



Brussels, 7.2.2018
C(2018) 617 final

<p>In the published version of this decision, some information has been omitted, pursuant to articles 24 and 25 of Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty, concerning non-disclosure of information covered by professional secrecy. The omissions are shown thus [...].</p>		<p>PUBLIC VERSION</p> <p>This document is made available for information purposes only.</p>
--	--	---

Subject: State Aid SA.42011 (2017/N) – Italy – Italian Capacity Mechanism

Sir,

1. PROCEDURE

- (1) Following pre-notification contacts, the Italian authorities notified to the Commission on 24 August 2017, in accordance with Article 108(3) of the Treaty on the Functioning of the European Union (TFEU), a measure to support capacity providers in the electricity market in Italy ('the measure').
- (2) Italy provided additional information on 19 October, 10 November, 23 November, 7, 12, 20, and 21 December 2017, and 17, 19 and 26 January 2018.

2. DESCRIPTION OF THE MEASURE

2.1. Context and background

2.1.1. The electricity market in Italy

- (3) In Italy, market participants can trade electricity in several timeframes (i.e. the Forward Electricity Market (*Mercato Elettrico a Termine*, 'MTE'), the Day-Ahead Market (*Mercato del Giorno Prima*, 'MGP'), the Intra-Day Market (*Mercato Infragiornaliero*, 'MI')), and can offer ancillary services in the Balancing Market (*Mercato per il Servizio di Dispacciamento*, 'MSD'), which consists of two parts,

Onorevole Angelino Alfano
Ministro degli Affari esteri e della Cooperazione Internazionale
P.le della Farnesina 1
I - 00194 Roma

namely a planning phase (the 'ex-ante *MSD*') and the Balancing Market (*Mercato di Bilanciamento*, '*MB*')¹. The ex-ante *MSD* and *MB* take place in multiple parallel sessions. In particular, Terna, the national Transmission System Operator ('TSO'), obtains in the *MSD* the capacity required for managing and monitoring the system (e.g. relief of intra-zonal congestions, creation of energy reserve, real-time balancing). In the *MSD*, accepted offers are remunerated at the price offered (pay-as-bid) following a competitive procedure.

- (4) The Italian wholesale market is operated by Gestore Mercati Energetici (GME), a company wholly owned by the Ministry of Economy and Finance, established by law in 1999. GME operates the *MTE*, *MGP* and *MI*. The *MSD*, including the *MB*, is operated by GME and the TSO.
- (5) The Italian transmission network is characterised by significant and recurrent grid constraints. As a consequence, the Italian electricity grid is divided into six geographical zones, namely Central-Northern Italy, Central-Southern Italy, Northern Italy, Sardinia, Sicily, and Southern Italy. These zones are defined for system security purposes, as there are physical limits to transfers of electricity to/from other geographical zones. The six zones are used in the electricity market as bidding zones (see Figure 1 below).

Figure 1: Bidding zones of the Italian power market



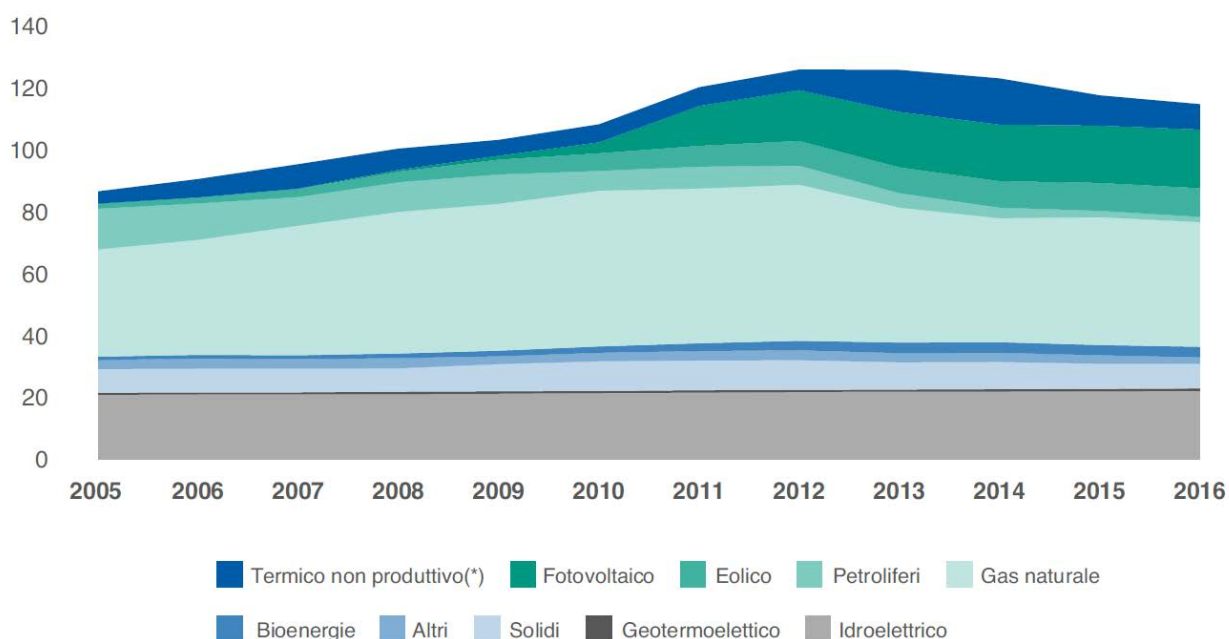
- (6) The Italian authorities have explained that the average price in Northern Italy and Sicily was systematically higher than in other zones in 2015-2016. In contrast, electricity in the Southern part of Italy is substantially cheaper.
- (7) Total installed capacity was 117 GW in 2016. In the same year, hydroelectric, wind and photovoltaic ('PV') installations accounted for around 44 % of the

¹ For a detailed description of those markets see: <https://www.mercatoelettrico.org/En/Mercati/MercatoElettrico/MPE.aspx>.

installed capacity and electricity from renewable sources covered 33,2 % of the electricity demand².

- (8) Thermal generation capacity in Italy is currently 62 GW. Between 2012 and the end of January 2017, the total amount of installed conventional power plants fell from 77 GW down to the current level. Moreover, Italy submits that 6 GW of the current thermal generation capacity are already mothballed or in the decommissioning process, as declared by the generators to the TSO.
- (9) Figure 2 below provides an overview of the evolution of the installed capacity by technology from 2005 to 2016.

Figure 2: total installed capacity by technology 2005-2016



Source: Terna³

- (10) Going forward, Italy is planning to completely phase out coal-fired power plants by 2025 and set a target of 55 % of electricity demand covered by renewable sources by 2030⁴.
- (11) Italy is interconnected with France, Switzerland, Austria, Slovenia, Greece and Malta. Both the islands of Sicily and Sardinia are connected to the mainland via submarine cables. According to the information provided by the Italian authorities, interconnection capacity for imports to Italy amounts to 8.9 GW, mainly from Switzerland and France, but also Austria, Slovenia and Greece. More precisely, import capacity for 2016 varied from 6.8 GW in summer off-peak hours to 8.9 GW in winter peak hours.⁵ In the same year, imports covered 11.8 %

² The TSO - Analisi dei dati elettrici 2016, available at: <http://download.terna.it/terna/0000/0994/85.PDF>.

³ The TSO - Analisi dei dati elettrici 2016, available at: <http://download.terna.it/terna/0000/0994/85.PDF>.

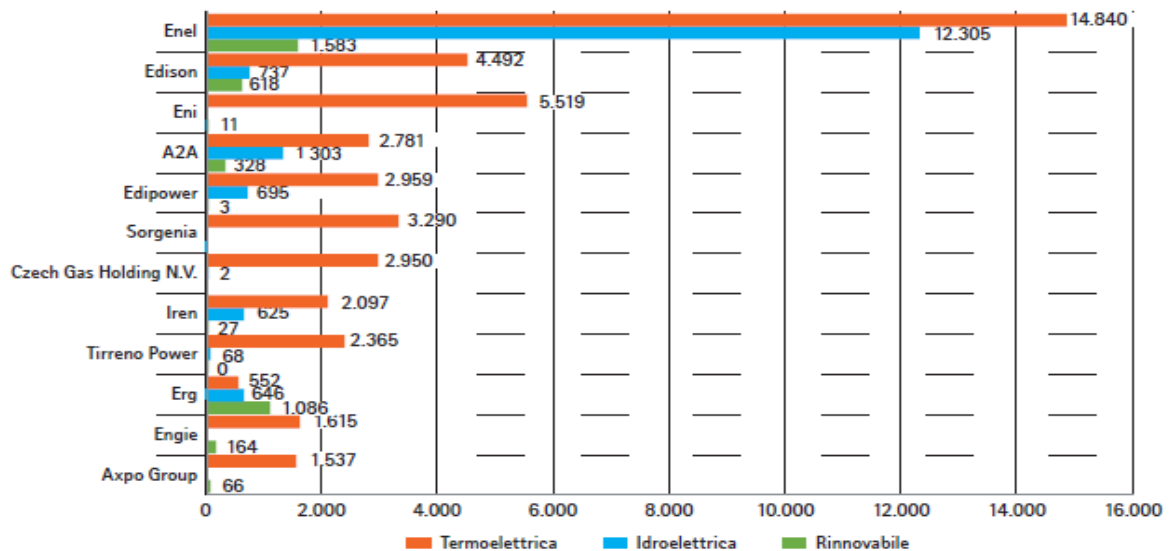
⁴ Strategia Energetica Nazionale 2017, available at: http://www.sviluppoeconomico.gov.it/images/stories/documenti/testo_della_StrategiaEnergeticaNazionale_2017.pdf

⁵ See <http://www.the.TSO.it/en-gb/sistemaelettrico/importexport.aspx>.

of the electricity demand⁶. Italy is a net importer with 43.2 TWh of electricity imported and 6.2 TWh of electricity exported in 2016⁷.

- (12) The level of concentration in the Italian market is relatively low on the generation side compared to the situations observed in most other EU Member States. However, as shown in Figure 3, the historical operators ENEL, ENI and Edison still operate most of the thermal and hydroelectric capacity.

Figure 3: Installed capacity in MW available at least 50 % of the hours in 2015 for the main groups



Source: Autorità per l'energia elettrica, il gas e il sistema idrico⁸

2.1.2. Reasons for a decreasing levels of generation adequacy

- (13) Italy invokes several market failures being the reason for a decreasing level of generation adequacy.
- (14) Firstly, Italy argues that reliability is a public good since, under the current technology development, consumers in Italy cannot be selectively disconnected from the grid on the basis of their willingness to pay for adequacy during stress events. In the absence of regulatory intervention, the market would not be able to autonomously provide for the optimal level of adequacy.
- (15) The second market failure brought forward by Italy is that energy-only markets are unable to promote a coordinated development of generation and transmission capacity due to the information asymmetry among the various players of the electricity sector (i.e. TSO and capacity providers). This market failure exacerbates the boom and bust cycle affecting investments in the electricity

⁶ The TSO - Analisi dei dati elettrici 2016, available at: <http://download.terna.it/terna/0000/0994/85.PDF>.

