italia Solare states that electricity production from coal-fired capacity (which amounts to around 30 TWh) could be entirely replaced by renewables production, which is estimated to attain 30 TWh in 2025 and to further grow in subsequent years.

(62) Finally, Italia Solare is of the view that some of the market failures described in recital (7) above could be addressed by the introduction of negative prices and by allowing demand response and distributed energy sources to fully participate in the balancing and ancillary services markets.
and in the intraday market. In the latter, gate closure should be closer to delivery.

**Design of the capacity mechanism**

(63) According to Italia Solare, there are no significant price differences between the various bidding zones in Italy. Moreover, the retail price in Italy is the same irrespective of the bidding zone (Prezzo Unico Nazionale – PUN). Speculations on zonal prices could be avoided by not applying the PUN.

(64) Italia Solare also criticises as too strict the de-rating factors that Italy intends to apply to renewables installations participating in the capacity mechanism.

**Other observations**

(65) Italia Solare points out that it was not appropriate for the Commission to grant State aid clearance to the Italian capacity mechanism while the new electricity regulation was being negotiated by the co-legislator.

(66) Finally, Italia Solare requests information on and access to the audit report on the generation adequacy assessment produced by FTI-CL Energy for the TSO.

3.2 **Italy’s position on the observations of Italia Solare**

**Lack of proper public consultation**

(67) The Italian Authorities observe in this respect that the scheme as approved in 2018 has been subject to several public consultations. ARERA’s decision ARG/elt 98/11 (see recital (26) above) has been issued by the regulator after five public consultations, the first of which dates even back to 2005.

(68) ARERA’s decision 261/2018/R/eel has modified decision ARG/elt 98/11 in order to bring the capacity mechanism design in line with the measure as notified under SA.42011. The modifications to the 2011 ARERA’s decision have been the subject of two public consultations.

(69) The detailed rule governing the mechanism prepared by Terna have also been the subject of several public consultations.

(70) Although, Italia Solare did not refer to the notified amendments in its observation, the Italian authorities have made public in several occasions their intention to introduce the CO₂ emission limits, also in the context of the consultation on the 2019 national energy and climate plan. They also note that, in any case, those limits will soon be made binding by the new electricity regulation.

**Necessity of and alternatives to the capacity mechanism**

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48 See recital 36 of the 2018 decision.
The Italian authorities observe that the introduction of the capacity mechanism will not hinder the development of renewables installations and self-consumption. On the contrary, the capacity mechanism aims at incentivising investments in a technology neutral manner. Renewables installations can take part in the mechanism. In addition, following the introduction of the CO\textsubscript{2} emission limits, the capacity mechanism will provide even more incentives to invest in new low-emission capacity.

Moreover, Italy contest the allegations that the Italian legislation hinders the development of renewables and self-consumption. Even in the absence of a support scheme, the Italian authorities have processed permits requests for renewables installations for a total of around 23 GW of capacity. They also submit that between 2008 and 2018 the capacity of solar installations increased from 438 MW to 20.087 MW, while capacity of wind installations increased from 3.538 MW to 10.094 MW. Moreover, Italy is in the process of introducing a support scheme for renewables installations, with the objective of attaining 66 GW of renewables capacity in 2025 (it was 53 in 2017) and 93 GW in 2030. Italy also explained that the adoption of the new methodology to calculate electricity tariffs (based on capacity rather than on consumption) aims at incentivising the use of electricity as a primary source of energy rather than the use of gas or oil (e.g. for heating purpose, in transports, etc). This will increase energy efficiency and reduce CO\textsubscript{2} emissions. Moreover, it will increase renewables penetration and incentivise self-consumption. Finally, Italy explained that regulation on apartment buildings is justified by the need to avoid the proliferation of costly electricity lines. In any event, Italy is undertaking an evaluation of that regulation and other rules that may affect self-consumption also in view of the transposition of Directive 2018/2001\textsuperscript{49}.

Italy underlines that the impact of the capacity mechanism and in particular the strike price, on electricity prices will not hinder renewables development. First, the strike price is set at a much higher level than the renewables’ variable costs. Second, it leaves price signals intact, while the payback obligation avoids that capacity contracted in the mechanism keeps any scarcity rent.

As regards the alleged absence of a missing money problem, Italy points to the results of the generation adequacy assessments conducted by the TSO. It also reiterates the existence of the market failures referred to in recital (7) above. Moreover, Italy highlights that power purchase agreements currently play a marginal role in fostering investments and are not sufficient to incentivise the adequate amount of capacity needed to overcome the identified generation adequacy concerns. Finally, the capacity mechanism is no obstacle to the conclusion of such agreements and it takes into account the capacity which is subject to those agreements\textsuperscript{50}. This allows the capacity


\textsuperscript{50} Such capacity can participate in the auction if does not receive aid (see recital (13) above) or will be considered as available to the system if it receives aid or does not participate in the auction (see recital (14) above)
mechanism to reach the generation adequacy objective at the lowest cost for consumers by contracting only the necessary minimum capacity.