⁷ The TSO - Analisi dei dati elettrici 2016, available at: <http://download.terna.it/terna/0000/0994/85.PDF>.

⁸ Autorità per l'energia elettrica il gas e il sistema idrico, Annual Report 2016, Volume 1, available at: https://www.autorita.energia.it/allegati/relaz_ann/16/RAVolumeI_2016.pdf.

industry, which is triggered by the time lag between the scarcity or excess price signals coming from the energy-only market and the response of investors in new generation capacity. Moreover, the lack of coordination between investments in generation and transmission risks to concentrate investments in generation in areas where they are not necessarily needed most at the expense of other areas where they would be necessary (e.g. due to the network constraints).

- (16) The third market failure mentioned by Italy is the 'missing money' problem. The concept has been identified and described by the Commission in its Sector Inquiry on capacity mechanisms⁹. The problem arises when the electricity wholesale markets are not expected to generate incentives to sufficiently invest to guarantee adequate generation capacity. In this scenario, the market proves unable to incentivise investment in adequate generation capacity because investors fear future revenues will not cover their fixed costs and will not appropriately remunerate their investment. This fear is exacerbated in a market characterised by a growing penetration of renewables, which have low marginal operating costs. This causes conventional power plants to operate during even fewer hours and makes it even more difficult for them to recover investment costs, also because of the lack of sufficiently high prices during periods of scarcity. Italy also submits that energy production from intermittent energy sources has strongly increased over the last 10 years and will further increase in the medium-long term. RES production has covered 33.2 % of the Italian electric demand in 2016 and this percentage is expected to increase up to 55 % in 2030¹⁰.

2.1.3. Market reforms to improve generation adequacy

- (17) In addition to the capacity mechanism covered by this decision, Italy is undertaking a range of market reforms to address the market failures described above. The main initiatives are listed below.
- (18) Implementation of market coupling. The market coupling combines the allocation of cross-border capacity at the day-ahead timeframe with the trading of electricity ('implicit' allocation), in order to ensure its efficiency. Market coupling between day-ahead markets has been implemented between Italy and Slovenia since 2011. On 24 February 2015, day-ahead market coupling was extended to France and Austria. At present, Italy takes part in the multi-regional coupling which comprises 19 European countries.
- (19) Intraday trading possibilities are improving. The possibility of intraday trading in Italy was introduced in 2011, with the implementation of four auction sessions within the Italian market, extended to five in 2014. Italy is considering moving to seven intraday sessions. In addition, GME is participating in the procurement of the new platform for European intraday trading, through the so-called XBID project. The purpose of the XBID project is to enable continuous cross-zonal trading and increase the overall efficiency of intraday trading on the single cross-zonal intraday market across Europe. The Italian TSO, together with the other TSOs operating on the Italian borders, has involved relevant power exchanges in order to launch a dedicated project (IBWT).

⁹ Commission staff working document accompanying the document Report from the Commission, Final report of the Sector Inquiry on Capacity mechanisms, COM(2016) 752 final, p.28

¹⁰ See Section 2.1.1 above.

- (20) Ongoing reform of the balancing market. In June 2016, the national regulator (*Autorità per l'energia elettrica il gas e il sistema idrico* or 'AEEGSI') published a consultation document to reform the balancing service market. The AEEGSI was concerned that, in recent years, operators were taking advantage of arbitrage opportunities by withdrawing more energy than needed on the day-ahead market and reselling it the next day in the balancing market at higher prices. The AEEGSI sought to prevent such arbitrage by introducing price discrimination above a certain threshold of volume provided for balancing, and therefore limiting arbitrage opportunities. When the reform is completed, imbalance prices should reflect the actual value of electricity at time of delivery, so that market operators will receive the right incentives, and both short term and long term efficiency should be maximized.
- (21) Reinforcement of demand-side response participation. In June 2016, the AEEGSI launched a consultation process in order to improve the participation of different types of capacity in *MSD*, including demand-side response. A two-year transitory period of the process began in June 2017. Italy is also implementing a new generation of smart meters that is expected to improve the development of demand-side response.
- (22) Ongoing storage projects. In addition to storage capacity that exists already as pumped hydro storage, Terna Storage and other companies are investing in new storage technologies.¹¹
- (23) Upgrade of the transmission network to alleviate internal congestions¹².
- (24) Increased interconnections. The 2016 development plan foresees EUR 6.6 billion investments over the next decade. If all the projects currently in the pipeline are executed, Italy should meet the 15 % objective of interconnection capacity by 2030. Two cross-border interconnector projects, which are part of the Projects of Common Interest (PCI) list, are currently under construction and are expected to be commissioned in 2019:
- Between Italy and France - 'Piosasco-Grand'Ile'. The interconnection capacity will be increased by 60 % (+1.2 GW).
 - Between Italy and Montenegro - 'Villanova-Lastva' (at least 1 GW), which is expected to bring greater security on the system, especially for central Italy.
- (25) In total, eleven interconnection projects are part of the European Network of Transmission System Operators for Electricity ('ENTSO-E') Ten Year Network Development Plan (TYNPD). They are summarised in Table 1 below.

¹¹ In particular, the TSO Storage has two macro-projects named "Energy Intensive" and "Power intensive", which envisage (i) the construction of three storage facilities in Southern Italy for a total capacity of 34.8 MW, and (ii) the installation of storage systems in Sardinia and Sicily for a total capacity of 40 MW, respectively.

¹² E.g. the "Sorgente-Rizziconi" power line between Sicily and South Italy, the "Villanova-Gissi" line in Abruzzo, an additional transmission capacity of 500 MW for each cross-zonal connection with the constrained zones Foggia, Brindisi and Priolo, and an additional capacity of 700 MW for interconnection with Rossano.

Table 1: Interconnection projects with Italy in the ENTSO-E 2016 TYNDP

Project name	Status	Additional capacity (MW)	Expected commissioning year	Cost (M€)
• Italy-France (Savoie - Piémont)	Under construction	1200	2019	1300±65
• Italy-Montenegro	Under construction	1200	2019	1246±65
• Italy-Tunisia (TuNur)	Permitting	1000	2020	2700 ±200
• Italy-Tunisia (ITA-7)	Planning	600	2021	600±90
• Italy-Switzerland (Greenconnector)	Design & Permitting	800-1200	2021	600±60
• Italy-Switzerland (Magenta substation)	Design & Permitting	1000-1100	2022	995±100
• Italy-Slovenia (ITA-6)	Design & Permitting	1000	2022	870
• Italy-Switzerland (ITA-4)	Design & Permitting	600	2022	995±100
• Sardinia-Corsica (SACOI3)	Design	NA	2023	650 ±65
• Italy-Austria	Planning	1100	2024	715±100
• Spain-France-Italy: Abengoa Southern Europe Interconnection	Under consideration	1000	2025	2600

- (26) However, according to the Italian authorities, 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 capacity because of their technical characteristics and because their implementation is often obstructed by local communities and thus riskier and lengthier than the building of new generation capacity.
- (27) Therefore, Italy is of the view that it is necessary to complement the reforms with a central buyer capacity mechanism, where reliability options would be traded in auctions organised by the TSO. In Italy's view such mechanism would solve the residual missing money problem by ensuring stable revenues to capacity providers and promote a coordinated development of investment in transmission and generation capacity. Grid upgrades and new interconnectors will be modelled in the auction's demand curve (see recital (47) below), thus giving clearer signals as to whether and where investments in the various types of capacity are needed or not.
- (28) In any case, Italy will periodically assess the effects of market reforms on security of supply and has committed, as further explained in recital (80), to monitor annually the functioning of the capacity market with a view to re-assess its necessity and modify the measure if need be.

2.1.4. Generation adequacy assessment

- (29) The TSO assessed the adequacy level of the Italian system against a Loss of Load Expectation ('LOLE') standard and an Energy Not Supplied ('ENS') standard.

- (30) 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 its analysis, the TSO used a LOLE of 3 hours/year.
- (31) The ENS is an estimation of the energy not supplied to final customers. In Terna's analysis it was set at 10-5, in accordance with ENTSO-E's standard.
- (32) The TSO used an iterative modelling approach involving two steps:
- First, the TSO performed a resource **adequacy assessment** for the years 2017, 2020 and 2025. Its objective was to compute the LOLE and ENS for each of the Italian bidding zones under a number of decommissioning scenarios of thermal capacity and growth in power demand, renewable and transmission capacities. It is based on probabilistic Monte Carlo simulations¹³ capturing the impact of a number of uncertain variables affecting power demand and supply in the future (i.e. climate factors affecting demand, wind and solar generation profiles, hydro conditions, generator outages, changes in transmission capacity which are all relevant to estimate the evolution of power demand and supply in the future). Assumptions and methodologies used by the TSO in its adequacy assessment model are essentially the same as the ones used in the ENTSO-E's Mid-term Adequacy Forecast (MAF). In addition, the TSO introduces several methodological refinements that are different from the pan-European MAF analysis in order to reflect national specificities, such as decommissioning assumptions and a detailed representation of available transmission capacity. Moreover, the TSO's assumptions regarding reserves and demand growth are less conservative than ENTSO-E's.
 - Second, the TSO ran a **market model** which simulates the expected revenues of thermal plants under different decommissioning scenarios¹⁴. This revenues simulation verifies the economic sustainability of capacity necessary to achieve security of supply targets under the different scenarios.
- (33) The assessment performed by the TSO related to 2017, 2020 and 2025 concluded that the existing capacity will not be able to meet LOLE and ENS targets in the next five to ten years (see Table 2 below).

Table 2: Main results of the simulations^{15*}

¹³ Monte Carlo Simulation is a mathematical technique that generates random variables for modelling risk or uncertainty of a certain system. The random variables or inputs are modelled on the basis of probability distributions such as normal, log normal, etc. Different iterations or simulations are run for generating paths and the outcome is arrived at by using suitable numerical computations. Monte Carlo Simulation is the most tenable method used when a model has uncertain parameters or a dynamic complex system needs to be analysed. It is a probabilistic method for modelling risk in a system. Compared to deterministic analysis, the Monte Carlo method provides a superior simulation of risk. It gives an idea of not only what outcome to expect but also the probability of occurrence of that outcome.

¹⁴ Ranging from 6 GW closures in the moderate decommissioning scenario to 12 GW closures in the extreme decommissioning scenario. The Base case assumes 10 GW closures.

¹⁵ [...] * Table 2 footnote 15 and recital (34) have been redacted since they contain confidential information.

	2017			2020			2025		
	LOLE	ENS	Profitability	LOLE	ENS	Profitability	LOLE	ENS	Profitability
No closures									
MD -6GW									
BD -10GW									
ED -12GW									

Source: Italian Power System Adequacy Report 2016

- (34) [...]*
- (35) The ENTSO-E report on MAF, 2017 Edition¹⁶ confirmed that mothballing trend has already created a scarcity situation that could become critical in case of extreme weather conditions and that in 2025 security of supply would be at risk even in the base scenario (no closure).
- (36) The assumptions, scenarios and modelling of this assessment have moreover been audited by an independent expert (FTI-CL Energy). The auditor confirmed the robustness of the TSO's analysis and its consistency with ENTSO-E's data.
- (37) The TSO will revise the adequacy assessment every year and publish the results of the assessment.

2.2. Legal basis

- (38) Legislative Decree nNo 379/2003 provides that the AEEGSI should define the criteria and conditions on the basis of which the 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 AEEGSI. Moreover, Article 1, paragraph 153 of law No 147/2013 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. Following the AEEGSI Decision ARG/elt/98/11 of 21 July 2011, the TSO's proposal of 20 September 2013 TE/P20130004704 was approved by the Minister's decree of 30 June 2014. Following the act of the Ministry (*atto di indirizzo*) of 25 October 2016, the TSO has revised the proposal and a new Ministerial Decree will replace the Decree of 30 June 2014.

2.3. Objective of the measure

- (39) The notified measure is intended to respond to the objective of maintaining security of supply, by (i) developing or maintaining sufficient capacity, while (ii) taking into account network constraints and providing locational signals for investments.
- (40) The measure is intended to address residual market failures that still remain after the implementation of a series of market reforms aiming to address market and regulatory failures (see paragraph 2.1.3 above), and contribute to maintaining adequacy.

¹⁶ Mid-Term Adequacy Forecast – 2017 Edition, available at: https://www.entsoe.eu/Documents/SDC%20documents/MAF/MAF_2017_report_for_consultation.pdf.

2.4. Overview of the measure

- (41) The notified capacity mechanism is a volume based and market wide mechanism where reliability options ('ROs') will be traded in central auctions managed by the TSO, aimed at procuring the level of capacity required to ensure generation adequacy.
- (42) The mechanism is volume based since the TSO will determine the amount of capacity needed to ensure the required level of security of supply and it is market-wide since the TSO will procure that amount from all potential capacity providers.
- (43) The TSO will determine the amount of capacity to be auctioned. Providers that offer capacity in the auction and are selected will receive fix regular payments ('premium') equal to the clearing auction price, aiming to ensure an additional source of revenues to compensate for insufficient earnings from the electricity market.
- (44) In return for this regular payment, the capacity providers will be required to: (i) offer electricity in the *MGP* and the *MSD* for each hour of the delivery period and (ii) pay the difference between a market reference price and a pre-determined strike price whenever the reference price exceeds the strike price (the so-called 'payback obligation')¹⁷.
- (45) 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 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 load¹⁸.
- (46) The TSO is not entitled to use the proceeds of the charge for purposes other than the financing of the scheme.

2.5. Determining the capacity requirement: the demand curve

- (47) The amount of capacity to be procured by the TSO is based on the target security of supply indicator (the loss of load expectation or 'LOLE'), the implicit value that consumers place on additional security of supply (the value of lost load or 'VOLL') and the cost of new entry ('CONE').
- (48) The CONE corresponds to the estimated fixed costs that a new peak generation unit, that is the production technology characterized by the lowest fixed costs and the highest variable costs, would have to bear to enter the market. According to a study carried out by the TSO and taking into account the results of the AEEGSI's consultations on this issue, the peak technology is currently a gas-fired open cycle

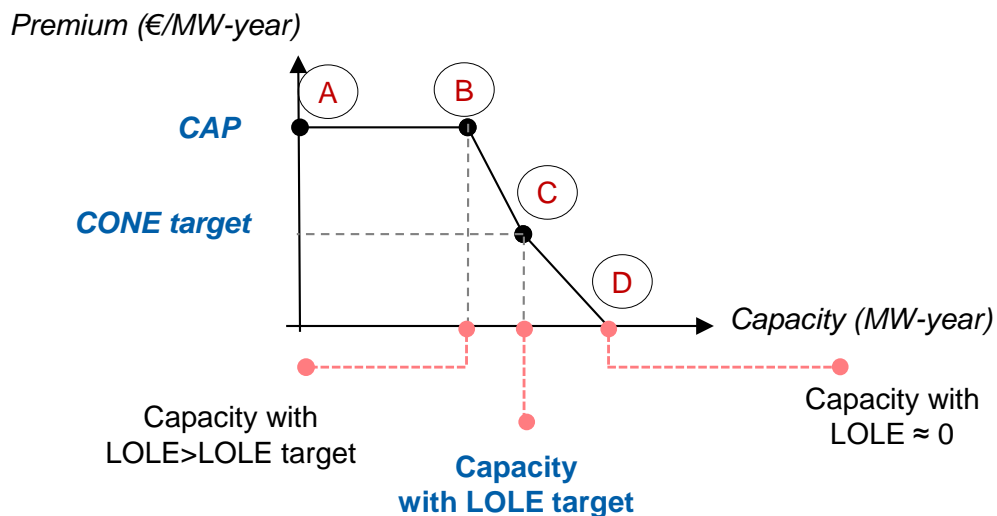
¹⁷ A different regime applies to demand response providers. It is described in Section 2.8.3

¹⁸ See Article 14 AEEGSI decision ARG/elt/98/11.

turbine ('OCGT') with a capacity between 50 and 150 MW¹⁹. The TSO study has shown that a high level of uncertainty surrounds the estimate of the CONE, mainly due to the specific features of the plant location, the assumptions about the rate of return, and the general uncertainty to estimate the costs of a hypothetical project²⁰. Based on the results of a market consultation on the CONE, Italy has therefore estimated a cost range rather than a single CONE value²¹.

- (49) Italy has calculated the implicit VOLL and compared it with the costs of additional security of supply, i.e. the CONE. This methodology aims to ensure that the amount of capacity auctioned reflects consumers' willingness to pay for security of supply.
- (50) Based on that comparison, Italy will set the target LOLE at approximately 3 hours/year²². A stricter standard, i.e. a lower LOLE value, would mean an increased level of security of supply, but would also imply that a higher amount of capacity needs to be procured and would thus entail additional costs.
- (51) The TSO will design a demand curve which estimates the necessary likely available capacity (*Capacità Disponibile in Probabilità* or 'CDP') to be procured to meet the LOLE. The necessary CDP is defined by the TSO using a methodology similar to the one of the generation adequacy assessment (see recital (32), first bullet point above)²³.
- (52) The curve is based on four points, as illustrated Figure 4 below.

Figure 4: Conceptual illustration of the capacity demand curve



Source: Italian authorities

¹⁹ See the AEEGSI consultation document 592/2017/R/EEL available at: <https://www.autorita.energia.it/allegati/docs/17/592-17.pdf>. The peak technology used to determine the CONE could also change in the future.

²⁰ See paragraphs 3.7 – 3.14 of the AEEGSI consultation document 592/2017/R/EEL.

²¹ See footnote 24.

²² The exact value will be determined by a Ministerial Decree

²³ See <http://download.terna.it/terna/0000/0892/54.PDF>.

- (53) The horizontal axis represents different levels of capacity corresponding to different LOLE values. The vertical axis represents the system's willingness to pay for each adequacy level.
- (54) Therefore, the four points of the curve represent the following parameters:
- (a) Point A: the intersection of the maximum premium (the auction cap – see recitals (69) below) based on the higher value of the CONE with a capacity amount equal to zero;
 - (b) Point D: the intersection of a premium equal to zero and a LOLE approximately at zero;
 - (c) Point C: the intersection of a LOLE corresponding to the adequacy target and a premium based on the lower value of the CONE; it is the point of the curve that guarantees that the target LOLE (the reliability standard or target capacity) is met²⁴.
 - (d) Point B: the intersection of the capacity amount that guarantees an LOLE higher than the reliability standard and the auction cap²⁵.
- (55) As stated in recital (5) above, the Italian electrical system is divided in six different zones and the generation adequacy assessment showed different levels of reliability for each zone (see recital (34) above). Therefore, it is necessary to determine a demand curve for each zone.
- (56) Before the main auction, the TSO will publish the demand curve for each bidding zone and the related studies.

2.6. The qualification process: eligibility and de-rating

- (57) Participation in the capacity mechanism is voluntary. Existing and new capacity providers, including storage assets and demand response operators, who can provide proof of existing or new capacity located on national territory are admitted to the capacity market, as long as:

²⁴ The central point of the demand curve or Point C is the intersection of the adequacy target and a premium equal to the lower limit of the CONE, and will be set in the range of EUR 50 000/MW/year and EUR 70 000/MW/year for the first auction. The value of the maximum premium used to determine the top of the demand curve (namely Point A and Point B, is based on the upper limit of the CONE, and will be set in the range of EUR 75 000/MW/year and 95 000/MW/year for the first auction. As of the second auction, the value associated with point C can be lowered (without pre-set floor) or increased to at most 1.2 times EUR 70 000/MW/year. Also as of the second auction, the values associated with points A and B can be lowered (without pre-set floor) or increased to at most 1.2 times EUR 95 000/MW/year. In the reference case described in the AEEGSI consultation document 592/2017/R/EEL, Italy considered a pre-tax rate of return on invest ('IRR') of 7.7 %. Italy has explained that such IRR is lower than the one observed in Italy in 2017, since it already takes into account the fact that long-term contracts are available under the proposed capacity mechanism. Moreover, Italy submits that the risk associated to investments in new capacity can vary greatly (see recital (48)) across projects.

²⁵ Designing the demand curve based on the CONE is necessary to ensure that the adequacy target is met in case new capacity is needed. This is because the strike price (see recital (87) below) has been defined with reference to the peak technology and market revenues will thus cover merely its variable costs.

- (a) they are not subject to dismantling measures approved by the competent authorities;
 - (b) they have the necessary building permit and have provided a detailed timetable indicating the main milestones of plant construction and the expected date in which the new plants will be in operation (if new generators);
 - (c) they have provided specific guarantees;
 - (d) they meet specific minimum asset requirements;
 - (e) they commit to relinquish other subsidies for the amount of capacity that will be contracted in the mechanism during the delivery period;
 - (f) demand response must meet the qualification requirements for the *MSD*.²⁶
- (58) The definition of new capacity includes not only capacity that has never participated in the *MGP* but also installation under refurbishment. 'Refurbishment' is defined in great detail in the capacity mechanism rules as to cover only major refurbishment projects.

²⁶ The Italian authorities explained that it consists in the ability of demand response to offer ancillary services to the TSO. This choice is justified by the fact that, under this condition, the TSO would be in a position to oversee the real-time performance of the demand response and give dispatching orders so that also demand response can contribute to the system adequacy on an equal footing with generators. This mechanism would improve demand response reliability with respect to its potential contribution to the system adequacy. Italy has confirmed that this condition can be met also by demand-response aggregators.