(75) As for the introduction of capacity-based household tariffs at distribution level, their aim is to best reflect system costs and provide adequate signals to consumers in this regard. The reform also aims at promoting energy efficiency and the reduction of CO₂ emissions, as explained in recital (72) above.

(76) Italy explained that, due to the penetration of renewables, and especially photovoltaic installations, the so called ‘net load curve’ representing the difference between total load and generation from renewables is changing fundamentally. There is higher volatility and rapid load decrease in the morning when the sun starts shining followed by a sharper load increase in the evening when the sun sets. Moreover, the high penetration of renewable resources brings to a reduction of system inertia and short circuit power. These sudden variations and the above-mentioned issues must be addressed by programmable and flexible capacity. The situation will become more critical following the phase-out of coal-fired generation. Therefore, investments in flexible capacity and transmission capacity are crucial to ensure a smooth grid management with increasing renewables penetration. The capacity mechanism aims at stimulating such investments.

(77) As regards the observations referred to in recital (62) above, Italy explained that it has already launched a pilot project, which allows demand-response, storage, and distributed energy sources to participate in the ancillary services market on an aggregated basis. New pilot projects on the provision of tension regulation services by intermittent renewables will be launched in 2019. The aim of those pilot projects is to gradually open the ancillary services markets to all types of capacity. Italy points out that the introduction of negative prices could negatively affect renewables installations. Therefore, Italy will evaluate the impact of negative prices in the context of a wider market design reform that aims at implementing the Balancing Network Code. Renewables can already participate in the intraday market. Italy also reiterates in this respect that it is improving intraday trading possibilities, as explained in the 2018 decision.

Design of the capacity mechanism

(78) Italy provided data showing that electricity prices in the different bidding zones can differ quite significantly, especially if one compares prices variations in short periods. The PUN allows the socialisation of electricity costs at retail level, while leaving intact locational price signals at wholesale level. In any case, Italy will evaluate whether to maintain the PUN in view of further promoting the development demand response. Finally, Italy

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52 See recital 19 of the 2018 decision.
explained that zonal auctions in the capacity mechanism are essential to send locational signals for investments or decommissioning.

(79) Italy confirms that, as stated in the 2018 decision, de-rating factors are calculated on the basis of historical data53 and reflect the effective contribution of each technology to be available in times of scarcity. To further substantiate its argument, Italy has provided data on the actual de-rating factors of PV and wind installations in the 500 hours a year with the highest system load for the period 2014-2018 (see Figure 3 below).

![Figure 3 De-rating PV and wind in 2014-2018](image)

[...]  

(80) The data show that the de-rating of PV installations was higher than 80% in 86% of the hours, while those of wind installations was higher than 80% in 77% of the hours. These data are consistent with the de-rating factors for renewables approved in the 2018 decision54.

(81) In any case, Terna will publish the precise de-rating values and the underlying methodology at least 60 days in advance of each auction.

Other observations

(82) Italy observes that it is undertaking a number of market reforms in parallel to the introduction of the capacity mechanism, as explained in the 2018 decision55. Moreover, the mechanism received State approval at EU level. Finally, the changes Italy intends to introduce are in line with the new electricity regulation. Assessment of the amended capacity mechanism

4 ASSESSMENT

4.1 Preliminary remarks

(83) Under Article 1(c) of the regulation on State aid procedure56, alterations to existing aid' are to be regarded as new aid. Pursuant to Article 2 of that regulation, such alterations are subject to the notification requirement57.

53 See recital 60 and 61 to 63 of the 2018 decision.

54 See, in particular, recital 63 of the 2018 decision.

55 See Section 2.1.3 of the 2018 decision.


(84) According to settled case-law\(^{58}\) and the implementing procedural regulation\(^{59}\) the notification requirement only applies to substantial alterations. Modifications of a purely formal or administrative nature, which cannot affect the evaluation of the compatibility of the aid measure with the common market, do not amount to substantial alterations.

(85) For the reasons explained in Sections 4.4.1 to 4.4.6 below, the compatibility assessment carried out in the 2018 decision is partially affected by the notified amendments. Therefore, the amended capacity mechanism is subject to the notification requirement.

### 4.2 Existence of aid

(86) The Commission already concluded in the 2018 decision that the Italian capacity mechanism constitutes State aid within the meaning of Article 107(1) TFUE\(^{60}\). The notified amendments do not alter the elements taken into consideration in the 2018 decision to reach that conclusion.

(87) As already explained in the 2018 decision\(^{61}\), the TSO's proposal for a capacity mechanism will be approved by a Decree of the Ministry for Economic Development on the basis of the modified ARERA decision No 98/2011. The amended capacity mechanism remains imputable to the State because the notified amendments will be adopted by the Minister for Economic Development by Decree, as explained in recital (26)(a) above.