- (59) As regards foreign capacity, Italy submits that the participation of foreign resources in the mechanism at the same conditions as the Italian ones would require cross-border balancing markets. Only in that case, foreign capacity could react to real-time cross-border price signals. For this reason, Italy commits to negotiate agreements with other relevant TSOs to enable the participation of foreign capacity at the same conditions as domestic capacity. The negotiation will be conducted taking into account the conditions of the Electricity Balancing Guidelines²⁷ and the timeline for their implementation. Pending such agreements, foreign capacity will be able to participate directly in the capacity mechanism as of the first auction with delivery in 2019. However, its obligations will be slightly different than those imposed on domestic capacity (see recital (89)).
- (60) The participants may offer capacity on the basis of their CDP. CDP is assessed ex-ante taking into account some parameters representing the units' unavailability rates (i.e. de-rating). The de-rating factors will be calculated before each auction on the basis of historical data.
- (61) For thermoelectric units, the availability is assessed for each unit on the basis of fault probability, environmental constraints and authorisation, technical or legal constraints. Expected average de-rating factors go from ~10% to 15 % for geothermal installations to ~20% to 25 % for thermal generation.
- (62) For hydroelectric and pumping units, the assessment is based on their technical characteristics and the historical availability in peak days over the previous five years. Expected de-rating factors range from 40 % to 60 %.
- (63) For RES, the assessment is per category and it takes into account their lower contribution to system adequacy. The CDP is calculated as the 50th percentile of the historical contribution (i.e. the median value) during the peak hours over the previous five years. For instance, the expected average de-rating factor is ~85% to 90 % for wind installations and ~90% to 95 % for solar installations.
- (64) For demand response, besides calculating the CDP, the TSO will take into consideration the fact that demand response will be subject to more limited availability obligations than generation technologies (see Section 2.8.3 below) and multiply the CDP by a coefficient between 0 and 1, where 1 corresponds to the full delivery period. The mechanism allows for portfolio management until the delivery year.
- (65) Foreign resources shall present a declaration as to their maximum available capacity.

2.7. The auctioning process and secondary market

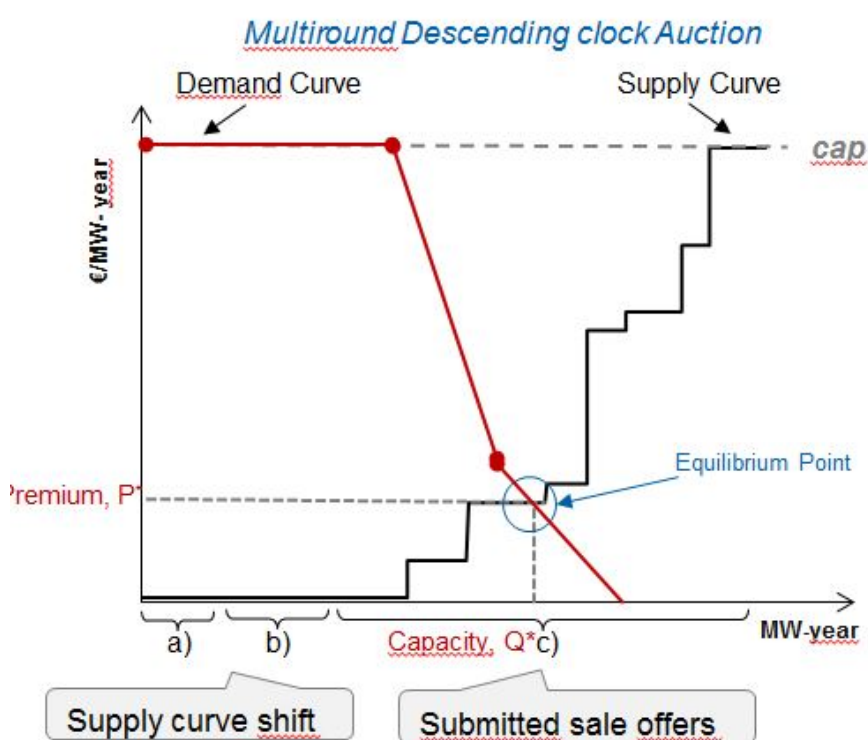
- (66) The TSO will carry out descending clock auctions with a maximum of 21 rounds. During the first round of the auction, each participant submits a bid consisting of a premium (EUR/MW/year) and an amount of capacity (MW/year). The capacity

²⁷ The draft Regulation establishing a guideline on electricity balancing was adopted on 23 November 2017. The Balancing guideline will set down rules on the operation of balancing markets. The objectives of the guideline include increasing the opportunities for cross-border trading and the efficiency of balancing markets. The text is available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R2195&from=EN>.

offered in the first round (MW/year) cannot be modified in the future rounds. In contrast, as of the second round, participants can reduce the premium.

- (67) 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. The same is true for foreign capacity until the auctions for delivery year 2019. As of then, foreign capacity will bid directly in the auction.
- (68) Since the bids submitted by demand response providers relate to a subset of the delivery period (see recital (97) below) the capacity offered is multiplied by the coefficient mentioned in recital (63) above and the premium offered is divided by the same coefficient.
- (69) The supply curve is obtained by the auction offers presented in an ascending order. The amount of capacity to be contracted and the premium awarded to successful bidders will result from the intersection between the demand and the supply curve. The premium is the clearing price of the auction on the basis of the marginal price principle (pay-as-clear)²⁸.

Figure 5: Multi-round Descending Clock Auction



Source: Italian authorities

N.B. The supply curve shift takes into account ineligible capacity²⁹

- (70) The Italian authorities will set auction price caps. Their purpose is to protect consumers from unforeseen problems with the auction, such as a lack of competition or abuse of market power by participants.

²⁸ See recital (77) above as regards price caps in the First Implementation Phase.

²⁹ This includes imports and subsidised capacity.

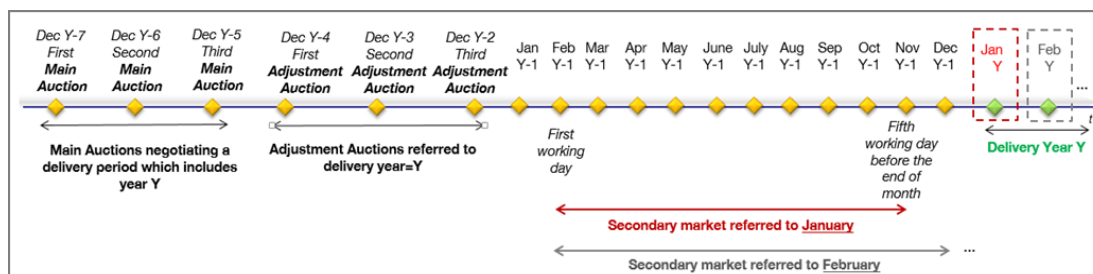
- (71) The price cap for offers submitted by existing capacity will be set in the range from EUR 25 000/MW/year to EUR 45 000/MW/year. It will be calculated by the Italian authorities, with reference to the annual fixed operating costs of combined cycle gas-fired plants (excluding depreciation costs)³⁰.
- (72) The price cap for new capacity will be set in the range from EUR 75 000/MW/year to EUR 95 000/MW/year. It will be calculated by the Italian authorities with reference to the upper value of the CONE (see recital (46))³¹.
- (73) In case of equivalent financial offers, priority is given to flexible capacity, meaning capacity with a low start up time, which can stay in and out of service for short time and increase production quickly. Detailed criteria are defined by the TSO. Italy has inserted this rule because flexible capacity is the most suitable to overcome the challenges the TSO has been facing in the last years in terms of system management. These difficulties arise due to the high penetration of renewables, especially solar PV installations. Italy has explained that the so called 'net load curve' representing the difference between total load and generation from renewables is completely changing in shape, with higher volatility and rapid load decrease in the morning when sun starts shining followed by a sharper load increase in the evening when the sun sets.
- (74) Moreover, in case of equivalent financial offers submitted by equally flexible capacity, preference will be given to low-carbon capacity.
- (75) The capacity market auction is a market splitting mechanism where participants submit offers for the areas where they are located and where capacity located in one area can contribute to the adequacy of other areas according to transmission limits between areas. The auction algorithm will then accept offers with the objective of minimising the costs to achieve the projected 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.
- (76) 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 and all capacity providers will 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.
- (77) Every product will be traded in a main auction followed by adjustment auctions and trading on the secondary market. Adjustment auctions aim at enabling capacity owners to renegotiate capacity obligations, allowing the TSO to adjust the amount of capacity to be procured as the delivery period approaches and enlarging participation in the mechanism since these auctions are open also to

³⁰ 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.

³¹ Starting from the second auction, based, for instance, on the information gained in previous auctions, the price cap applied to new capacity can be revised provided that either the new value is lower than EUR 75 000/MW/year or it does not exceed the upper limit of the abovementioned range (EUR 95 000/MW/year) multiplied by 1.2.

providers offering new capacity or demand response provider who did not participate in previous auctions. Trading in the secondary market aims at introducing additional flexibility by allowing capacity providers to renegotiate their position after the last adjustment auction and up to one month before the start of the delivery period.

Figure 6: Sequencing of auctions and trading on the secondary market



Source: Italian authorities

- (78) Italy will implement the mechanism in two phases: a First Implementation Phase and a Full Implementation Phase. The lead time for the Full Implementation Phase is four years. This means that the delivery period under the Full Implementation Phase will start only four years after Italy starts to implement the mechanism. In the period which goes from the entry into force of the mechanism until the first delivery year of the Full Implementation Phase, Italy will hold auctions with shorter lead times and delivery periods. Those auctions fall under the First Implementation Phase, which thus aims at phasing in the capacity mechanism and bridging the gap between the first auction and the first delivery year of the Full Implementation Phase. In the first years of the implementation of the mechanism, the two phases will therefore run in parallel. The features of the two phases are described in more details in recitals (79) and (80) and the sequencing of the auctions is illustrated in Figure 7 below.

2.7.1. Auctions in the First Implementation Phase

- (79) The auctioning process during the First Implementation Phase can be described as follows:
- (a) The main auction has a lead time going from a few months to 3 years and a delivery period of 1 year for the existing capacity and 15 years for new capacity. New capacity (as defined in recital (57) above) will receive, upon their request, 15-year contracts only if (i) it constitutes new capacity or heavily refurbished generation capacity and (ii) the investment costs are not lower than 40 % of the average investment costs in the peak technology referred to in recital (48) expressed in EUR/MW³². The methodology used by Italy to set the investment threshold is in line with the one used in the Irish capacity mechanism³³.

³² These investment costs have been estimated in the range of EUR 465 000/MW and EUR 580 000/MW.

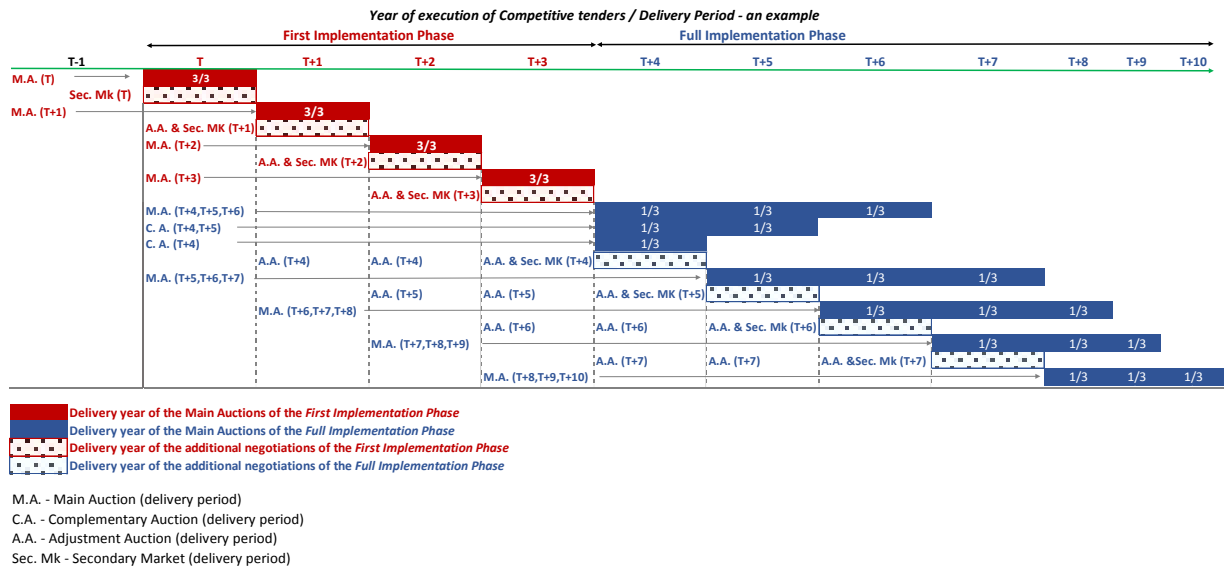
³³ Commission Decisions SA.44464 and SA.44465: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44464, and http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44465.

- (b) In the main auctions with a lead period shorter than three years and in the related adjustment auctions, the cap for existing capacity will be applied as a pure cap, meaning that existing capacity will not receive a higher premium even if the auction clears at a higher price because new capacity is accepted. Italy considers that given the length of the lead time, it is highly improbable that new capacity could actually be built and thus exert competitive pressure on the existing one. Therefore, 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.
- (c) 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 higher than the cap is accepted. Otherwise, the premium will be capped at the cap for existing capacity (see recital (70) above).

2.7.2. *Auctions in the Full Implementation Phase*

- (80) The auctioning process during the Full Implementation Phase can be described as follows:
 - (a) The main auction has a lead time of four years (T-4 auction) with a delivery period of 3 years for the existing capacity and 15 years for new capacity. The design of the mechanism supposes that each annual main auction only satisfies one third of the expected capacity demand. Therefore, existing capacity providers can only offer up to one third of their capacity for each main auction and each delivery year is negotiated in three main auctions. New capacity providers can qualify the whole of their capacity in one main auction. If they are selected, the capacity contracted is subtracted from the demand curve for the duration of the contract.
 - (b) Adjustment auctions are typically organised in years T-3, T-2, and T-1 for the award of contracts with one year delivery period. At least 1 % of the expected capacity demand shall be reserved for the adjustment auction organised one year before the one-year delivery period. That percentage will be assessed every year in order to accurately evaluate the effective participation of demand response operators. The capacity contracted in the main auctions shall be adjusted accordingly.
 - (c) The price caps for new and existing capacity mentioned in recitals (71) and (72) above apply. Existing capacity will receive a premium higher than the cap only if new capacity is contracted.
- (81) The auctioning process shall be organised in a 'cascading system' illustrated in Figure 7 below.

Figure 7: The cascading system of capacity auctions



Source: Italian authorities

(82) After each auction the TSO will send to the Ministry for Economic Development and the AEEGSI a detailed report on the results of that auction. The TSO also monitors the network improvements and the state of play of the existing and new capacity and informs the Ministry and the AEEGSI every trimester. In addition, the TSO develops two annual reports on the mechanism, one for the Ministry and the AEEGSI, and the other for publication.

2.7.3. The secondary market

(83) Trading on the secondary market is managed by the TSO and over-the-counter contracts are currently not foreseen.

(84) It takes place after the last adjustment auction and up to one month before the start of the delivery obligation. It is based on continuous trading taking place on a weekly basis. It has the following characteristics:

- (a) lead time less than a year;
- (b) delivery period equal to 1 month;
- (c) only within the respective bidding zones.

(85) The functioning is similar to the one of electricity exchanges, namely:

- (a) Bidding process: offers submitted by each participant shall be distinguished between sell and buy offers and between new and existing capacity; in addition they shall specify location and month of delivery.
- (b) Trading mechanism: offers are collected in a trading book where sell offers are ordered according to a non-decreasing premium and buy offers are ordered according to a non-increasing premium. Offers with opposite direction are then automatically matched subject to the compliance of the required premiums.

- (86) Under the current rules, the secondary market is only aimed at allowing capacity providers to re-trade the products acquired in the previous auctions.

2.8. The operating phase: the implementation of the reliability option contracts

2.8.1. The payback obligation

- (87) During the delivery period, capacity providers that are successful in the auction are under the obligation to pay to the TSO an amount equal to the difference between the reference price and a pre-determined strike price, whenever the reference price exceeds the strike price.
- (88) The reference price is defined as a function of the price of MGP and the MSD.
- (89) Table 3 below provides an overview of how the reference price is set:

Table 3: reference price

Contracted capacity		Reference Price	
		Offered Price <= Strike Price	Offered Price > Strike Price
- Accepted in the Energy market		DAM price	
- Offered but not accepted in the Energy Market or not offered in the Energy Market and offered and <u>accepted</u> in ASM		Maximum (DAM price in the relevant delivery zone; strike price)	Maximum (DAM price in the relevant delivery zone; the offered price in ASM)
- Offered but not accepted in the Energy Market or not offered in the Energy Market and offered but <u>NOT accepted</u> in ASM			Maximum (DAM price in the relevant delivery zone; the price of the last offer accepted in ASM in the balancing macrozone that includes the relevant delivery zone)
- Offered but not accepted in the Energy Market and not offered in ASM or not offered neither in the Energy market nor in ASM		Adequate system	Maximum (DAM price in the relevant delivery zone; the price of the last offer accepted in ASM in the balancing macrozone that includes the relevant delivery zone)
		Scarcity event	The maximum price of the spot market

Source: Italian authorities

- (90) With respect to the strike price, it will be set at the level of the standard hourly variable cost of the technology with the highest variable costs (i.e. peak technology)³⁴. Italy has calculated that in June 2017 the standard variable costs of an OCGT amounted to EUR 125/MWh.
- (91) The obligation imposed on foreign capacity providers is limited to pay the TSO the difference between the *MGP* price of the interconnected Italian bidding zone and the strike price. The reference price for foreign providers is the *MGP* price in the interconnected area, rather than a combination of the *MGP* and *MSD* price (see recital (86)) given that market-coupling is not applied to *MSD* for the time being. However, Italy commits to negotiate cooperation agreements with other relevant TSOs ensuring the same obligations to foreign capacity providers that participate in the Italian capacity mechanism (see recital (58)).
- (92) The methodology to determine the strike price is published before each main auction. Whenever the methodology is modified due to a change in the peak technology, the new methodology only applies as of the first delivery year which

³⁴ See recital (48) and footnote 25.

has not been negotiated in previous capacity auctions. This avoids the application of different methodologies for the definition of the strike price to the same delivery period.

- (93) A further important feature of the reliability option concerns the so-called load following obligation. If demand can be met by a portion of the contracted capacity, the payback obligation will be also proportionally reduced *ex post*.
- (94) 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. At the same time, the payback obligation also represents a penalty for the providers failing to offer the contracted capacity in the reference markets since they will have to pay to the TSO an amount corresponding to reference price minus strike price even though they have not received the reference price.

2.8.2. *Other penalties*

- (95) In addition, the TSO will take different measures against the capacity provider in case of temporary and definitive non-fulfilment of the obligations:
 - (a) **Temporary non-fulfilment** occurs when the capacity provider is not able to provide a certain share (80 % in the current version of the regulation) of the contracted capacity in a given month over a number of hours at least equal to a given percentage (25 % in the current version of the regulation) of the total number of hours in that month. In such a case, Terna shall suspend the payment of the capacity premium for the months in which the non-fulfilment takes place.
 - (b) **Definitive non-fulfilment** occurs when the temporary one lasts for a given number of months (3 in the current version of the regulation or less if the contract is shorter than this number). In this case, the capacity provider shall reimburse the capacity premiums already received for each month included between the first and the third month of non-fulfilment. Terna will also reallocate the correspondent contracted capacity in the adjustment auctions or in the secondary market.

2.8.3. *Rules applicable to demand response providers*

- (96) The rules applicable to demand response providers differ from those for other capacity providers. This is due to the specific features of demand response whose role is two-fold. Demand side providers are, at the same time, adequacy providers and adequacy consumers. Italy notes that, under the proposed measure, contracted demand response providers attend to their own capacity needs. In practice, a demand response provider represents a consumer that implicitly asks the TSO not to procure production capacity to satisfy its adequacy needs.
- (97) If the general rules were applicable to demand response, it would:
 - (a) receive the auction premium by the TSO;
 - (b) payback to the TSO the difference between the reference price and the strike price ('scarcity rent');

- (c) pay the system charge to the TSO; and
 - (d) receive the scarcity rent from the TSO.
- (98) Italy has provided detailed calculation showing that the financial flows to/from the TSO are expected to balance out each other in the case of demand response. Therefore, to avoid unnecessary transaction costs and simplify the functioning of the system, Italy will introduce simpler equivalent rules for the financial flows to/from demand response units, which in case of being selected in the auction will:
- (a) not receive the auction premium;
 - (b) not be subject to the payback obligation;
 - (c) be exempted from the financing of the system; and
 - (d) not receive the scarcity rent.
- (99) Moreover, the obligation imposed on demand response is more limited than the one imposed on other capacity providers. In particular, bids submitted by demand response providers in the ancillary services market will be selected for a lower number of hours than those submitted by other capacity providers. The exact amount of hours for which demand response providers can be selected will be determined by Ministerial Decree.
- (100) The penalties for temporary and definitive non fulfilment of the availability obligation by demand response are the same as the ones described in Section 2.8.2 above, the only difference being that instead of suspending or revoking the payment of the premium, the TSO will revoke the benefits in term of exemption from the capacity fee.
- (101) In addition, the obligation imposed on demand response is backed with the possibility for the TSO to automatically disconnect the contracted demand if it does not follow the order issued by the TSO in the balancing market.
- (102) Finally, a demand response provider can be excluded from the mechanism if the TSO does not manage to remotely disconnect it.

2.9. Beneficiaries

- (103) The beneficiaries of the measure are those capacity providers successful in the auction. They receive the premium in the amount of the clearing price of the auction.

2.10. Budget

- (104) The annual expenditure associated with the capacity mechanism will depend on the results of the auctions. It is not possible to determine the expenditure beforehand considering that (i) bidding in the auctions is voluntary, (ii) the procurement of capacity depends on demand curves and supply curves defined for each zone, and (iii) the payback by beneficiaries, i.e. any positive difference between market price and the strike price, will depend on the actual market prices during the delivery year. Therefore, the actual annual cost can only be known ex-post at the end of the delivery period.

- (105) For the first auctions the annual cost of premiums could vary between EUR 0.9 billion and EUR 1.4 billion. These values are based on the TSO's best estimates on the amount of capacity that will be procured and the price caps referred to in recital (71). At the same time, taking into account the aforementioned payback obligation and the reduction of scarcity events, the net cost of the capacity market for the first auctions will be lower.