(88) The notified amendments do not concern the financing mechanism consisting in a charge imposed by ARERA (a State body) based on objective criteria detailed out in Decision ARG/elt 98/11 (see recital (27) above). The charge must be classified as a levy as it is imposed on dispatching users per energy withdrawal point (retailers, shippers and large customers), which are obliged to pay it. Therefore, the capacity mechanism as amended continue to be financed through State resources.

(89) The notified amendments do not impact the type of economic advantage granted to capacity providers who are successful in the auction which consists in a premium expressed in EUR per MW of capacity offered. As already explained in the 2018 decision\(^{62}\), those providers would not have received the stable and predictable remuneration they receive through the capacity mechanisms, had they continued to operate in the electricity market on normal economic conditions selling electricity and ancillary

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\(^{58}\) See, for instance, the judgement of the Court of 13.12.2008 in Case C-492/17, Südwestrundfunk, ECLI:EU:C:2018:1019, paragraphs 55-57.


\(^{60}\) See recital 123 of the 2018 decision.

\(^{61}\) See recital 114 of the 2018 decision.

\(^{62}\) See recitals 118 and 119 of the 2018 decision.
services only. The advantage continues to be selective because it only applies to certain economic operators, namely those capacity providers eligible to take part in the auction. The introduction of the CO₂ emission limits exclude an additional category of operators compared to those eligible under the scheme as approved in 2018, namely those operators that do not meet the CO₂ emission standards.

(90) Finally, as already explained in the 2018 decision\(^{62}\), the premium granted to selected beneficiaries risks distorting competition and affecting trade within the internal energy market. The liberalised Italian electricity market is open and connected to the internal electricity market. The creation of a separate revenue stream for capacity and the assurance of a certain amount of capacity investment in the market are expected to influence electricity prices, for example reducing them or at least reducing price volatility, compared to an energy only market. This could affect the prices and profitability of local capacity and of capacity connected to Italy.

(91) Therefore, the notified amendments do not affect the conclusion that the Italian capacity mechanism as amended constitutes State aid within the meaning of Article 107(1) TFEU, since it is imputable to the State, involves State resources\(^{64}\), confers a selective advantage on its beneficiaries, and has the potential to distort competition and affect trade between Member States.

4.3 Lawfulness

(92) Italy notified the amendments prior to their implementation and therefore observed the obligation provided in Article 108(3) TFUE.

4.4 Compatibility of the amended capacity mechanism

(93) Article 107(1) TFEU lays down the principle that State aid which distorts or threatens to distort competition, in so far as it affects trade between Member States, is prohibited. In certain cases, however, State aid may be compatible with the internal market under Articles 107(2) and (3) TFEU.

(94) On the basis of Article 107(3)(c) TFEU, the Commission may consider State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

(95) Section 1.2 EEAG contains a list of the types of aid measures for energy and environment that may be considered compatible with the internal market under Article 107(3)(c) TFEU. The list includes measures to ensure generation adequacy and security of electricity supply. Section 3.9 of the EEAG lays down the compatibility criteria for such measures.

\(^{63}\) See Section 3.1.3 of the 2018 decision.

\(^{64}\) See Judgement of the Court of 17.07.2008 in Case C-206/06, Essent Netwerk Noord BV, ECLI:EU:C:2008:413, paragraphs 45, 47 and 66 and Judgement of the Court of 15.05.2019 in Case C-706/17, Achema, ECLI:EU:C:2019:407, paragraph 71.
The 2018 decision concluded that the Italian capacity mechanism complies with Section 3.9 of the EEAG and with Articles 30 and 110 TFEU. That assessment is only partially affected by the notified amendments for the reasons explained in Sections 4.4.1 to 4.4.6.

### 4.4.1 Objective of common interest

As stated in paragraph (30) of the EEAG, the primary objective of aid in the energy sector is to ensure a competitive, sustainable and secure energy system in a well-functioning Union energy market. Paragraphs (219) to (221) of the EEAG define more specific criteria on how Member States should define the common interest objective for measures in the field of generation adequacy.

The capacity mechanism as approved in 2018 aimed at ensuring security of supply by providing investment incentives to all capacity providers. This could have included payments to conventional generation based on fossil fuels such as coal and oil.

With the introduction of the CO\textsubscript{2} emission limits, the mechanism aims at attaining the required level of security of electricity supply while providing the investment signals to promote more environment-friendly capacity, in line with the new electricity regulation. Therefore, the notified amendments partially modify the common interest objective of the capacity mechanism.

Paragraphs (219) and (221) of the EEAG provide that measures for generation adequacy can be aimed to address both short term flexibility concerns and long term concerns about the ability to meet a generation adequacy target. They underline the need to clearly define the objective at which the measure is aimed, including when and where the adequacy problems are expected to arise. They also require the conclusions of the generation adequacy assessment to be in line with the analysis carried out periodically by ENTSO-E. Paragraph (220) of the EEAG explains that aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies and that alternative ways for achieving generation adequacy without these negative environmental impacts should be considered primarily.