2.11. Duration

- (106) The Italian Authorities have not set an end-date since the measure is a long term intervention intended to complement the energy-only markets. However, Italy committed that it will not apply the measure beyond 10 years unless it re-notifies the measure sufficiently in advance and the Commission has approved it.
- (107) 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.³⁵

2.12. Cumulation

- (108) The Italian authorities confirmed that any cumulation with other aid measures is excluded. In particular, if the generators are subject to any type of investment incentive scheme for the produced energy, they can choose to relinquish the incentive and participate in the capacity market, or keep the incentive and not participate in the capacity market.

3. ASSESSMENT

3.1. Existence of aid

- (109) Article 107(1) TFEU provides that *'save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market'*.
- (110) The qualification of a measure as State aid requires the following conditions to be met cumulatively: a) the measure must be financed through State resources; b) it must grant an advantage liable to favour certain undertakings or the production of certain goods; c) the measure must distort or threaten to distort competition and d) the measure must be liable to affect trade between Member States.
- (111) Italy does not object to the qualification of the measure as State aid within the meaning of Article 107(1) TFEU and has notified it for approval by the Commission. It puts forward that the measure complies with the conditions set

³⁵ An automatic review is performed directly by the TSO, in case of modifications that do not require legislative changes. Other modifications will require an ordinary review, following a public consultation on the TSO's proposal and the AEEGSI's positive opinion. The modifications must then be approved by the Ministry of Economic Development. Finally, urgent modifications aimed at ensuring its correct functioning can enter immediately into force and then be sent to the Ministry of Economic Development for approval, after receiving the AEEGSI's positive opinion. Without the Ministry's approval the rules become ineffective.

out in the Guidelines on State aid for environmental protection and energy 2014-2020 ('EEAG')³⁶.

3.1.1. Imputability and State resources

- (112) In order for a measure to be imputable to the State and financed from State resources, the Court of Justice has held that it is not necessary to establish that there has been a transfer of money from the State budget or from a public entity.³⁷ This has been confirmed in *Vent de Colère*³⁸, where the Court held that a mechanism, developed by the State, for offsetting in full the additional costs imposed on undertakings because of an obligation to purchase wind-generated electricity at a price higher than the market price, by passing on those costs to all final consumers of electricity in the national territory, constitutes an intervention through State resources. In other words, the Court considered that State resources were involved where funds for a measure were financed through compulsory contributions imposed by domestic legislation and managed or allocated in accordance with the provisions of that legislation.
- (113) Similarly, the General Court confirmed that the German renewables support scheme ('EEG') involved State resources even though the support for renewables did not come from the general budget of the State but from the EEG surcharge paid eventually by the final consumers without passing through the State budget and thus not involving any burden on the general budget.³⁹ The General Court considered that for State resources to be involved it is sufficient i) that the TSOs had been designated by the State to manage the system of aid for the production of EEG electricity and ii) that the obligation on the TSOs that additional payments be made to producers of electricity from renewable energy sources was compensated by means of the funds generated by the EEG surcharge, administered by the TSOs and allocated exclusively to finance the support and compensation schemes set up by the EEG 2012.
- (114) In the present case, the measure and the mechanism to finance the measure have been developed by the Italian authorities, since 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 AEEGSI decision No 98/2011. The measure is therefore imputable to Italy.
- (115) It also follows from the case-law referred to above, that the concept of 'intervention through State resources' is intended to cover not only advantages which are granted directly by the State but also *those granted through a public or*

³⁶ OJ C 200, 28.6.2014, p. 1.

³⁷ *Doux Elevage*, EU:C:2013:348, paragraph 34, *France v Commission*, EU:T:2012:496, paragraph 36; Judgment in *Bouygues Télécom v Commission*, C-399/10 P et C-401/10 P, EU:C:2013:175, paragraph 100; *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 19.

³⁸ *Vent de Colère*, EU:C:2013:851.

³⁹ Judgment in *Germany v Commission* ("EEG 2012"), Case T-47/15, ECLI:EU:T:2016:281, paragraphs 81-128.

private body appointed or established by that State to administer the aid.⁴⁰ In this sense, Article 107(1) TFEU covers all the financial means by which the public authorities may actually support undertakings, irrespective of whether or not those means are permanent assets of the public sector.⁴¹

- (116) In this case, the Commission notes that the charges for the financing of the measure are imposed by the AEEGSI on consumers (see Article 14 of the AEEGSI decision ARG/elt/98/11) and are transferred to the TSO, an undertaking which has been given by the State the task of collecting those charges, is not entitled to use the proceeds from the charge for purposes other than those provided for by the AEEGSI decision (see recital (38)), and it is strictly monitored in carrying out its task (see footnote 35 above). The resources are thus under State control and qualify as State resources.

3.1.2. Economic advantage conferred on certain undertakings or the production of certain goods (selective advantage)

- (117) An advantage, within the meaning of Article 107(1) TFEU, is any economic benefit which an undertaking would not have obtained under normal market conditions, i.e. in the absence of State intervention.
- (118) The capacity providers who are successful in the auction would not have received the remuneration they receive through the capacity mechanisms, had they continued to operate in the electricity market on normal economic conditions selling electricity and ancillary services only.
- (119) The measure is also selective because it only applies to certain economic operators, namely those capacity providers eligible to take part in the auction.
- (120) Therefore, the measure confers a selective advantage on its beneficiaries.

3.1.3. Distortion of competition and effect on intra-EU trade

- (121) The notified measure 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. Electricity is traded within the internal energy market and market functioning ensures that power is generated where it costs least and transmitted via interconnectors to be consumed where demand is highest. Creating a separate revenue stream for capacity and ensuring a certain amount of capacity investment in the market is expected to influence electricity prices, for example reduce prices or at least reduce price volatility, compared to an energy only market. This could affect the prices and profitability of local capacity and of capacity connected to Italy.

⁴⁰ Judgment in *Steinike & Weinlig v Germany*, Case 76/78, EU:C:1977:52, paragraph 21; Judgment in *PreussenElektra*, C-379/98, EU:C:2001:160, paragraph 58; Judgment in *Doux Elevage and Cooperative agricole UKL-ARREE*, C-677/11, EU:C:2013:348, paragraph 26; Case *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 20; *Sloman Neptun*, joined cases C-72/91, C-73/91, EU:C:1993:97, paragraph 19.

⁴¹ Judgment in *Doux Elevage*, EU:C:2013:348, paragraph 34, Judgment of 27 September 2012, *France v Commission*, T-139/09, EU:T:2012:496, paragraph 36, *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 21.

- (122) Based on these considerations, the remuneration paid to the capacity providers in the Italian capacity mechanism has the potential to affect intra-Union trade and distort competition.

3.1.4. Conclusion on the assessment of existence of aid

- (123) In the light of the above assessment, the measure constitutes State aid within the meaning of Article 107(1) TFEU.

3.2. Lawfulness of the aid

- (124) By notifying the scheme before its implementation, the Italian authorities have fulfilled their obligation according to Article 108(3) TFEU.

3.3. Compatibility with the internal market

- (125) 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.

- (126) On the basis of Article 107(3)(c) TFEU, the Commission may consider compatible with the internal market 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.

- (127) 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.

- (128) To assess whether the capacity mechanism can be considered compatible with the internal market, the Commission assesses whether the design of the measure meets the following criteria listed in the EEAG⁴²:

- (a) contribution to a clearly defined objective of common interest (Section 3.3.1 below);
- (b) need for State intervention (Section 3.3.2 below);
- (c) appropriateness (Section 3.3.3 below);
- (d) incentive effect (Section 3.3.4 below);
- (e) proportionality (Section 3.3.5 below);
- (f) avoidance of undue negative effects on competition and trade (Section 3.3.6 below);
- (g) transparency of the aid (Section 3.3.7 below).

⁴² See in particular paragraph (27) and Sections 3.9.1 to 3.9.6 EEAG.

3.3.1. Objective of common interest

- (129) 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.
- (130) Paragraph (219) of the EEAG determines that measures for generation adequacy can be designed in a variety of ways and can be aimed to address both short term flexibility concerns and long term concerns about the ability to meet a generation adequacy target.
- (131) The notified measure is a market-wide capacity mechanism aimed at developing or maintaining capacity in order to ensure a certain reliability standard and send locational signals for investments. This standard can be regarded as the generation adequacy target referred to in paragraph (219) of the EEAG, because it indicates the degree of security of supply the Member States wants to achieve. The concerns expressed by Italy about meeting this standard are justified, based on the generation adequacy assessment, which concluded that absent a capacity mechanism shortfalls are expected to arise (see recital (34)) and that the degree of such shortfalls will differ in the various zones.
- (132) 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. It suggests that alternative ways could be the facilitation of demand side management and the increase of interconnection capacity.
- (133) The Commission considers that whilst the capacity mechanism is a technology neutral scheme open to all potential capacity providers and therefore may involve payments to all capacity providers, including conventional generation based on fossil fuels such as coal and oil, the measure is necessary to maintain security of supply. As described in Section 2.1.4, the necessity assessment carried out by the TSO has convincingly demonstrated that the reliability standard will not be met if capacity providers have to rely on energy market revenues only.
- (134) Moreover, the capacity mechanism has to be regarded in the context of a set of measures to manage the energy transition towards a decarbonised electricity system in Italy (see Section 2.1.3) while at the same time ensuring security of supply. Security of supply entails the availability of a sufficient amount of flexible back-up capacity in case intermittent renewables do not produce. The electricity production from intermittent energy sources in Italy has increased substantially in the last years and that the trend is expected to continue in the medium and long term (see recital (10) above). Moreover, the main contribution to the increasing share of renewables will be delivered by PV solar generation (see recital (9) above), which is particularly variable and intensifies the need for reliable back-up generation. 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 Section 2.1.3 above).

- (135) However, these measures alone are not sufficient to overcome the identified market and regulatory failures and to ensure that the market will maintain sufficient capacity for the reasons illustrated in Section 2.1.2.
- (136) Paragraph (221) of the EEAG underlines amongst others the need to clearly define the objective at which the measure is aimed, including when and where the adequacy problems are expected to arise. It also requires the conclusions of the generation adequacy assessment to be in line with the analysis carried out periodically by ENTSO-E.
- (137) The Commission notes that the primary objective of the notified measure is to ensure the availability of a sufficient amount of electricity capacity in the Italian market to attain the targeted reliability standard, thus ensuring an efficient level of security of supply. The assessment carried out by TSO has shown that generation adequacy issues will arise as of 2020 absent a capacity mechanism (see Section 2.1.4 above) and will differ across zones. This is in line with the assessment carried out by ENTSO-E (see Section 2.1.4 above).
- (138) On this basis, it can be concluded that the capacity mechanism contributes to a well-defined objective of common interest.

3.3.2. Need for State intervention

- (139) As a general principle, in order to demonstrate the need for State intervention it needs to be established that a market failure exists that prevents market forces from achieving generation adequacy and thus risks undermining the objective of security of supply. Paragraphs (222) to (224) of the EEAG define more specific criteria of how Member States should demonstrate the need for State intervention.
- (140) Paragraph (222) of the EEAG requires a proper analysis and quantification of the generation adequacy problem, while paragraph (223) of the EEAG requires a demonstration of the reasons why the market cannot be expected to deliver adequate capacity.
- (141) In this case, the Italian TSO has carried out a probabilistic adequacy assessment (see Section 2.1.4 above), which was audited by an independent party.
- (142) The Italian TSO identified the main factors that determine the need for capacity and the resulting level of security of supply, including climate factors affecting demand, wind and solar generation profiles, hydro conditions, generator outages, changes in transmission capacity, which are all relevant to estimate the evolution of power demand and supply in the future. For each of these factors, the TSO used the best available historic data and models to estimate probabilistic forecasts. These estimated forecasts are used as inputs for probabilistic simulations of future levels of capacity adequacy and security of supply in the Italian system. This state-of-the-art methodology allows the TSO to identify the lack of sufficient capacity in each delivery period, for each zone of the Italian electricity system and for Italy as a whole, to attain efficient levels of security of supply (expressed in terms of LOLE and ENS).

- (143) The Commission notes that Italy has substantiated the existence of market failures (see Section 2.1.2 above). In particular, Italy has demonstrated that capacity is expected to suffer from a ‘missing money’ problem in case it would have to rely solely on electricity market revenues. This missing money problem is already materialising since the total amount of installed conventional power plants fell from 77 GW down to 62 GW (see recital (8) above) between 2012 and January 2017 and the moderate decommissioning scenario is based on the declarations of the producers to the TSO that 6 GW of the current Italian generation capacity are already mothballed or in the decommissioning process (see recital (8) above). Moreover, Italy has analysed whether, in the future, market revenues would be sufficient to reach the reliability standard under a number of decommissioning scenarios. The analysis shows that, even with decommissioning, thermal generation capacity does not operate in the market for a number of hours sufficient to cover its avoidable fixed costs. This would lead to excessive decommissioning and insufficient security of supply level already in 2020.
- (144) Moreover, the existing network constraints and the fact that generation capacity developed in areas where it was not needed while it is lacking where needed the most, show the inefficient lack of coordination between investments in generation and transmission capacity.
- (145) Paragraph (224) of the EEAG requires the Commission to take account of various assessments to be provided by the Member State, relating to the impact of variable generation, demand side participation, interconnection and any other element causing or exacerbating the generation adequacy problem. The Commission has taken account of and scrutinised the reports related to all four elements mentioned in paragraph (224) of the EEAG (see recital (131) above) that the authorities submitted in the context of the notification of the mechanism and that demonstrate the need to take additional measures to ensure security of supply. Of particular relevance in this context is the generation adequacy assessment, which takes into account the various elements set out in paragraph (224) of the EEAG. In view of this evidence of market failures, the Commission agrees that a capacity mechanism can be an effective instrument to reduce the uncertainty among investors about their returns and to send locational signals for investments.
- (146) The adequacy assessment covers the period until 2025. However, Italy will periodically reassess the effects of market reforms on security of supply and has committed to monitoring annually the functioning of the capacity mechanism with a view, inter alia, to reassess its necessity (see recital (28) above). In addition, the TSO will base the auction's demand curve on the latest available data on generation adequacy (see recital (55) above). Moreover, the methodology used to design the demand curve is such as to ensure that the auction premium tends to zero in case the adequacy target is met.
- (147) For these reasons, the Commission takes the view that the mechanism is necessary for the notified duration.

3.3.3. Appropriateness of the aid

- (148) 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 specifies 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.

- (149) This Section assesses first whether the market-wide mechanism is the most appropriate among the various options to address the identified adequacy concern (Section 3.3.4 of this decision). It then analyses whether the specific design of the capacity mechanism is in line with the specific EEAG requirements on appropriateness (Section 3.3.4.1 and 3.3.4.2 of this decision).

3.3.4. Appropriateness of the capacity mechanism as instrument

- (150) Generation adequacy concerns should first and foremost be addressed by reforming the electricity market so as to provide the incentives for capacity providers to become or remain active on the energy-only market and deliver security of supply at lowest possible costs.
- (151) Italy is undertaking a series of market reforms, i.e. improving intra-day trading possibilities both at national and regional level, reforming the balancing market and developing an active demand response. Moreover, investments are planned to increase domestic and cross-border transmission capacity.
- (152) While the market reforms Italy has set out (see Section 2.1.3 above) contribute to ensuring that the market unfolds as much as possible its potential to deliver increased degree of security of supply, these measures alone are not sufficient to overcome the identified market failures in the short- to medium-term and to ensure that the market will maintain sufficient capacity for the reasons illustrated in recital (26) above.
- (153) In addition, the adequacy assessment carried out by the TSO indicates that in the coming years the planned investments will not be sufficient to fully ensure that the reliability target established by the Italian authorities is met (see recitals (30) to (34) above).
- (154) In this context, a capacity mechanism can be an effective instrument to address the generation adequacy problems.
- (155) The Commission in its Sector Inquiry on capacity mechanisms has identified various types of capacity mechanisms⁴³ and assessed which of them is more appropriate to address different generation adequacy problems⁴⁴. It concluded that a central buyer mechanism has the potential to solve a general shortage of capacity efficiently, if properly designed. Moreover, it found that a mechanism based on reliability options creates certainty about future returns for generators by ensuring them a fixed payment in exchange for uncertain scarcity rents. Furthermore, the reliability option feature of the mechanism has the advantage of leaving price signals in the market intact. This is because the pricing incentives of its beneficiaries remain undistorted, in particular given that the capacity

⁴³ See Section 3.1 of the Commission staff working document accompanying the document Report from the Commission, Final report of the Sector Inquiry on Capacity mechanisms, COM(2016) 752 final

⁴⁴ See Section 6.2 of the Commission staff working document accompanying the document Report from the Commission, Final report of the Sector Inquiry on Capacity mechanisms, COM(2016) 752 final.

mechanism includes a load following obligation and applies de-rating, which both have the effect of limiting the share of capacity that is subject to pay-back obligations at any point in time (see recitals (184)-(186)). Finally, holders of reliability options are subject to a pay-back obligation the amount of which is directly related to the market prices during the scarcity period. They will therefore have an incentive to sell their energy in the market and receive the scarcity price, to be able to honour their pay-back obligation ex-post.

- (156) Since Italy has demonstrated that it will face a general shortage of capacity, due to the inability of the market to send proper investment signals, the choice of market-wide capacity mechanism based on reliability options is appropriate.
- (157) The Sector Inquiry on capacity mechanisms⁴⁵ also underlined the importance of ensuring that a capacity mechanism sends locational signals for investments when market failures prevent investment in a particular region. Italy has demonstrated that market failures have prevented the coordinated development of investments in generation and transmission capacity. The zonal character of the auctions is appropriate to send signals for investments where they are needed the most.
- (158) In conclusion, the reformed market and the type of capacity mechanism chosen are expected to be complementary and mutually reinforcing, jointly contributing to achieve the stated objective of security of supply.

3.3.4.1. Remuneration of availability only

- (159) With regard to paragraph (225) of the EEAG, the main reason for the need for capacity mechanisms to remunerate availability only and not the actual electricity produced, is to limit distortions of the electricity wholesale price on the market.
- (160) The premium paid to capacity providers with a reliability option consists of a fixed payment for maintaining the contracted capacity available for the delivery period. It thus remunerates the availability of the capacity and does not include remuneration for the amount of electricity the capacity providers will offer on the market.
- (161) The aid therefore only compensates the service of availability of capacity.

3.3.4.2. Eligibility rules

- (162) Paragraph (226) of the EEAG determines that capacity mechanisms should be (i) open to different technologies, (ii) provide adequate incentives for both new and existing capacity, and (iii) take into account to what extent interconnectors can help remedy the generation adequacy problem identified.
- (163) As set out in Section 2.6 above, all types of generators can participate in the mechanism, irrespective of the technology they use to generate electricity. Also demand-side units and storage can participate.

⁴⁵ Section 5.2.3.5 of the Commission staff working document accompanying the document Report from the Commission, Final report of the Sector Inquiry on Capacity mechanisms, COM(2016) 752 final.

- (164) Furthermore, the rules of the mechanism provide adequate incentives to all potential capacity providers. This is true for new generation capacity, demand response and foreign capacity.
- (165) New capacity can participate in the mechanism. Moreover, when the investment costs attain a certain level, (see recital (79) above) new capacity can benefit from fifteen-year contracts. In the absence of such contracts, capital-intensive projects would face significantly more investment risk and would not be competitive in the auction. The longer term contracts do not increase their overall expected remuneration, but increase the predictability of their future revenues. The introduction of long-term contracts can facilitate the financing of such projects by reducing the risk premiums required by the investors in capital-intensive projects and facilitate external project financing. This in turn will facilitate the participation of those projects in the auction, contributing to a level playing field between more and less capital-intensive projects.
- (166) The fact that demand response will not receive the auction premium cannot be seen as putting it at a disadvantage compared to other capacity providers. Demand response operators will receive a financial compensation in return for their availability commitment in the form of an exemption from the capacity fee financing the mechanism. Moreover, the exemption from the payback obligation is justified since the scarcity rent would have been used to lower the capacity fee which the demand response operators pay in their role as consumers.
- (167) Several other features of the mechanism incentivise the participation of demand response. First, since it is more difficult for demand response to plan its availability long in advance, a share of capacity will be reserved for the T-1 adjustment auction (see recital (78) above) and demand response will be allowed to nominate the meters they will use to comply with the availability obligation close to delivery (see recital (63) above). Second, demand response providers will not be subject to the payback obligation, meaning that their incentives to operate in the electricity market are not distorted even if the strike price was below their variable costs. Third, the availability obligations imposed on demand response are more limited than the ones imposed on other capacity providers (see Section 2.8.3).
- (168) Italy has submitted evidence that, at this stage, it is not possible to include foreign capacity under the same conditions as the Italian capacity without implementing additional cross-border arrangements (see recital (58) above). The amount of interconnected capacity is however considered in the calculation of the amount of capacity to procure. Italy has in addition committed to enable foreign capacity to directly participate in the capacity mechanism in the auctions for delivery year 2019 and all future delivery years. The Commission has acknowledged the complexity of direct participation of foreign capacity in its decision on the market-wide capacity mechanism of France⁴⁶ and Ireland⁴⁷, allowing for a transitory regime. Moreover, until arrangements with other TSOs are in place, foreign capacity providers will be obliged to pay the TSO the difference between

⁴⁶ Commission Decision C(2016) 7086 of 8 November 2016, http://ec.europa.eu/competition/state_aid/cases/261326/261326_1840296_301_2.pdf.

⁴⁷ Commission Decision SA.4464/ SA.4465: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44464, and http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44465.

the *MGP* price of the interconnected Italian bidding zone and the strike price (see recital (91) above). This is line with the fact that market coupling at the Italian borders currently only applies at intra-day level.