As explained in recitals (8) above, the Italian TSO assessed generation adequacy against a LOLE standard, which can be regarded as the generation adequacy target referred to in paragraph (219) of the EEAG. The assessment carried out by TSO has shown that generation adequacy issues will arise as of 2020 absent a capacity mechanism and will differ across zones. The generation adequacy situation has not substantially changed since the TSO carried out its assessment. This was confirmed by the 2018 ENTSO-E adequacy assessment (see Section 2.2.1 above).

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65 See recital 208 of the 2018 decision

66 See recital 133 of the 2018 decision.
Moreover, in parallel to the introduction of the capacity mechanism, Italy is undertaking the market reforms described in recital (9) above.

The notified amendments do not impact any of the elements mentioned in recitals (101) and (102) above. Based on those elements, the 2018 decision already concluded that the capacity mechanism pursues an objective of common interest\(^\text{67}\). Therefore, those conclusions remain unchanged and remain valid for the amended capacity mechanism. Accordingly, the present decision refers to the relevant conclusions in Section 3.3.1 of the 2018 decision.

The notified amendments will strengthen the common interest objective as defined in paragraph (220) of the EEAG, since they will prevent the granting of subsidies to the most environmentally harmful capacity\(^\text{68}\). Moreover, the CO\(_2\) emission limits are in line the objectives pursued by the EU legislators in the new electricity regulation (see recitals (28), (29), and (30) above).

On this basis, it can be concluded that the amended capacity mechanism contributes to a well-defined objective of common interest.

### 4.4.2 Necessity of the capacity mechanism

The notified amendments do not concern the necessity of the aid as assessed in the 2018 decision.\(^\text{69}\) Moreover, Italy has reaffirmed that the Italian electricity system continues to face decreasing levels of generation adequacy because of the market failures referred to in recital (7) above and illustrated in detailed in Section 2.1.2 of the 2018 decision. Italy also confirmed that it is undertaking the market reforms referred to in recital (9) above and described in Section 2.1.3 of the 2018 decision in order to address those market failures. Furthermore, Italy refers to the results of the generation adequacy assessment referred to in recital (8) above and illustrated in Section 2.1.4 of the 2018 decision. Italy confirms that a similar methodology will be used to determine the amount of capacity to be procured in the capacity auctions and it will periodically reassess the necessity of the measure (see recital (12) above and recitals (51) and (146) of the 2018 decision). ENTSOE’s Mid-term Adequacy Forecast 2018 identified LOLE values higher than 3 hours in several Italian bidding zones in 2020 and 2025 (see recital (34) above). Finally, in its 2019 energy and climate plan, Italy has reiterated its intention to phase out coal-fired generation by 2025 (see recital (35) above).

Therefore, the finding of the 2018 decision that the aid is necessary remain unchanged and remain valid also for the amended capacity mechanism.

\(^{67}\) See, in particular, recitals 131, 134 and 137 of the 2018 decision.

\(^{68}\) It is however important to note that paragraph 220 of the EEAG do not exclude the possibility for Member States to subsidise all types of capacity that can contribute to security of supply if no alternative ways are possible (in particular facilitating demand side response, increasing interconnection capacity).

\(^{69}\) See Section 3.3.2 of the 2018 decision.
Accordingly, the present decision refers to the conclusions in Section 3.3.2 of the 2018 decision.

4.4.3 Appropriateness of the capacity mechanism

(108) As a general principle, a State aid measure is appropriate if it is designed in a way as to properly address the market failures identified. The EEAG further specify in paragraphs (225) and (226) that, in the context of aid for generation adequacy, this implies that the aid should remunerate solely the service of pure availability provided by the generator and that the measure should be open and provide adequate incentives to all capacity able to contribute to the attainment of the stated objective, both existing and future capacity, as well as all substitutable technologies, including demand response or storage solutions.

(109) The notified amendment do not alter most of the elements assessed in the 2018 in relation to the appropriateness of the measure\(^\text{70}\), namely:

a) the type of capacity mechanism chosen by Italy, namely a centralised reliability option scheme with zonal auctions (see recital (11) above);

b) the fact that that the scheme only remunerates the availability of capacity rather than the production of electricity (see recital (19) above);

c) the rules governing the participation of storage, demand-side response and the way foreign participation is organised\(^\text{71}\) (see recital (13) above).

(110) Moreover, the market failures identified by Italy persist and the on-going and planned market reforms are unlikely to address the identified adequacy concerns in the coming years. In sum, the generation adequacy situation has remained substantially unchanged compared to the one assessed in the 2018 decision (see recital (106) above). The amendments notified by Italy concerning the extension of the lead time for the first auctions and the modifications of the qualification requirements for new capacity (see recital (47) above) aim merely at incentivising the participation of new capacity in the mechanism. The EEAG and the 2018 decision stress the importance of including new capacity in the mechanism and allowing it to compete on equal footing with existing capacity. For this reason, they do not affect the evaluation of the compatibility of the capacity mechanism carried out in the 2018 decision and in particular in recital (165) thereof.

\(^{70}\) See Section 3.3.4 of the 2018 decision.

\(^{71}\) As assessed in recitals 164-168 of the 2018 decision. In principle, the CO\(_2\) emission limits also apply to foreign capacity. However, the rules governing the participation of foreign capacity will remain unchanged as compared to the scheme as approved in 2018 (see recitals 59 and 89 of the 2018 decision) until the introduction of cross-border balancing markets. Italy already committed to negotiate agreements with other relevant TSOs to enable the participation of foreign capacity at the same conditions as domestic capacity (see recital 59 of the 2018 decision). The negotiation will be conducted taking into account the conditions of the Electricity Balancing Guidelines and the timeline for their implementation (see recital 59 of the 2018 decision). Pending such agreements, the fact that the CO\(_2\) emission limits do not apply to foreign capacity is justified, since Italy does not have the means to verify whether foreign capacity complies with the CO\(_2\) emission limits.
(111) Therefore, the conclusions of the 2018 decision remain unaltered and remain valid for the amended capacity mechanism that:

(a) a market-wide mechanism is the most appropriate among the various options to address the identified adequacy concern;

(b) the design features referred to in recitals (109) and (110) above are in line with the EEAG requirements on appropriateness; and

(c) the capacity mechanism provide adequate incentives to new capacity.

(112) Accordingly, the present decision refers to the relevant conclusions in Section 3.3.4 of the 2018 decision.

(113) While the CO\textsubscript{2} emission limits do not apply to demand-response and storage capacity (which anyway have very low CO\textsubscript{2} emissions) they do restrict the eligibility requirements for generation capacity as compared to those assessed in the 2018 decision. The scheme as approved in 2018 was found appropriate, inter alia, because “all types of generators can participate in the mechanism, irrespective of the technology they use to generate electricity”\textsuperscript{72}, while the CO\textsubscript{2} emission limits will limit the participation of some technologies (coal-fired and oil-fired generation capacity) in the amended capacity mechanism (see recital (41) above).

(114) However, the introduction of the CO\textsubscript{2} emission limits is necessary in order for the mechanism to attain the common interest objective (see recital (104) above).

(115) Therefore, the capacity mechanism remains open to both existing and future generators, operators using substitutable technologies (e.g. demand-side response and storage) which can contribute to the objective of common interest.

(116) Furthermore, the exclusion of existing capacity with CO\textsubscript{2} emissions above the limits will also send appropriate market exist signals in the medium-term, in line with Italy’s plans to phase out coal-fired generation by 2025. This in turn, will increase the opportunities that new capacity (including generation, transmission, demand-response and storage capacity) is contracted in the capacity mechanism. Investments in new capacity will also be facilitated by the introduction of longer lead times and less stringent qualification requirements (see recitals (47) and (110) above).

(117) Therefore, the amended capacity mechanism provides even higher investments incentives to new capacity than the initial scheme as approved in 2018.

(118) Based on the foregoing considerations, the amended capacity mechanism is appropriate to address the security of supply risks identified by Italy while

\textsuperscript{72} See, in particular, recital 163 and 164 of the 2018 decision.
at the same time promoting investments only more environment-friendly capacity.

4.4.4 Incentive effect

(119) A State aid measure has an incentive effect if it changes the behaviour of the undertakings concerned in such a way that they engage in activities which they would not carry out without the aid or which they would carry out in a restricted or different manner. The EEAG has laid down more specific guidance as to the interpretation of this criterion in Section 3.2.4, namely that the measure should induce the beneficiary of the aid to change its behaviour to improve the functioning of a secure, affordable and sustainable energy market, a change in behaviour, which it would not undertake without the aid.

(120) The notified amendments do not concern the generation adequacy assessment. Hence, the finding of the 2018 decision remains valid that, in the absence of the capacity mechanism, market revenues would be insufficient to cover the costs of a significant share of capacity\textsuperscript{73}.

(121) Moreover, the notified amendments do not modify the payback obligation, which creates a financial incentive to be available at times of scarcity, or the sanctions applied to ensure compliance with that obligation. On the contrary, Italy has confirmed the penalties provided for in the measure as approved in 2018 continue to apply and clarified how they will apply to new capacity\textsuperscript{74}.

(122) For these reasons, the finding in the 2018 decision remain unchanged and remain valid for the amended capacity mechanism as to the incentive effect for new and existing capacities to be available at times of scarcity and thus contribute to security of supply objective. Accordingly, the present decision refers to the conclusions in Section 3.3.5 of the 2018 decision

(123) Moreover, without the CO\textsubscript{2} emission limits the capacity mechanism may incentivise also investments in less environmental friendly generation capacity\textsuperscript{75}.

(124) The amended capacity mechanism will thus have an incentive effect for new and existing capacities to be available at times of scarcity and promote investments in environmental friendly capacity.

4.4.5 Proportionality

(125) The aid amount is proportionate if it is limited to the minimum needed to achieve the objective pursued. The EEAG specifies this requirement for generation adequacy measures in paragraphs (228) to (231). Paragraphs

\textsuperscript{73} See recitals 171 and 173 of the 2018 decision.

\textsuperscript{74} See recitals 172 and 173 of the 2018 decision.

\textsuperscript{75} See recitals 133 and 134 of the 2018 decision.
(228) and (230) provide that beneficiaries should earn a rate of return that is reasonable and that windfall profits should be prevented. Paragraph (229) states that this can be ensured by a competitive bidding process based on clear, transparent and non-discriminatory rules. According to paragraph (231), the price paid for availability shall automatically tend to zero when the level of capacity supplied is expected to be adequate to the level of capacity demanded.

(126) The notified amendments do not concern the following elements that were taken into account in the 2018 decision in the context of the proportionality assessment:

(a) The way capacity providers are selected (transparent auction process based on clear rules available to all participants in advance of the auction)\(^{76}\);

(b) The design of the demand curve, which reflects the expected adequacy situation in each of the electricity market zones in the delivery period and ensures that the price automatically tends to zero for levels of capacity corresponding to a LOLE lower than the reliability target\(^{77}\);

(c) The rules that ensure that demand response, storage and foreign capacity can compete on an equal footing\(^{78}\);

(d) The measures to prevent plants that may have market power to exercise it and artificially raise the level of the premium (eligible capacity not offered in the auction is considered offered at zero, elastic demand curve that reduces the procurement volume in case of high prices, price caps, only one third of the capacity can be offered in each individual auction)\(^{79}\);

(e) The payback obligation, which minimises the risk that capacity providers earn windfall profits and market power rents from electricity scarcity prices on top of the capacity remuneration\(^{80}\);

(f) The duration of contracts awarded to new and existing capacity providers respectively\(^{81}\).

(127) Therefore, the conclusions of the 2018 decision on proportionality based on the elements listed in recital (126) above remain unchanged and remain valid for the amended capacity mechanism. Accordingly, the Commission refers to the relevant conclusions in Section 3.3.6 of the 2018 decision.

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\(^{76}\) See recital 175 of the 2018 decision.

\(^{77}\) See recitals 176 and 185 of the 2018 decision.

\(^{78}\) See recitals 161-164 and 176 of the 2018 decision.

\(^{79}\) See recitals 177-181 of the 2018 decision.

\(^{80}\) See recital 180 of the 2018 decision.

\(^{81}\) See recitals 182-184 of the 2018 decision.
However, the CO₂ emission limits reduce the amount of existing capacity that can participate in the auction, as shown in Table 1 above. It is therefore necessary to assess the impact of the notified amendments on the competitiveness of the auction and on the premium.

Table 1 and Table 2 above shows that the estimated demand for each zone under the mechanism is higher than the de-rated existing capacity that meets the CO₂ emission standards. However, it is important to recall in this regard the demand curve of the auction will reflect the expected adequacy situation in each of the electricity market zones in the delivery period based on the most recent available assessment (see recital (12) above).

Furthermore, in order to ensure that auctions remain competitive in spite of the modified eligibility criteria, the capacity that does not meet the CO₂ emission standards will be taken into consideration in the supply curve, as long as it operates on the electricity market, and considered as offered at zero price (see recital (14) above). In addition, as explained in recitals (110) and (116) the notified amendments incentivise the participation of new capacity on a technology-neutral basis.

It is also important to note that the demand curve is elastic. This ensures that the TSO procures lower amounts of capacity if prices are higher.

These features of the mechanism ensure that the auction remains competitive.

Finally, the elastic demand curve and the price caps (see recitals (12), (16), and (17) prevent the abuse of market power and minimise the risk of windfall profits.

Therefore, the remuneration received by the selected capacity providers under the amended capacity mechanism remains proportionate.

4.4.6 Avoidance of undue negative effects on competition and trade between Member States

Any potential negative effects of the capacity mechanism on competition and trade in the internal electricity market must be sufficiently limited, so that the overall balance of the measure is positive. The EEAG specifies this requirement in paragraphs (232) and (233).

The notified amendments do not concern the following elements that were taken into account in the 2018 decision in the context of the assessment of compliance with paragraphs 232 (b) and (233) (a), (b), (c), (e) of the EEAG:

(a) The fact that the measure is open to cross-border capacity;

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82 See recitals 179-184 of the 2018 decision.

83 See recital 188 of the 2018 decision.
(b) The beneficiaries' incentives to bid in the electricity and MSD ('Mercato per il Servizio di Dispacciamento') markets following the introduction of the measure (no obligation to bid at a given price, strike price set at the level of the generation technology with the highest variable costs);

(c) The setting of a strike price, which will not implicitly introduce a price cap for (load-following availability obligation; de-rating; voluntary participation in the mechanism);

(d) No interference with market coupling;

(e) The market-splitting mechanism used in the auction, which will reveal the respective value of capacity in the different areas, including the interconnected ones;

(f) The tie-break rule in favour of low-carbon generators.

Therefore, the notified amendments do not concern the elements taken into account in the 2018 decision to conclude that the measure is in line with paragraphs 232 (b) and 233 (d) and (a), (b), (c), (e) of the EEAG. Those findings remain unchanged and remain valid for the amended capacity mechanism. Accordingly, the Commission refers to the relevant conclusions in Section 3.3.7 of the 2018 decision.

Paragraph (232) (a) to (c) of the EEAG underlines the importance of ensuring competitive pressure in selecting the capacities through a sufficiently broad participation and wide eligibility criteria.

For the reasons explained in recitals (113), (114), and (115) above, the mechanism remains open to all capacity providers that can contribute to the common interest objective. Moreover, the auctions are expected to be sufficiently competitive in spite of the introduction of the CO₂ emission limits (see recital (132) above).

Furthermore, the EEAG already provide that limited competition distortions in favour of lower emission capacity can be justified. Paragraph (233) (e) prescribes that preference should be given to low-carbon generators in case of equivalent and economic parameters. The introduction of the CO₂ emission limits pursues the same rationale as this provision.

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84 See Section 2.1.1 of the 2018 decision for a detailed description of the Italian electricity market.

85 See recital 191 and 197 of the 2018 decision.

86 See recital 192-194 and 197 of the 2018 decision.

87 See recital 195 of the 2018 decision.

88 See recital 199 of the 2018 decision.

89 See recital 200 of the 2018 decision.
(141) With regard to the undue strengthening of market dominance (paragraph 233 (d) of the EEAG), the Commission found in the 2018 decision that the openness to new capacity and the availability of long term contracts for new capacity is expected to ensure that market dominance, where it exists, is not strengthened. As explained in recitals (110) and (116) above, the notified amendments will further incentivise investment in new capacity as compared to the scheme as approved in 2018.

(142) Figure 1 and Figure 2 below show that most of the capacity affected by the application of the CO₂ emission standards belongs to the market participants with the highest market shares. Therefore, preventing that capacity from participating in the market will not strengthen market dominance. On the contrary, it will open up opportunities for smaller market participants to participate in the mechanism and enter the market or consolidate their presence there. Therefore, the aid is line with paragraph (233) (d) of the EEAG

(143) Based on these considerations, the Commission is satisfied that the negative effects of the capacity mechanism on competition and trade in the internal electricity market continue to be sufficiently limited.

4.4.7 Transparency

(144) According to Section 3.2.7 EEAG, for individual aid awards of EUR500 000 or more, Member States must publish on a comprehensive State aid website the full text of the aid scheme and its implementing provisions (or a link to it), the identity of the granting authority, the identity of the individual beneficiaries, the form and amount of aid granted to each beneficiary, the date of the granting, the type of undertaking, the region in which the beneficiary is located and the principal economic sector in which the beneficiary has its activities.

(145) The Italian authorities have confirmed they will apply the transparency conditions laid down in Section 3.2.7 EEAG. Accordingly, the Commission refers to Section 3.3.8 of the 2018 decision.

4.4.8 Articles 30 and 110 TFEU

(146) The notified amendments do not change the financing of the scheme. Therefore, no restrictions have been added that would infringe Article 30 or Article 110 TFEU.

(147) In the light of the above, the conclusion of the 2018 decision remain unchanged and remain valid that the financing mechanism of the notified aid measure does not introduce any restrictions that would infringe Article 30 or Article 110 TFEU. Accordingly, the Commission refers to Section 3.3.9 of the 2018 decision.

90 See Section 3.3.8 of the 2018 decision.

91 See Section 3.3.9 of the 2018 decision.
4.4.9 Observations submitted by Italia Solare

(148) With regard to other observations put forward by Italia Solare’s the Commission observes the following:

Alleged lack of proper public consultation

(149) The EEAG do not contain requirements on public consultations. However, the Commission observes, in this regard, that the mechanism as approved in 2018 has been the subject of several public consultations (see recitals (67) to (70) above). Moreover, the introduction of the CO₂ emission limits have been made public and consulted upon in the context of the 2019 national energy and climate plan. In any case, those emission standards are in line with the ones that will soon be introduced by the electricity regulation.

Necessity and alternatives to the capacity mechanism

(150) The alleged obstacles to the development of renewables installations do not appear substantiated based on the information provided by Italy concerning the number of permits requests processed and the substantial increase in renewables capacity in the years 2008-2018 (see recital (72) above). Other alleged obstacles, such as the regulation on apartment buildings have been introduced to avoid the proliferation of costly electricity lines. Moreover, Italy will carry out a cost-benefit analysis of such regulation in the near future. The capacity-based tariffs aims at incentivising rather than disparaging self-consumption and renewables penetration, as they will incentivise the use of electricity as a primary source of energy.

(151) It is also important to note that renewables could already participate in the scheme as approved in 2018 and can continue to do so. Moreover, the introduction of the CO₂ emission limits will increase their participation for the reasons illustrated in recitals (110) and (116) above. The contribution of renewables and self-consumption to security of supply will be periodically reassessed in the generation adequacy assessment and in the design of the supply curve of the capacity auction (see recital (23) above). As regards the alleged negative impact of the capacity mechanism, and in particular the strike price on electricity prices, the Commission already found in the 2018 decision that the measure does not change the beneficiaries’ incentives to bid in the electricity and MSD markets\(^\text{92}\). First, the availability obligation merely consists in an obligation to bid in the electricity and balancing market, not an obligation to bid at a given price. Therefore, capacity providers will keep the incentive to provide electricity only when the market price is equal to at least their variable costs. It is noteworthy that Italy set the strike price at the level of the generation technology with the highest variable costs. This allows all technologies that participate in the mechanism and are subject to pay-back obligation to cover at least their variable costs through energy market revenues. As Italy correctly observes, those costs are much lower for renewables installations.

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\(^{92}\) See recital 191 of the 2018 decision and recital 136 of the present decision.
Moreover, setting a strike price will not distort the functioning of the electricity market by implicitly introducing a price cap for the reasons explained in recitals (192) to (195) of the 2018 decision.

In any event, as already concluded in the 2018 decision, renewables capacity and production are expected to substantially grow in the future. Such increase will be delivered mainly by PV solar generation, which is particularly variable and intensifies the need for reliable back-up capacity.

The amended capacity mechanism even increases the need for RES capacity participation. Thus is in the interest of Italia Solare.

For all these reasons, the capacity mechanism does not hinder the development of renewables, as alleged by Italia Solare. To the contrary, the investment in flexible capacity and transmission capacity, which the mechanism will incentivise, are crucial to complement the penetration of renewables in the electricity market.

Furthermore, in addition to the capacity mechanism, various projects are ongoing which are aimed at increasing the degree of active demand side response, at upgrading the domestic grid and at increasing interconnection capacity (see recital (9) above).

The reform of the ancillary services market, which aims at allowing the participation of demand-response, storage and renewables an increasing it over time, and the improvement of intra-day possibilities were already mentioned among the reforms Italy was undertaking to address the identified market failures in the 2018 decision (see recital (9) above). The Commission already concluded in that decision that those market reforms, together with the others Italy was undertaking, are not sufficient, as reiterated in recital (10) above. Moreover Italy will periodically reassess the necessity of the measure (see recital (23) above). The introduction of negative prices will be assessed in the context of the implementation of the Balancing Network Code.

**Design of the capacity mechanism**

The Commission already found in the 2018 decision and reiterates in recital (34) above that the generation adequacy situation differs quite substantially from one bidding zone to the other. As already explained in the 2018 decision, this justifies the use of a market splitting mechanism that is the most appropriate to send locational signals for investments.

As explained in the 2018 decision, de-rating factors for renewables are based on the historical availability of those installations. Italy has shown that in the 500 hours a year with the highest system load for the period

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93 See recital 134 of the 2018 decision.
94 See recitals 137 and 157 of the 2018 decision.
95 See recitals 145 and 157 of the 2018 decision.
2014-2018, the de-rating of PV installations was higher than 80% in 86% of the hours, while those of wind installations was higher than 80% in 77% of the hours. These data are consistent with the de-rating factors for renewables approved in the 2018 decision. Finally, the actual de-rating factors will be periodically updated and published at least 60 days before each auction (see recital (13) above).

Other observations

(160) On the opportunity to approve the capacity mechanism while the new electricity regulation was being negotiated, it is important to note that the regulation is without prejudice to the application of State aid rules, as also stated in recital 47 of the regulation. In any case, Italy will have to comply with the regulation when it becomes effective (which is not yet the case more than one year after the Commission issued its 2018 decision). This was also expressly stated in the 2018 decision, as recalled in recital (31) above.

(161) The request for access to FTI-CL Energy’s report is being dealt with separately, under Regulation 1049/2001.

4.4.10 Conclusion

(162) In the light of the above, the Commission finds that the capacity mechanism as amended is compatible with the internal market.

96 See recital 63 of the 2018 decision.
5 CONCLUSION

The Commission has accordingly decided:

- not to raise objections to the amended aid scheme on the grounds that it is compatible with the internal market pursuant to Article 107(3)(c) of the Treaty on the Functioning of the European Union.

- to authorise the amended aid scheme until 31st December 2028.

If this letter contains confidential information which should not be disclosed to third parties, please inform the Commission within fifteen working days of the date of receipt. If the Commission does not receive a reasoned request by that deadline, you will be deemed to agree to the disclosure to third parties and to the publication of the full text of the letter in the authentic language on the Internet site: http://ec.europa.eu/competition/elojade/isef/index.cfm.

Your request should be sent electronically to the following address:

European Commission,
Directorate-General Competition
State Aid Greffe
B-1049 Brussels
Stateaidgreffe@ec.europa.eu

Yours faithfully,

For the Commission

Margrethe VESTAGER
Member of the Commission