- (169) Based on the foregoing considerations, the planned capacity mechanism is the appropriate instrument to address the security of supply risks identified by Italy. The design of the mechanism is appropriate, as it is open to all types of capacity providers and remunerates only availability. The Commission takes note of Italy's commitments to allow the direct participation of foreign capacity in the auction as of the delivery year 2019 and to negotiate agreements on cross-border participation with relevant TSOs.

3.3.5. Incentive effect

- (170) 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.
- (171) The objective of the measure is to ensure security of supply by keeping available sufficient capacity. As shown in the adequacy assessment, without the capacity mechanism there would be insufficient capacity to ensure security of supply because market revenues would be insufficient to cover the costs of a significant share of capacity.
- (172) In addition, the payback obligation creates a financial incentive to be available at times of scarcity. Moreover, Italy has introduced additional penalties to ensure compliance with the availability obligation. Demand response can also be automatically disconnected from the TSO.
- (173) The measure will thus have an incentive effect for new and existing capacities to be available at times of scarcity and thus contribute to the achievement of the security of supply objective.

3.3.6. Proportionality of the aid

- (174) 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 (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.
- (175) An auction process is applied to select the capacity providers of the mechanism. The mechanism is transparent and based on clear rules available to all participants in advance of the auction.

- (176) The demand curve of the auction reflects the expected adequacy situation in each of the electricity market zones in the delivery period. This, in principle, prevents over procurement. Moreover, the eligibility criteria are wide, and the rules governing the participation of the different capacities ensure that they can compete on an equal footing (see recitals (161) to (164) above). These features of the mechanism guarantee that there will be competitive tension in the auction and prevent discrimination among the different capacities.
- (177) In addition, several measures have been adopted to prevent plants that may have market power to exercise it and artificially raise the level of the premium. First, eligible capacity which is not offered in the auction is considered as offered at zero price (see recital (66) above) to discourage capacity withholding. Second, the demand curve is elastic and there are price caps to reduce market power on the supply side (see Section 2.5). Third, the existing capacity that does not require significant investments has an incentive to bid at a lower price than new or refurbished capacity and would be remunerated accordingly, unless new entry is required that pushes the clearing premium upwards (see recital (77) above). Finally, capacity providers will be able to qualify only one third of their capacity for each main auction (see recital (78) above). This rule makes it more likely that several capacity providers will be selected in the auction in each zone.
- (178) These features of the mechanism ensure that the overall amount of aid should result in beneficiaries earning a rate of return which can be considered reasonable.
- (179) Moreover, the measure has a built-in mechanism to ensure that any risk of windfall profits from the capacity mechanism is minimised. First, the auction follows a pay-as-clear descending clock design where successful bidders are paid the clearing price, which generally provides incentives for bidders to bid their true costs (see recital (65) above).
- (180) Second, the payback obligation also minimises the risk that capacity providers earn windfall profits and market power rents from electricity scarcity prices in combination with the capacity remuneration.
- (181) Third, maximum bids are capped and the caps apply differently to new and existing capacity. The level of the price cap for existing plants is based on the annual fixed operating costs of CCGTs (excluding depreciation costs). Italy chose the cost of this technology since it is the most widespread non-intermittent one in the Italian generation park. The chosen price cap will allow the existing capacity which is most necessary to meet the adequacy target to remain in the market. The cap for new capacity is based on the cost of new entry of a gas-fired open cycle turbine ('OCGT') with a capacity between 50 and 150 MW. This technology was chosen because it is the generation capacity with the lowest fixed costs and is the same as the one used for the calculation of the strike price which will be set at the level of the variable costs of an OCGT (see recital (88)). Since market revenues will allow OCGT capacity contracted in the capacity auction to cover merely its variable costs, the auction premium should cover its fixed costs to ensure that the adequacy target is met in case new capacity is needed. Considering the uncertainty about CONE (see recital (48)), it appears reasonable to set a range for the auction price cap and allow for the application of a multiplier of 1.2 if shown necessary in the future. Therefore, the price caps strike the appropriate balance between on the one hand preventing the abuse of market power and on the other ensuring a reasonable and proportional aid amount.

- (182) Finally, the short duration of the contracts awarded to most capacity providers contributes to minimising the risk of windfall profits.
- (183) As regards the existence of long-term capacity agreements, those are available only to projects that incur investment costs (expressed in EUR/MW) that are not lower than 40 % of the average investment costs in the peak technology referred to in recital (48). Existing capacity can receive a long-term contract only if it undertakes a substantial refurbishment and also meets or exceeds the 40 % investment threshold. Defining an investment threshold for new capacity ensures that the advantage linked to a long-term contract is granted only to the riskiest investments that could not be financed on the basis of short-term contracts.
- (184) As regards the level of the threshold, the TSO study on CONE has shown that the investment costs and the risks associated with new investments in the peak generation capacity can vary greatly (see recital (48)). It appears therefore reasonable to set the threshold as a percentage of the average investment costs. Moreover, the methodologies used to define the threshold and its level are in line with those of the Irish capacity mechanism⁴⁸.
- (185) As regards the provision in paragraph (231) of the EEAG, the design of the demand curve ensures that the price automatically tends to zero for levels of capacity corresponding to a LOLE lower than the reliability target.
- (186) The remuneration received by the selected capacity providers can therefore be considered proportionate.

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

- (187) 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).
- (188) 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. As explained in Section 3.3.4.2 of this decision, the eligibility rules of the mechanism are sufficiently open. Moreover, the rule giving priority to flexible generation in case of equivalent financial offers is based on the technical features of the capacity and justified on the basis of the generation adequacy problem Italy is facing (see recital (71) above).
- (189) The fact that capacity providers can qualify only one third of their capacity for each main auction, the rules governing the participation of new capacity and demand response, and the fact that capacity is de-rated ensure that there is a competitive pressure in the auction.

⁴⁸ Commission Decision SA.4464/ SA.4465:
http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44464, and
http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_44465.

- (190) Paragraph (232) (d) of the EEAG aims to avoid negative effects on the internal market, for instance due to export restrictions, wholesale price caps, bidding restrictions or other measures undermining the operation of market coupling.
- (191) It is important to observe in this regard that the measure does not change the beneficiaries' incentives to bid in the electricity and MSD markets. 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.
- (192) Moreover, setting a strike price will not distort the functioning of the electricity market by implicitly introducing a price cap for a number of reasons. First, the availability obligation is load-following (see recital (91)), meaning that it will be calculated ex post by the TSO on the basis of the actual demand for any given hour. This means that incentives remain in place to bid above the strike price for contracted capacity because the capacity provider does not know in advance the proportion of its capacity that will be subject to the payback obligation ex-post, which may be reduced later by the TSO according to the load scaling factor (see recital (91) above). Therefore, it would still have an incentive to receive higher prices for its entire capacity first, regardless of the level of the strike price, and only afterwards pay back part of its revenues, if requested.
- (193) Second, the capacity eligible to participate in the mechanism is de-rated based on historical availability. However, for any given capacity provider at any given moment the actual available capacity is likely to be different from the de-rated one. The part of the capacity that has not been contracted operates in the market freely, without being subject to the obligations under the capacity mechanism.
- (194) Third, not all capacity providers that participate in the auction are selected and there may be providers that decide not to take part in the mechanism, since participation is voluntary. These capacity providers have the incentive to maximise the revenues from the energy market.
- (195) Finally, the measure does not interfere with market coupling, since electricity will continue to flow towards the area where prices are the highest, rather than towards the delivery area in the capacity mechanism. This will be the case at least until the establishment of cross-border balancing markets and the conclusion of cooperation agreements with other TSOs. Moreover, such agreements will not deviate from the Electricity Balancing Guidelines⁴⁹ and other relevant provisions of EU law on the cross-border trading of electricity.

⁴⁹ The draft Regulation establishing a guideline on electricity balancing received a positive vote in committee on 16 March 2017. The Balancing guideline will set down rules on the operation of balancing markets. The objectives of the guideline include increasing the opportunities for cross-border trading and the efficiency of balancing markets. A provisional final version of the text is available at:
https://ec.europa.eu/energy/sites/ener/files/documents/informal_service_level_ebgl_16-03-2017_final.pdf.

- (196) Paragraph (233) (a), (b) and (c) of the EEAG aim to ensure that the negative effects of a capacity mechanism on market functioning are kept to a minimum, which in general means that the mechanism should leave the price and investment signals of the wholesale market, or 'energy-only market', intact.
- (197) As noted in recitals (183) to (186) above, the capacity mechanism leaves the pricing incentives of market participants unaffected and peak prices above the strike price are likely to occur also in the future. In this respect, the capacity mechanism produces incentives to investment without interfering in the efficient functioning of the reformed electricity market.
- (198) Moreover, the market-splitting mechanism used in the auction will reveal the respective value of capacity in the different areas, including the interconnected ones. In this sense, the capacity mechanism not only reduces incentives to invest in interconnection capacity but shows where capacity, including transmission capacity, is needed the most.
- (199) With regard to the undue strengthening of market dominance (paragraph 233 (d) of the EEAG), 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.
- (200) Finally, with regard to giving preference to low-carbon generators in case of equivalent technical and economic parameters (paragraph 233 (e) of the EEAG), the Italian authorities have confirmed that in such a 'tie-break' situation, priority will be given to capacity providers with the lowest emission factor.⁵⁰
- (201) 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 are sufficiently limited.

3.3.8. Transparency of the aid

- (202) According to Section 3.2.7 EEAG, for individual aid awards of EUR 500 000 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.
- (203) The Italian authorities will apply the transparency conditions laid down in Section 3.2.7 EEAG.

⁵⁰ 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.

3.3.9. Compliance with Article 30 and 110 TFEU

- (204) As indicated in paragraph (29) of the EEAG, if a State aid measure or the conditions attached to it (including its financing method when it forms an integral part of it) entail a non-severable violation of Union law, the aid cannot be declared compatible with the internal market. In the field of energy, any levy that has the aim of financing a State aid measure needs to comply in particular with Articles 30 and 110 TFEU. The Commission has therefore verified if the financing mechanism of the notified aid measures complies with Articles 30 and 110 TFEU.
- (205) As explained in recital (45) above, the capacity payments will be financed by a monthly charge levied on the dispatching users per energy withdrawal point (mainly retailers). This levy will be imposed on all electricity consumed in Italy regardless of its origin (i.e. including the electricity produced outside of Italy).
- (206) Foreign capacity will participate directly in the capacity mechanism as of the first auction with delivery in 2019 (see recital (59)) for an amount corresponding to the available cross-border capacity (see recitals (75) and (76) above). Therefore, the Commission considers that the proposed opening of the scheme to foreign capacity ensures compliance with Articles 30 and 110 TFEU.
- (207) In the light of the above, the Commission considers that the financing mechanism of the notified aid measure does not introduce any restrictions that would infringe Article 30 or Article 110 TFEU.

3.3.10. Conclusion

- (208) In the light of the above, the Commission finds that the aid scheme is compatible with the internal market.

4. CONCLUSION

The Commission has accordingly decided:

- not to raise objections to the notified aid scheme and to authorise it for 10 years until 31st December 2028 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.

Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission