



## EUROPEAN COMMISSION

Brussels, 7.2.2018  
C(2018) 601 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 style="text-align: center;">PUBLIC VERSION</p> <p>This document is made available for information purposes only.</p>
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**Subject: State aid No. SA.46100 (2017/N) – Poland – Planned Polish capacity mechanism**

Sir,

### **1. PROCEDURE**

- (1) On 16 November 2016, Poland pre-notified its plans to introduce a new capacity mechanism. The Commission sent a request for information to the Polish authorities on 27 January 2017, to which they replied on 31 March 2017. Several meetings or phone calls took place between the Polish authorities and the Commission services, on 10 February, 5 and 11 April, 8 June, 19 and 27 July, 18 August, 14 and 27 September, 5, 11 and 18 October, 20 November 2017, and 18 January 2018.
- (2) Following those pre-notification contacts, by electronic submission dated 06 December 2017, Poland notified the measure to the Commission pursuant to Article 108(3) of the Treaty on the Functioning of the European Union (TFEU).

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## 2. DESCRIPTION OF THE MEASURE

### 2.1. Overview of the mechanism

- (3) The Polish authorities have estimated that the electricity market in Poland will reach critical levels of generation adequacy around 2020, as further explained in Section 2.2 below.
- (4) To address the issue of the future generation adequacy, they have designed a capacity market where the Polish Transmission System Operator (TSO), *Polskie Sieci Elektroenergetyczne* (PSE), will be entrusted to organise centrally-managed auctions to procure the level of capacity required to ensure generation adequacy. The auctions will be open to existing and new generators, demand side response (DSR) and storage operators, located in Poland or in the control area of neighbouring EU TSOs. Successful bidders will receive a steady payment during the duration of the capacity agreement in return for a commitment to delivering capacity at times of system stress called on by PSE. Financial penalties will apply if beneficiaries do not deliver the amount of energy according to their capacity obligation. The measure will be financed through a levy on electricity supplies.

### 2.2. The need for a capacity mechanism

#### 2.2.1. Poland's generation adequacy concerns

- (5) The Polish authorities have identified various characteristics that make Poland in their view particularly prone to generation adequacy issues and therefore justify the introduction of a capacity mechanism.
- (6) According to the Polish authorities, and as further explained in recital (11) below, the Polish electricity market will face substantial mothballing and phasing-out of old inefficient power units by 2020. This will result in a situation in which the electricity market will not be able to meet peak demand. As a matter of fact, Poland already experienced electricity shortages in the summer of 2015, which resulted in the limited supply of energy to numerous industrial customers.
- (7) Those concerns are unlikely to be solved by market forces only as, according to the Polish authorities, the Polish market suffers from the "missing money" problem.
- (8) This concept has been identified and described in academic literature<sup>1</sup> and in the Commission's Sector Inquiry on capacity mechanisms.<sup>2</sup> Missing money exists in an energy-only market when energy market revenues alone may fail to bring forward sufficient investments in capacity. The reasons why this may happen are twofold:
  - (a) Inability of prices to reflect scarcity: wholesale energy prices are not allowed to rise high enough to reflect the value of additional capacity at times of scarcity.

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<sup>1</sup> Cramton and Stoft (2006): 'The Convergence of Market Designs for Adequate Generating Capacity'; Joskow (2006): 'Competitive Energy Markets and Investment in New Generating Capacity'; Cramton, Ockenfels and Stoft (2013): 'Capacity Market Fundamentals'.

<sup>2</sup> Section 2.2.2 of the Commission's Sector Inquiry on capacity mechanisms {SWD(2016) 385 final}, available at: [http://ec.europa.eu/competition/sectors/energy/capacity\\_mechanisms\\_final\\_report\\_en.pdf](http://ec.europa.eu/competition/sectors/energy/capacity_mechanisms_final_report_en.pdf).

- (b) Lack of certainty that prices will rise, even if they can: electricity prices being very volatile, the occurrence and magnitude of (usually rare) scarcity events are delicate to forecast. Moreover, at times when the wholesale energy market prices should peak to high levels, investors may be concerned that the Government or market regulator would act on a perceived abuse of market power, for example through the introduction of a price cap, or that prices may simply not rise, for instance because of more production than expected from intermittent renewable energy sources (RES).
- (9) The Polish authorities have demonstrated the existence of this market failure and quantified the adequacy issue by means of a detailed probabilistic assessment, which was carried out by PSE and whose assumptions and results were reviewed by an external consultant. This assessment compares supply and demand adequacy forecasts with a reliability standard, which has been expressed in terms of a Loss of Load Expectation<sup>3</sup> (LoLE). Like France and the UK<sup>4</sup>, the Polish authorities have set this reliability standard at 3 hours per annum.
- (10) The adequacy assessment relies on the data that PSE submitted to ENTSO-E for its Mid-term Adequacy Forecast (MAF) 2017 exercise.<sup>5</sup> The MAF methodology implemented in 2017 is based on a probabilistic assessment of the adequacy risks in 2020 and 2025 driven by the variation of demand, RES production, hydro conditions and forced outages of power plants and High Voltage Direct Current (HVDC) transmission capacity. The MAF probabilistic assessment is performed through a Monte Carlo simulation of the European electricity system by taking into account the impact of these uncertainties in a given year at hourly granularity. This simulation is repeated over several random draws of the adequacy assessment drivers to achieve reliable estimates of the following two main adequacy assessment indicators: the amount of Energy Non-Served<sup>6</sup> (ENS) and the LoLE.
- (11) In addition to the assumptions used in the MAF 2017, PSE's adequacy assessment tests the following sensitivities regarding the assumptions about the Polish electricity system: higher assumption on mothballing/decommissioning of thermal capacity, increased import interconnection capacity with neighbouring countries against the normal increase assumed in the MAF 2017 and reduced electricity demand growth against the normal demand projection used in the MAF 2017. PSE in its 2017 adequacy assessment presents a number of scenarios which combine the aforementioned assumptions. The external consultant has critically reviewed those assumptions and assessed, for instance, the impact of lower levels of economic decommissioning and higher levels of new entry driven by revenues from the energy market only.
- (12) In all simulated scenarios, both PSE and the external consultant conclude that capacity shortfalls are expected to arise in 2020 and 2025. In PSE's base case scenario as reviewed with the assumptions proposed by the external consultant, the LoLE

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<sup>3</sup> This is defined as the average number of hours per year in which supply is expected to be lower than demand under normal operation of the system.

<sup>4</sup> See Commission decisions of 23 July 2014 and 08 November 2016 approving, respectively, the British and French market-wide capacity mechanisms (cases n° SA.35980 and SA.39621).

<sup>5</sup> For more information on MAF, see <https://www.entsoe.eu/outlooks/maf/Pages/default.aspx>

<sup>6</sup> This is the energy per year that a TSO has to curtail because of the adequacy issues. It is measured in terms of MWh.

reaches 176.4 and 101.7 hours per annum in 2020 and 2025 respectively. In the least conservative scenario, which mirrors the MAF 2017 assumptions, the LoLE is also still above the 3-hour target with 14.2 hours in 2020 and 32.8 in 2025. The external consultant also calculated the volume of dispatchable capacity that would be needed in addition to the capacity assumed in the base case scenario in order to achieve the 3-hour LoLE per year on average. He found that this additional net generating capacity is 2,750 MW in 2020 and 8,068 MW in 2025.

- (13) Furthermore, PSE also performed an adequacy assessment for the year 2030 (i.e. beyond the period covered by the MAF 2017 assumptions). The least conservative scenario resulted in 12.56 hours LoLE which is again higher than the 3-hour target. The other modelled scenarios showed significantly higher rates of LoLE (up to 1,165 hours). The external consultant confirmed in this regard that PSE's methodology was consistent with similar adequacy studies of ENTSO-E.
- (14) In summary, the identified adequacy issue reflects the lack of available capacity (account taken of available imports) to meet the demand. Given the magnitude of this adequacy issue, the Polish authorities consider that it is necessary to intervene through the introduction of a market-wide capacity mechanism.

*2.2.2. Commitments made by the Polish authorities to improve the investment signals sent by the Polish energy markets*

- (15) It follows from recital (8) above that the inability of the energy market to send adequate investment signals (i.e. the missing money issue) is in principle less acute if the market design enables prices to reflect scarcity. Against this background, the Polish authorities have committed to reforming Poland's electricity market, in particular its short term balancing market, with a view to improve price signals during times of scarcity.
- (16) In this respect, the Polish authorities have made the following commitments:
  - (a) With regards to day-ahead and intra-day electricity prices, by 1 July 2018, there will be in Poland neither restrictions on bid prices nor price limits other than the ones currently applied within European single day-ahead and intraday coupling. This will be without prejudice to the maximum and minimum prices set in accordance with Article 41(1) and 54(1) of Commission Regulation (EU) No 2015/1222.<sup>7</sup>

With regard to balancing market price limits, these will be set by 1 January 2019 at a value not lower than the intra-day market price cap. This will be without prejudice to the technical price limits on the balancing market, applied if needed, in accordance with Article 30(2) of the Electricity Balancing Guideline.<sup>8</sup>

- (b) As of 1 January 2021, energy prices on the balancing market will be based on a marginal pricing scheme as set out in Article 30(1)(a) of the Electricity

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<sup>7</sup> Commission Regulation (EU) No 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (OJ L 197, 25.7.2015, p. 24–72).

<sup>8</sup> The provisional version of this Guideline can be found at the following link: [https://ec.europa.eu/energy/sites/ener/files/documents/informal\\_service\\_level\\_ebgl\\_16-03-2017\\_final.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/informal_service_level_ebgl_16-03-2017_final.pdf)

Balancing Guideline. This will be without prejudice to the possibility of applying locational price differentiation within the Polish bidding zone by applying full transmission network model in price discovery. If technical price limits are applied on the balancing market, they will take into account the maximum and minimum prices set in accordance with Article 30(2) of the Electricity Balancing Guideline.

- (c) As of 1 January 2021, all Balancing Service Providers will be allowed to update their integrated scheduling bids to the extent possible until the intraday cross-zonal gate closure time as provided in Article 24(5) and 24(6) of the Electricity Balancing Guideline.
- (d) As of 1 January 2021 all market participants will be able to bid or change their energy bids in the wholesale market at least until the intraday cross-zonal gate closure time.
- (e) By 1 January 2021, Poland will introduce an administrative scarcity pricing mechanism as referred to in Article 44(3) of the Electricity Balancing Guideline. The mechanism will be designed to provide a price adder to the energy prices on the balancing market varying in function of the amount of the reserve margin in the Polish system. The price adder calculation will be based on the Value of Lost Load (VoLL) and the Loss of Load Probability (LoLP), ensuring that when reserves are exhausted (i.e. there are no more available reserves that can be activated by the TSO) the imbalance settlement prices are not lower than the maximum price set in accordance with Article 54(1) of Regulation 2015/1222. This will be without prejudice to Poland applying measures to prevent the exercise of market power and strategic behaviour.
- (f) By 1 January 2021, Poland will make sure that DSR is eligible to participate in the wholesale electricity markets (including day-ahead and intra-day) as well as the balancing market and will be treated in a similar way as other market participants and balancing service providers. DSR can be represented either individually or via aggregators.
- (g) The following mechanisms will be terminated before the first delivery year of the capacity market, i.e. 2021:
  - Cold Contingency Reserve (*Interwencyjna Rezerwa Mocy – IRZ*);
  - Interventional Operation (*Praca interwencyjna – PI*);
  - Guaranteed Program of Emergency DSR (*Gwarantowany Interwencyjny Program DSR – IP DSR*);
  - Operational Capacity Reserve (*Operacyjna rezerwa mocy – ORM*).

### **2.3. Beneficiaries of the mechanism**

#### *2.3.1. Eligibility*

- (17) Capacity providers will participate in the Polish capacity market in the form of Capacity Market Units (CMUs). It is at CMU level that certification applications are made, capacity agreements are held, obligations apply in times of system stress and

penalties/over-delivery payments are calculated. Generation, storage and DSR capacity providers can all constitute CMUs.

- (18) The capacity market excludes capacity providers in receipt of operating aid, for instance RES capacity receiving operating aid on the basis of an approved RES State aid scheme.<sup>9</sup> Capacity providers in this situation have to submit a declaration that they will not combine an operating aid with the capacity payments if they win in the Polish capacity auction (see also recital (25)(h)).
- (19) Capacity providers in receipt of investment aid, for instance in the context of the Union's Emission Trading System (ETS)<sup>10</sup>, may participate in the mechanism. However, the investment subsidies granted on the basis of such investment aid schemes will be deducted from their capacity payments to avoid any overcompensation.<sup>11</sup> The remuneration will be reduced by the amount of investment aid earmarked for the construction or refurbishment of the unit concerned provided until the commencement of the first delivery period for this unit.<sup>12</sup> The reduction will be performed proportionally throughout the term of the capacity agreement. Any investment aid that would be granted on the basis of future aid schemes after the commencement of the first delivery period will be reduced accordingly.

### *2.3.2. Qualification process*

- (20) The qualification process will start with the so-called "General Certification". The General Certification is carried out at the beginning of each year. It aims at providing PSE with the general information needed to properly determine the capacity auction parameters and monitor market performance.
- (21) The General Certification concerns single physical units – however aggregation is possible at a later stage, during the so-called "Main Certification". It is mandatory for all existing generating units located in Poland with a gross capacity equal to or higher than 2 MW, regardless of their participation in the capacity market. It is only voluntary for existing generating units smaller than 2 MW, DSR and new generating units. However, it is necessary for any capacity provider who would like to participate in the further steps of the capacity market qualification process.
- (22) During the General Certification process, owners of a physical unit must submit basic identification, technical and economic data. DSR units are exempted from providing the list and location of their metering points at this stage of the qualification process.

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<sup>9</sup> See Commission decision of 02 August 2016 approving the Polish certificates of origin system to support RES, in case n° SA.37345, and Commission decision of 12 December 2017 approving the RES support scheme n° SA.43697.

<sup>10</sup> See Commission decision of 22 January 2014 approving the granting of free allowances to power generators, case n° SA. 34674.

<sup>11</sup> The remuneration will be reduced by the amount of investment aid earmarked for the construction or refurbishment of the unit concerned provided until the commencement of the first delivery period for this unit. The reduction will be performed proportionally throughout the term of the capacity agreement.

<sup>12</sup> This includes all financial means that were granted to the beneficiary in the framework of such investment aid, including the aid amounts that have not been paid out yet. The value of the ETS allowances will be calculated in line with recital 19 of the approved scheme SA.34674 Poland - Free allowances to power generators under Article 10c of the ETS Directive.

- (23) The data submitted for the General Certification is verified by PSE in cooperation with the relevant distribution system operator (DSO). The General Certification process is carried out through a dedicated IT system called the Capacity Market Registry. The outcome of the process for a given physical unit is a status record in the Capacity Market Registry.
- (24) The General Certification gives access to the second step of the qualification process called Main Certification, during which capacity providers seek to be certified as CMUs for the next auction. The Main Certification process is carried out before each auction. During this process, several physical units may be aggregated with a view to be certified as a single CMU ("Aggregated CMU").
- (25) To pass the Main Certification and be allowed to participate in the next capacity auction, prospective CMUs must provide PSE with the following information:
- (a) capacity declared to take part in the auction;
  - (b) confirmation by the relevant TSO/DSO that all metering points within the CMU fulfill the technical requirements for data collection, except for Aggregated DSR (see recitals (28)(c) and (28)(d) below);
  - (c) license for electricity generation (if required by law);
  - (d) for generating CMUs, evidence showing that the CMU is able to continuously deliver its net capacity for at least 4 hours without interruption and without any specific technical harm;
  - (e) for DSR CMUs, evidence showing that the CMU passed the so-called DSR Test (see recital (27) below);
  - (f) for all generating units in a given CMU (including generating units inside a DSR CMU):
    - ramping characteristics,
    - net electricity generation efficiency,
    - fixed and variable operating costs, as well as capital costs and investment expenditure on activities relating to assets constituting that physical unit for the year before the certification year,
    - unit emission factors (carbon dioxide and industrial emissions);
  - (g) information about existing and expected operating time limits resulting from other regulations (for instance, from the Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions<sup>13</sup>);

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<sup>13</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17–119).

- (h) a statement confirming that the CMU will opt out from operating aid support schemes (for instance, RES support schemes), if a capacity agreement is won in the auction;
  - (i) for CMUs applying for capacity agreements longer than 1 year (see Section 2.4.3 below):
    - evidence confirming the ability to acquire funding,
    - the physical scope and financial schedule of the investment;
  - (j) as regards new generating CMUs: the grid connection agreement or grid connection terms issued by the relevant TSO or DSO;
  - (k) as regards refurbishing generating CMUs: the net capacity in case of resignation from refurbishment and information about the change of technical and economic parameters resulting from the refurbishment (net capacity, efficiency).
- (26) At the end of the Main Certification process, CMUs are classified (i) as being eligible for a 1, 5 or 15-year contract (see Section 2.4.3 below), and (ii) as price taker or price maker (see Section 2.4.4 below).

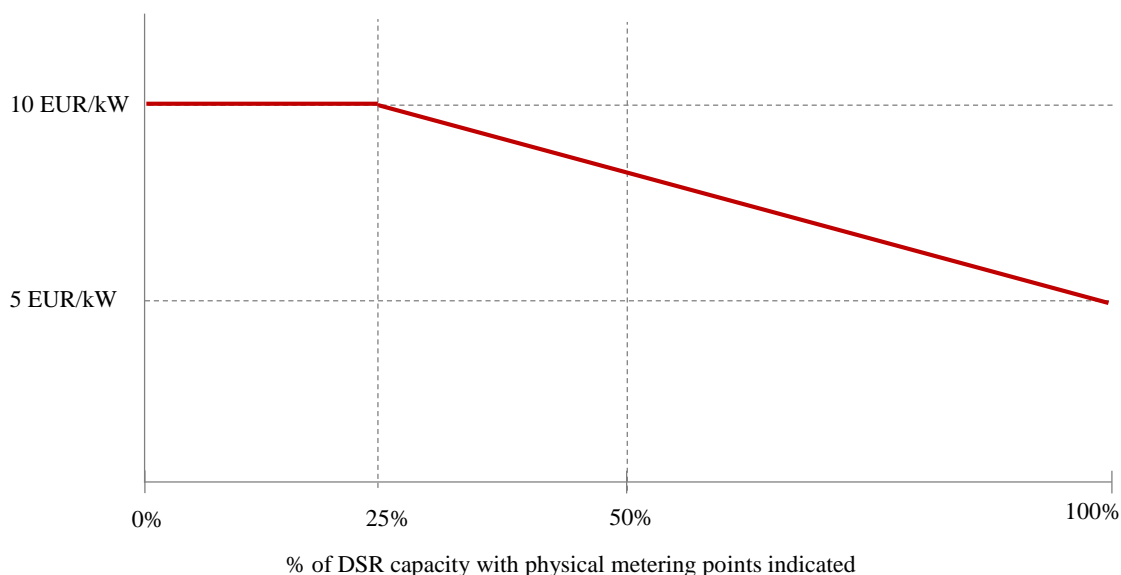
### 2.3.3. *Adaptation of the certification rules to DSR characteristics*

- (27) As explained in recital (25)(e) above, DSR CMUs must pass the so-called DSR Test to become fully certified. The DSR Test aims at verifying the ability of prospective DSR CMUs to respond to a stress event. For Aggregated DSR CMUs, the test is performed at the pool level. The DSR Test takes one hour and replicates the conditions of a stress event (including the time of call for capacity delivery, the methods for baseline calculations, etc.).
- (28) As it appeared challenging for DSR CMUs to be able to pass the DSR Test a long time before the delivery period, the Polish authorities have adapted the certification rules to facilitate the participation of DSR in the capacity market:
- (a) Provided that they fulfill the other conditions for the Main Certification, DSR CMUs (including Aggregated DSR CMUs) have until one month before the start of the first delivery period to pass the DSR Test. Until then, they are provisionally certified and have the status of "Unproven DSR" (in contrast, DSR CMUs that have passed the DSR Test qualify as "Proven DSR").
  - (b) Unless they can show an *investment grade* financial rating, Unproven DSR CMUs must provide collateral, which can take the form of a cash deposit, a bank or insurance guarantee, or a guarantee from the parent company provided that it is rated *investment grade*. The collateral requirement amounts to 10 EUR/kW (like for new generating CMUs). It is released upon completion of the DSR Test.
  - (c) Aggregated DSR CMUs can be provisionally certified without having to provide the detailed information required for the Main Certification with respect to each single physical unit and metering point – this information is only required at the time of testing.



- (d) However, to incentivise Aggregated DSR CMUs to provide as much information as possible to PSE before the DSR Test, the amount of collateral required from them will be reduced in proportion to the percentage of physical metering points provided to PSE, as illustrated in Figure 1 below.

**Figure 1:** collateral requirement for Unproven Aggregated DSR CMUs (*source: Polish authorities*)



## 2.4. The auctioning process

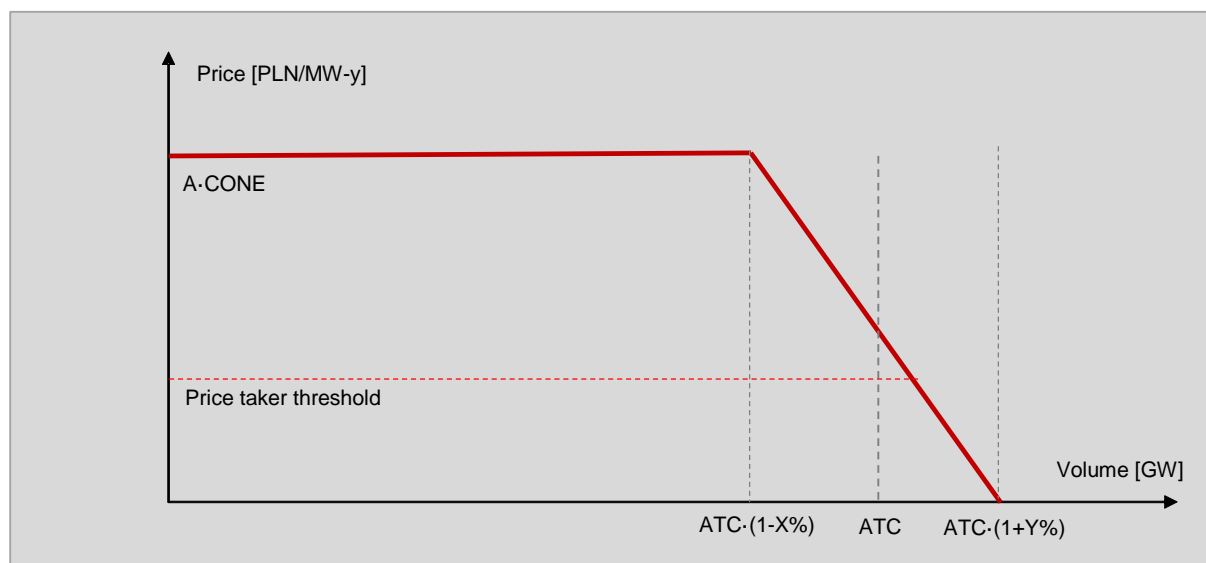
### 2.4.1. Establishing the amount of capacity to auction

- (29) The decision on how much capacity to contract in each capacity auction will be based on the reliability standard defined by the Government. A reliability standard is an objective level of security of electricity supply, and will be the basis for establishing a demand curve in advance of each capacity auction.
- (30) There is a trade-off between the cost of providing additional back up capacity and the level of reliability achieved. Establishing a reliability standard allows this trade-off to be made as it identifies the point at which additional security benefits are outweighed by the costs of providing additional capacity. It aims to give investors and market participants clarity over the Government's long-term security of supply objectives and to help reduce costs to consumers. It also aims to ensure that the Government does not contract more than the economically efficient level of capacity, which prevents over-procurement of capacity.
- (31) The Polish authorities have set a reliability standard for the Polish electricity market equal to a LoLE of 3 hours per annum. This translates to a system security level of 99.97%.
- (32) The reliability standard determines how much capacity is auctioned in the capacity market. Each year, PSE will set out how much capacity is needed to meet the reliability standard and will provide advice to the Government. The recommendation on the amount of capacity to contract in the capacity auctions to meet the reliability

standard will be based on PSE's assessment of different scenarios for the level of electricity demand and the amount of capacity provided by power plants which are not eligible for capacity payments, e.g. RES benefitting from other support schemes. Those scenarios and sensitivities will be as consistent as possible with ENTSO-E's MAF.

- (33) The Government will consult the Polish Energy Regulatory Office (URE) on PSE's recommendation before taking the final decision over how much capacity to procure in each auction. It will then set the parameters of a demand curve, which will give the relationship between the price of capacity and the amount of capacity in the auction demanded by PSE. This demand curve will be derived according to the methodology set out in the recitals below.
- (34) The demand curve gives the Government some flexibility on the amount of capacity to contract from year to year depending on cost. The sloping curve (see Figure 2 below) allows a trade-off to be made between reliability and cost, so that less capacity is procured in a given year if the price is very high. It also helps mitigate gaming risks because it provides an auction price cap, and flexibility as to the amount of procured capacity – both of which reduce opportunities for participants to push up prices by exercising market power.
- (35) The Government sets the parameters of the demand curve and publishes them in advance of each capacity auction, just before the start of the Main Certification process. Those parameters are:
  - (a) ATC (Auction Target Capacity) – the target level of capacity to be procured in a given capacity auction;
  - (b) CoNE [PLN/MW-year] – net Cost of New Entry – an estimate of the reasonable cost of new capacity based on the operating and capital costs and potential revenues from the energy market (including ancillary services) of a peaker plant, like an Open Cycle Gas Turbine (OCGT). The estimate provided by the Polish authorities is in the range of 65-70 EUR/kW-y;
  - (c) A – coefficient / multiplier increasing the CoNE – the product of multiplication of A and CoNE defines the maximum capacity price at the auction. The Polish authorities preliminary intend to set the A coefficient at the level of 1.5;
  - (d) X and Y [%] – the parameters setting the capacity volumes for which price achieves, respectively, the zero floor and cap prices;
  - (e) Price taker threshold – the maximum price at which price takers can offer capacity in the auction, preliminarily intended to be set at ca. 45 EUR/kW.
- (36) Figure 2 below gives an illustration of a capacity demand curve.

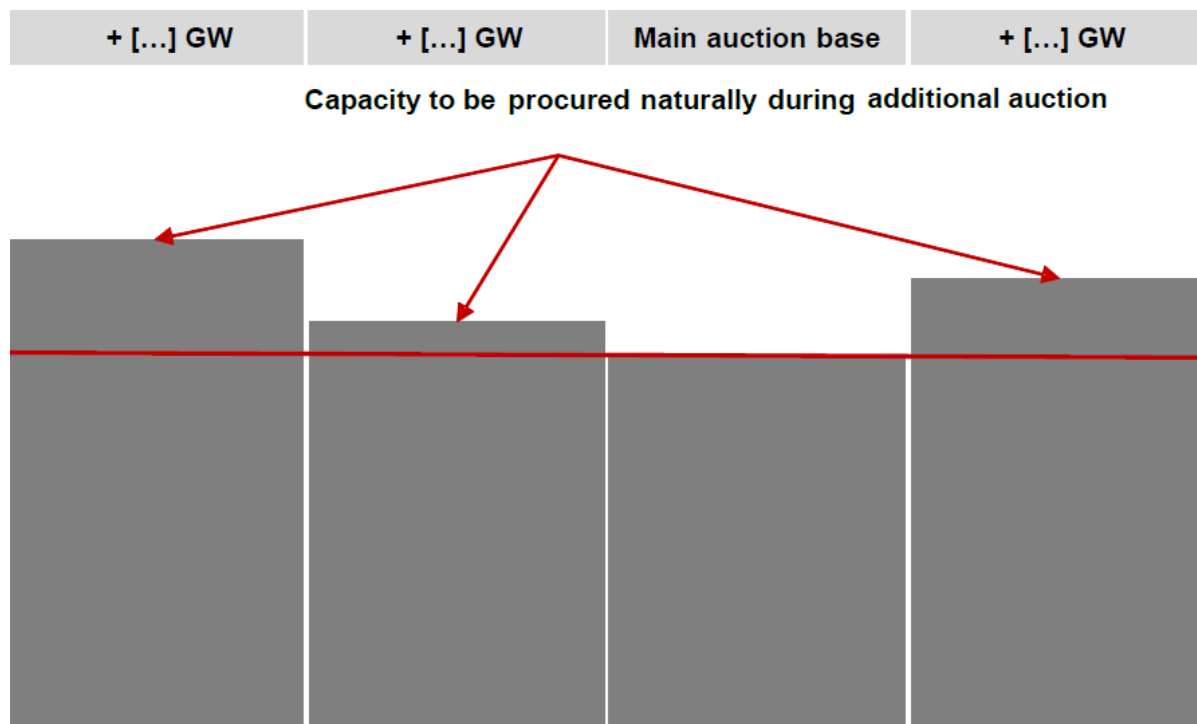
Figure 2: illustration of the demand curve (source: Polish authorities)



#### 2.4.2. Auction frequency and format

- (37) The primary capacity market will be based on two rounds of auctions for a given delivery year n:
- (a) the main auction carried out during the last two months of the year n-5 ("the main auction"), and
  - (b) an additional set of four simultaneous auctions (one per quarter of the delivery year) carried out in the first quarter of the year n-1 ("the additional auction").
- (38) As the first delivery year will be the calendar year 2021 and the very first auctions cannot be held before the end of 2018 for organisational reasons, the above described sequence will be adapted for the first two delivery years (2021 and 2022). For those two delivery years, the main auctions will both take place in 2018, i.e. in years n-3 and n-4 respectively. As a result, three main auctions are expected to take place simultaneously at the end of 2018, for delivery years 2021, 2022 and 2023. The next main auction in 2019 will then follow the normal sequence, i.e. for delivery year 2024.
- (39) The process for setting the demand curve is the same for the main and the additional auction – with the final decision taken by the Government based on an analysis provided by PSE. The additional auction ensures that the right amount of capacity is procured when more accurate demand forecasts are available and is important for enabling DSR capacity (which may find it difficult to participate in an auction five years ahead of delivery) to actively participate in the mechanism. As capacity will be procured on a quarterly basis in the additional auction, the main auction's target will not exceed the level of demand during the quarter with lowest demand. This will automatically set aside between [...] and [...] GW of capacity for the additional auction depending on the quarter (i.e. between [...] and [...] % of the total auction target, assuming an overall [...] GW target), as illustrated in Figure 3 below. In addition, the Polish authorities will set aside at least 1 160 MW in the additional auctions for the delivery years 2021 to 2024, as further explained in recital (83).

Figure 3: capacity "automatically" set aside for the additional auction, per quarter (source: Polish authorities)



- (40) Each capacity market auction is a descending-clock, pay-as-clear auction, in which all winning CMUs receive the same price for the service of availability that they provide. The auctioneer announces a high price at the beginning of the auction and eligible participants submit bids to indicate how much capacity they are willing to supply at that price. This process is repeated in successive rounds according to a pre-determined schedule. At each round, CMUs may withdraw from participating in subsequent auction rounds by submitting their exit offer (subject to rules concerning CMUs with price taker status – see Section 2.4.4 below). Exit offers are ranked in order of increasing exit prices to determine the supply curve. If several exit offers have the same exit price, their order on the supply curve follows their CO<sub>2</sub> emission factor (starting from the lowest). The process stops when the auction discovers the lowest price at which demand meets supply.
- (41) When deciding how much capacity to provide at any given capacity price, participants are expected to factor in the possibility of earning revenues on the energy market. Expected energy market revenues will vary by provider depending on their expected load factors, wholesale prices and fuel and carbon costs.

#### 2.4.3. Capacity agreement duration

- (42) If successful at the auction, CMUs will be awarded a capacity agreement at the clearing price. The length of available capacity agreements varies depending on the capital expenditure (CAPEX) which CMUs have to incur to deliver their capacity. Table 1 below summarises the typical CAPEX costs of the different technologies present on the Polish market.

**Table 1:** different CAPEX per technology (*source: Polish authorities*)

<b>Technology</b>	<b>CAPEX [kPLN/MW]</b>	<b>CAPEX [kEUR/MW]<sup>14</sup></b>	<b>Comment</b>
Coal/Lignite	6 100	1 435	Supercritical pulverized coal 1 000 MW class unit without CCS As regards lignite CAPEX related to mining is not included.
Existing coal modernization	50-1 350 Median c.a. 300-350	12-318 Median c.a. 71-82	Retrofit to best available technology (BAT) + lifetime extension BAT modernization range depending on boiler type as well as existing deNOx/deSOx facilities
Combined Cycle Gas Turbine	3 500	824	450 MW class power plant
Open Cycle Gas Turbine/ Gas engine (diesel)	2 500	588	Gas/oil fired 50 MW class turbine or 20 MW class engine
Biomass	13 800	3 247	5-10 MW class unit
Biogas (agriculture)	15 500	3 647	0.5-1 MW class unit
Biogas (landfill)	11 000	2 588	0.5-1 MW class unit
Gas engine CHP 1	5 500	1 294	1.5 MWe class unit
Gas engine CHP 2	4 400	1 035	5.5 MWe class unit
Gas engine CHP 3	3 800	894	25 MWe class unit
Combined Cycle Gas Turbine CHP 1	5 800	1 365	50 MWe class unit
Combined Cycle Gas Turbine CHP 2	4 700	1 106	150 MWe class unit
Coal CHP 1	11 500	2 706	10 MWe class unit

<sup>14</sup> This assumes an exchange rate of 1 EUR = 4,25 PLN

Technology	CAPEX [kPLN/MW]	CAPEX [kEUR/MW] <sup>14</sup>	Comment
Coal CHP 2	10 000	2 353	20 MWe class unit
Coal CHP 3	7 200	1 694	50 MWe class unit
Biomass CHP 1	15 700	3 694	10 MWe class unit
Biomass CHP 2	13 400	3 153	20 MWe class unit
Biomass CHP 3	9 700	2 282	50 MWe class unit

- (43) One year agreements will be granted to CMUs which do not undertake any particular CAPEX (i.e. mainly existing capacity). New and existing generating or DSR CMUs undertaking CAPEX above a 0.5 million PLN/MW threshold will receive 5-year capacity agreements. New generating CMUs undertaking CAPEX above 3 million PLN/MW will receive 15-year capacity agreements. According to the information provided by the Polish authorities, 15-year contracts will be accessible to most new-build coal-fired plants, CCGTs, biomass and CHP units. Agreements longer than 1 year are only available to participants in the main auction. The Polish authorities have committed to applying the above CAPEX thresholds. Only downwards adjustments may be introduced, from the fourth delivery year onwards, if the experience of the first three delivery years justifies it. However, the Polish authorities have committed to re-notifying any such adjustment to the Commission if the new thresholds are more than 20 % lower than the above CAPEX. The Polish authorities have further committed to ensuring that the unit CAPEX levels to qualify for 15-year and 5-year capacity agreements respect technological neutrality, in particular that the Combined Cycle Gas Turbine technology remains eligible for 15-year capacity agreements throughout the duration of the scheme.
- (44) The eligible CAPEX is determined on the basis of the investment costs which are expected to be incurred in the five years before the start of the delivery year. An exception is provided for the very first main auction, in which CMUs will be eligible for 5 or 15-year contracts on the basis of their CAPEX incurred since January 2014, i.e. since a few months after the announcement by the Government of its plans to introduce a capacity mechanism<sup>15</sup>, and provided that the concerned CMU did not start generating electricity before 1 July 2017. This aims at avoiding potential new projects artificially delaying their development to take advantage of the long term contracts.
- (45) The actual CAPEX spending will be monitored by PSE and will have to be certified *ex post* through an independent technical assessment before the commissioning of the installation. A CMU which fails to deliver on the applicable milestones will be exposed to penalties which, depending on the gravity of the failure, can be a financial penalty, a reduction to a one-year capacity agreement or a complete termination of the

<sup>15</sup> The Government's intentions to introduce a capacity market in Poland were first announced in July 2013 as a consequence of the generation adequacy risks identified in a governmental report, see also <http://bip.me.gov.pl/Dzialalnosc+ministerstwa/Energetyka+sprawozdania>.

capacity agreement. In addition, new generating CMUs must submit collateral in the amount of 10 EUR/kW, which is only released upon completion of the applicable milestones.

#### 2.4.4. *Price takers and price makers*

- (46) To mitigate market power in the auctions, potential capacity providers who have successfully passed the Main Certification will be classified as either price takers (who cannot bid above a relatively low threshold) or price makers (who are free to bid up to the overall auction price cap).
- (47) Generating CMUs that are eligible for longer than 1-year capacity agreements are price makers because, according to the Polish authorities, they should be free to bid at a price which justifies incurring their relatively high forward-looking CAPEX. DSR CMUs (including Aggregated DSR), independently of their contract length, are also price makers because, as long as they are not fully integrated to the energy market, they may need the capacity payments to recoup both their (generally low) fixed and at least part of their (generally high) variable costs – being subject to the price taker threshold would then limit their participation. Other CMUs (in essence, existing capacity providers who do not undertake significant CAPEX, and Aggregated CMUs other than Aggregated DSR) are price takers because they do not have particularly high forward-looking fixed costs to recoup.
- (48) According to the Polish authorities, the price taker threshold should be set at a level that captures the majority of existing plants, while being at a price low enough to mitigate gaming risk. The price taker threshold is expected to be set at ca. 45 EUR/kW, which reflects the current average fixed operation and maintenance costs of existing units on the Polish market.

#### 2.4.5. *Incentive for low-emission capacity ("green bonus")*

- (49) CMUs eligible to compete for 15 and 5-year agreements will have their agreements extended by 2 years provided that:
  - (a) they meet the 450 kg CO<sub>2</sub>/MWh emission performance standard<sup>16</sup> taking into account their total net efficiency [%] and a fuel related CO<sub>2</sub> unit emission factor [kgCO<sub>2</sub>/GJ], and
  - (b) as regards combined heat and power (CHP) units: at least 50 % of the heat production is dedicated to district heating.<sup>17</sup>
- (50) The Polish authorities estimate that, by facilitating access to finance for low-emission CMUs and by allowing them to raise more debt (debt being cheaper than equity) thanks to the prolonged revenues stability, the green bonus may enable the latter to reduce their bids in the capacity auctions by ca. 10 %.

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<sup>16</sup> According to the state of the art of energy technologies, the standard will be met by: all combined heat and power units, combined cycle gas turbines, biomass units, all gas and coal units equipped with coal capture and storage, nuclear plants.

<sup>17</sup> This condition is meant to prevent undertakings using heat from CHP facilities for their economic activities from receiving indirect operating aid through this incentive.

## 2.5. Participation of foreign capacity

### 2.5.1. Rules for the participation of foreign capacity in the Polish capacity market

- (51) The Polish capacity market will be open to foreign capacity providers located in the control area of neighbouring EU TSOs. In the target solution, foreign capacity providers will bid directly and explicitly in the Polish capacity auctions (see Section 2.5.1.1 below).<sup>18</sup> The Polish authorities submit that it may take several years to implement this target solution, which requires cooperation agreements with the neighbouring TSOs for issues related to the certification of foreign capacity and the monitoring of their availability obligation. Until such agreements can be signed, the Polish authorities propose to apply a transitory solution to allow cross-border participation, in which interconnectors (instead of foreign capacity providers) will bid explicitly in the capacity auctions (see Section 2.5.1.2 below).
- (52) In the target as in the transitory solution, the participation of foreign capacity may not exceed the forecasted level of imports to Poland during system stress events, which means that de-rating factors will be applied to interconnectors' capacity (see Section 2.5.2 below).

#### 2.5.1.1. Target solution

- (53) To reduce the administrative burden linked to the certification of foreign capacity, before each capacity auction PSE will pre-select those foreign capacity providers which will be allowed to participate. To do so, at least two weeks before the Main Certification, PSE will organise pre-auctions dedicated to foreign capacity. Foreign capacity units will not be required to submit detailed information at the stage of these pre-auctions.
- (54) Separate pre-auctions will be organised for each Polish border. In this respect, the German, Czech and Slovak borders will be treated as one border due to their integration into a single synchronized frequency area ("synchronous profile").<sup>19</sup> The Swedish and Lithuanian asynchronous borders will be treated as two distinct borders. Therefore, there will be three pre-auctions.
- (55) Those pre-auctions will be open to existing generating and DSR capacity units. During the pre-auctions, participants must submit bids indicating:
- (a) the offered capacity volume,
  - (b) the offered capacity price,
  - (c) information on the divisibility of the offer,

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<sup>18</sup> The target solution is consistent with the Commission's recommendation set out in Annex 2 of the Commission's Sector Inquiry on capacity mechanisms.

<sup>19</sup> The Polish power system being synchronously interconnected with the German, Czech and Slovak power systems, commercial transactions on one of these borders may have an impact on physical electricity flows at the other borders. As a result of this interdependency, capacity calculation and allocation on the energy market is presently performed at the level of the common technical profile Germany/Czech Republic/Slovakia.



- (d) the unit's carbon dioxide emission factor.
- (56) Bidders are also required to provide collateral in the amount of 10 EUR/kW.
- (57) For each border, bids are sorted in ascending order and pre-selected by PSE up to the corresponding de-rated interconnector capacity. If several bids have the same price, their order is determined based on their CO<sub>2</sub> emission factor (starting from the lowest). If the last acceptable bid exceeds the de-rated interconnector capacity and is indivisible, it is rejected and the next bid is considered to replace it. If the last bid exceeds the de-rated interconnector capacity and is divisible, it is partly retained up to the volume that matches the de-rated interconnector capacity.
- (58) After the pre-auctions, bids are confidentially stored by PSE, who releases the collateral submitted by bidders which were not retained.
- (59) All pre-auction winners must then go through the Polish Main Certification process to be certified as foreign CMUs. The Main Certification process for foreign CMUs is conducted by PSE in close cooperation with the relevant foreign CMU's TSO/DSO. Foreign CMUs must submit the same information as Polish CMUs to pass the Main Certification. In addition, they must submit a commitment by the connecting TSO to providing unit-based availability information (metering data or unit-based energy offers on the spot or balancing market) during the delivery period, for PSE to be able to verify that the foreign CMU complies with its obligations (see Section 2.7.2).
- (60) Aggregation for foreign CMUs is allowed under the same rules and conditions as for Polish CMUs.
- (61) If a foreign CMU fails to pass the Main Certification for the total amount of capacity that was retained in the pre-auction, collateral corresponding to the fraction of non-certified capacity is retained by the PSE.
- (62) Foreign CMUs that pass the Main Certification are recorded in the Capacity Market Registry. They are eligible for 1-year capacity agreements. Since their costs structure, in particular the amount of their fixed operation and maintenance costs, may be different from that of the Polish generation mix, foreign CMUs are not subject to the price taker threshold described in recital (48) and are therefore price makers in the capacity auctions. The Polish authorities submit that, in any event, the gaming risk against which the price taker threshold aims to protect is limited when it comes to foreign capacity, because the pre-auctions are expected to be very competitive due to the high number of foreign capacity providers competing for a limited amount of de-rated interconnector capacity.
- (63) Foreign CMUs take part in the Polish capacity auctions in a "passive" way. This means that their exit offers are automatically equal to the offers submitted during the pre-auctions.
- (64) Each capacity auction results in different clearing prices:
  - (a) the price paid to Polish CMUs is set by the last bid accepted from a Polish CMU;

- (b) the price paid to foreign CMUs from the synchronous profile is set by the last bid accepted from a German, Czech or Slovak CMU;
  - (c) the price paid to foreign CMUs from Lithuania is set by the last bid accepted from a Lithuanian CMU;
  - (d) the price paid to foreign CMUs from Sweden is set by the last bid accepted from a Swedish CMU.
- (65) Based on those different clearing prices, a capacity congestion rent is calculated for each individual border (Sweden, Lithuania, and synchronous profile) as a product of the awarded capacity and the clearing price difference between Poland and the relevant border. This congestion rent is split 50/50 between PSE and the neighbouring TSO(s) and must be spent in accordance with the provisions of article 16, paragraph 6, of Regulation (EC) No 714/2009 of the European Parliament and of the Council.<sup>20</sup>
- (66) The participation of foreign capacity along the above described lines requires cooperation agreements between PSE and its neighbouring TSOs. Therefore, the target solution for cross-border opening of the Polish capacity market will only be implemented (including stepwise):
- (a) on the synchronous profile, when a common agreement (or three different agreements) will be signed between PSE and 50Hertz (Germany), SEPS (Slovakia) and CEPS (Czech Republic);
  - (b) at the Polish-Swedish border, when an agreement will be signed between PSE and Svk (the Swedish TSO);
  - (c) at the Polish-Lithuanian border, when an agreement will be signed between PSE and Litgrid (the Lithuanian TSO).
- (67) According to the Polish authorities, neighbouring TSOs have an incentive to enter into such cooperation agreements because of the congestion rent sharing mechanism referred to in recital (65) above. However, until such agreements are signed, the Polish authorities will apply a transitory solution for cross-border participation.

#### 2.5.1.2. Transitory solution

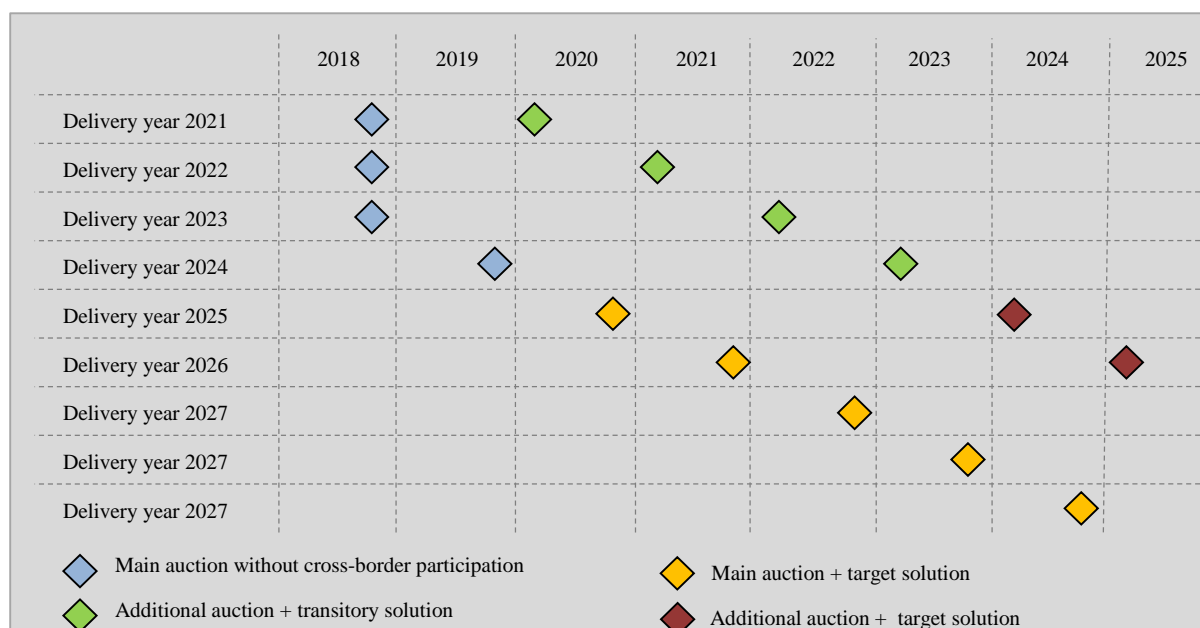
- (68) In the transitory solution, interconnectors (instead of foreign capacity providers) will explicitly participate in the capacity market by bidding in the capacity auctions. As (co-)owners of the interconnecting assets, the neighbouring TSOs will submit the offers during the capacity auctions. Each border will be treated as one single interconnector, which means that five interconnectors will participate in the capacity auctions: Germany-Poland, Czech Republic-Poland, Slovakia-Poland, Sweden-Poland, and Lithuania-Poland.
- (69) The amount of capacity offered by each interconnector will be set as the minimum of those two values:

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<sup>20</sup> Regulation (EC) 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (OJ L 211, 14.8.2009, p. 15–35).

- (a) the interconnector's de-rated capacity as per PSE's calculations;
  - (b) the neighbouring TSO's capacity offering (up to the interconnector's maximal thermal capacity).
- (70) According to the Polish authorities, this mechanism enables the neighbouring TSO to manage its risks.
- (71) If the sum of the capacity offered by TSOs from Germany, the Czech Republic and Slovakia is higher than the de-rated interconnector capacity for the whole synchronous profile, then the capacity of each of those three interconnectors will be adjusted proportionally to the initially offered capacity (the sum being therefore equal to the full de-rated interconnector capacity of the whole synchronous profile).
- (72) Interconnectors are price makers. They are entitled to receive capacity payments calculated as the product of the capacity offered and the auction clearing price. Payments are split 50/50 between PSE and the relevant neighbouring TSO. Like in the target solution, any revenues collected by the TSOs shall be spent in accordance with article 16, paragraph 6, of Regulation (EC) No 714/2009.
- (73) As the transitory solution also requires inter-TSO agreements (although simpler ones than in the target solution), the Polish authorities submit that it will be challenging to implement it during the first main auctions taking place in 2018, i.e. just a few months after the approval of the scheme. Nevertheless, the Polish authorities have committed to implementing the transitory solution as of the first delivery year (2021) by opening the additional auction to interconnectors' participation, and by setting aside enough capacity for this additional auction (see recital (83)). For the following years, the committed schedule of implementation of the target and the transitory solutions is outlined in Figure 4 below.

**Figure 4:** Planned schedule of implementation of the target and transitory solutions for cross-border participation (*source: Polish authorities*)



## 2.5.2. *De-rating of interconnectors*

### 2.5.2.1. Proposed methodology

- (74) To ensure that the participation of foreign capacity will not exceed the actual contribution of imports to Poland's generation adequacy, the Polish authorities will de-rate the capacity of each interconnector to the expected level of imports observed during stress events. This means that, for instance, if the Polish-Swedish 600 MW DC interconnector is de-rated to 400 MW for a given delivery year, then Swedish CMUs as a whole may not receive more than 400 MW of capacity agreements in the Polish capacity auctions corresponding to this delivery year.
- (75) The interconnectors' de-rating factors will be published and be subject to the same regulatory scrutiny as other capacity market parameters – with a proposal by PSE, an independent review by URE, and a formal decision by the Ministry.
- (76) PSE will use ENTSO-E's MAF forward-looking methodology as a basis for its de-rating calculations. In this respect, the Polish authorities have informed the Commission that PSE would follow the same modelling methodology and use the same input data as other European TSOs within the ENTSO-E MAF process.
- (77) As long as only certain years are simulated within the MAF modelling exercise (for instance, only the years 2020 and 2025 in the MAF 2017 exercise), PSE will use the last publicly available MAF exercise and pick the closest simulated year that is not later than the delivery year. For instance, if at the time of the main auction for the 2024 delivery year (i.e. in 2019) there are only MAF simulations for 2022 and 2027, then PSE will take the 2022 simulation as a basis for its 2024 de-rating calculation.
- (78) For the 2017 MAF exercise (which simulates the years 2020 and 2025), PSE has submitted the following inputs with respect to the Net Transfer Capacity (NTC) of its interconnectors:
- (a) Synchronous profile: 500 MW in 2020 and 2 000 MW in 2025;
  - (b) Sweden: 600 MW in 2020 and 2025;
  - (c) Lithuania: 500 MW in 2020 and 2025;
- (79) The Polish authorities have committed to assuming at least the above 2020 NTC values in all future de-rating calculations based on MAF.
- (80) Starting from the total NTC, the de-rated capacity of an interconnector will be calculated as the capacity which is forecasted to be actually used for imports during Polish system stress events. In practice, the result of this calculation is a population of Monte Carlo samples representing the de-rated capacity (i.e. the forecasted imports) for each simulated scenario. As the results within those samples may be significantly dispersed, PSE will set the final de-rated capacity as:
- (a) the arithmetic mean of the population if the coefficient of variation (relative standard deviation) is below or equal 50 %;

- (b) the value corresponding to a 25 %-percentile (i.e. a 75 % probability that the de-rated capacity is above this value) if the coefficient of variation (relative standard deviation) is above 50 %.
- (81) The de-rated capacity of each interconnector may be updated for the purpose of the additional auction if more up-to-date MAF data are available. The result of this update cannot reduce or terminate agreements awarded to foreign CMUs as a result of the main auction. However, if the updated de-rated capacity is:
- (a) lower than the capacity procured during the corresponding main auction, the Polish authorities may decide to increase accordingly the additional auction's target volume (to be procured from capacity providers in Poland), thereby hedging the risk of insufficient imports;
  - (b) higher than the capacity procured during the corresponding main auction, the difference shall increase the amount of capacity open to foreign providers in the additional auction's target volume.

#### 2.5.2.2. Commitments concerning the de-rating of interconnectors' capacity

- (82) For the delivery years 2021, 2022, 2023 and 2024, the Polish authorities have committed to applying at least the following values of de-rated interconnectors' capacity:
- (a) 500 MW for the synchronous profile unless the Czech and/or German and/or Slovak TSOs impose lower values in accordance with recital (69)(b);
  - (b) 660 MW for the combined Lithuanian and Swedish DC interconnectors unless the Swedish and/or Lithuanian TSOs impose lower values in accordance with recital (69)(b).
- (83) As foreign capacity will only be procured through the additional auction for those delivery years, it follows from this commitment that the Polish authorities will reserve at least 1 160 MW for these additional auctions – thereby reducing by this amount the capacity to be procured in the main auctions for these delivery years.
- (84) If the de-rating calculations carried out for these additional auctions using the MAF-based methodology give different results than the values committed to as outlined in recital (82), then the Polish authorities will:
- (a) in case of higher values – use these higher values in the additional auction;
  - (b) in case of values less than 40 % lower than the committed values referred to in recital (82) – retain the committed values but increase the total capacity to be procured from capacity providers in Poland in the auction by the difference between the committed and the calculated value;
  - (c) in case of values more than 40 % lower than the committed values referred to in recital (82) – re-notify a different value to the Commission no later than 9 months preceding the auction at stake.
- (85) For the delivery years after 2024, if the results of the de-rating calculations are:

- (a) higher than the committed values referred to in recital (82) – then this higher value will be used in the auction;
- (b) less than 40 % lower than the committed values referred to in recital (82) – then the committed values referred to in recital (82) will be used in the auction;
- (c) more than 40 % lower than the the committed values referred to in recital (82) – then the Polish authorities will re-notify a different value to the Commission no later than nine months preceding the auction at stake.

#### 2.5.2.3. Re-notification of the interconnectors' de-rating methodology

- (86) The Polish authorities have committed to re-notifying the interconnectors' de-rating methodology by the end of March 2022.
- (87) Meanwhile, starting from the first delivery year, the Polish authorities will monitor the actual performance of foreign capacity during stress events. The aim is to determine whether energy market arrangements allow foreign capacity with Polish capacity market obligations to actually contribute to Poland's security of supply. As part of this monitoring, PSE will check:
  - (a) whether neighbouring TSOs limit flows into Poland below the level of de-rated capacity;
  - (b) whether interconnectors are saturated to the level of procured capacity during stress events if the price difference justifies energy flowing into Poland.
- (88) The results of this monitoring will be submitted to the Commission as part of the re-notification.

### 2.6. Secondary market

- (89) The primary market for capacity will be complemented by a secondary one which, once the primary market has cleared, will allow for secondary trading and volume reallocation. It will function in a decentralised manner – on the basis of *over-the-counter* (OTC) contracts – or through organised third parties, such as commodity exchanges.
- (90) The terms and conditions of secondary market transactions are the responsibility of CMUs as transaction participants. The capacity market general rules do not define standards for agreements concluded between CMUs when assigning capacity obligations or for the purpose of volume reallocation.
- (91) Notification to the TSO of secondary market transactions takes place electronically using the Capacity Market Register.
- (92) Foreign CMUs may participate in the secondary capacity market within their capacity market zone, i.e. within their connecting TSO's control area. They may also transfer their capacity obligation (or a part of it) to CMUs located in Poland.

## 2.7. Capacity obligations

### 2.7.1. Domestic CMUs

- (93) As a general principle, the capacity market will follow a "delivered energy" model: capacity providers will be obliged to deliver energy whenever needed to ensure security of supply, i.e. in so-called system stress events.
- (94) A system stress event is defined as an hour in which the planned dispatchable capacity reserve available to PSE (in excess of demand) is lower than the level of reserve margin required to safely operate the grid. A system stress event may occur in any hour of peak demand between 7:00 and 22:00 hours on working days. No limitation is introduced as to the number and duration of breaks between sequentially occurring system stress events. A system stress event must be preceded by a warning issued by PSE at least 8 hours in advance.
- (95) Obligations under the capacity agreements are "load following". That means that capacity providers will only be required to be generating electricity or reducing demand up to the total level of their obligation if all capacity, for which capacity agreements have been concluded in the market, is necessary to meet demand. In a stress event where only 70 % of such total capacity is necessary to meet demand, each provider will only be required to generate electricity or reduce demand up to 70 % of their full capacity obligation.
- (96) PSE will verify that a given CMU has delivered its obligation according to the following criteria:
- (a) for a CMU active in the Polish central balancing mechanism (be it a generating or a DSR CMU), the verification will be based on the dispatchable capacity available to PSE in the balancing market processes;
  - (b) for other generating CMUs, the verification will be based on the CMU's physical net electricity generation;
  - (c) for other DSR CMUs, the verification will be based on the difference between the CMU's baseline electricity consumption and the amount of electricity actually consumed.

### 2.7.2. Foreign CMUs

#### 2.7.2.1. Transitory solution

- (97) The delivery obligation will apply to interconnectors in the transitory solution. This means that interconnectors will be liable to pay penalties in case of non-delivery.
- (98) As a general rule, penalties are split 50/50 between PSE and the neighbouring TSO. However, different rules may be jointly agreed taking into account the particular circumstances in which an interconnector may have failed to deliver its obligation.

#### 2.7.2.2. Target solution

- (99) As commercial imports are governed by transactions carried out on the energy market (i.e. not on the capacity market), the Polish authorities consider it inappropriate to

apply the "delivered energy" model to foreign CMUs.<sup>21</sup> The Polish authorities have therefore decided that foreign CMUs will be subject to an availability obligation, to be adjusted in accordance with the load following rule.

- (100) PSE, through the connecting TSO, will verify the foreign CMU's performance during system stress events. This verification will be unit-based and follow a step-wise process (the verification stops as soon as one step is fulfilled):
- (a) Step 1: verification at the level of the relevant border that the net physical flow in direction to Poland is not lower than the sum of the adjusted capacity obligations of all foreign CMUs on that border.
  - (b) Step 2: verification that the generation / load reduction of the foreign CMU is not lower than its adjusted capacity obligation.
  - (c) Step 3: verification that the sum of (i) the generation / load reduction of the foreign CMU and (ii) the foreign CMU's non-activated bids on the power exchange (day-ahead and intraday) is not lower than its adjusted capacity obligation.
  - (d) Step 4: verification that the sum of (i) the generation / load reduction of the foreign CMU and (ii) the non-activated bids on the power exchange (day-ahead and intraday) and balancing market are not lower than its adjusted capacity obligation.
- (101) To avoid that foreign CMUs place fake bids at unrealistically high prices on their wholesale or balancing markets (as a way to pretend that they are available even though they are almost certain not to be called at such price), PSE will check that the bids referred to in points (c) and (d) above are economically feasible and verifiable. Bids will be considered economically feasible if they do not significantly exceed the levelised cost of electricity for the concerned technology in case of generating CMUs, and 200 % of average prices observed on the Power Exchange in case of DSR CMUs.

### 2.7.3. Penalties

- (102) The penalty regime aims to provide capacity providers with incentives to deliver energy when needed. CMUs which perform below the expected level of performance will be penalised, while those that exceed the expected level will receive over-delivery payments, so that at the end of the year each unit's capacity payments will broadly reflect their performance. The penalty regime consists of three main elements:
- (a) an overarching annual liability cap of 200 % of a CMU's annual capacity revenues;

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<sup>21</sup> For instance, in a case where a Swedish peaker plant would have a Polish capacity agreement and a Polish system stress event would happen at a time of low demand in Sweden (during which the peaker plant would not be running), forcing this peaker plant to run would distort the energy market. The important thing in such a case would be that (i) imports flow from Sweden to Poland according to normal energy market functioning, whichever plants are producing in Sweden, and (ii) the peaker plant is available to run if need be.



- (b) a monthly cap of 20% of the annual cap;
- (c) an hourly penalty rate expected to be set at 750 EUR/MW.

(103) Penalties will be the same for Polish and foreign CMUs.

#### *2.7.4. Testing*

- (104) The penalty regime will be complemented by a system of performance demonstrations to ensure that capacity providers are able to deliver energy when needed and only receive capacity payments if reliable. This is especially important for those delivery years with no stress events in which testing providers' performance ensures that providers are physically capable of delivering as per their capacity obligations.
- (105) Testing requirements and the corresponding penalties are the same for foreign and Polish CMUs.

### **2.8. Budget and financing of the mechanism**

- (106) Since the annual fixed payments resulting from the auctions will depend on the clearing price and the amount of capacity to be procured in the auctions, the budget of the mechanism is hard to estimate. The Polish authorities have nevertheless estimated that the first year's budget may amount to ca. 4 billion PLN and then decrease in subsequent years when enough capacity is built and the auction clearing price becomes lower.
- (107) These costs will be covered by a number of entities<sup>22</sup> paying a capacity charge. The amount of the charge will be dependent on the electricity consumption of the entities concerned.
- (108) The Polish authorities have committed to notifying separately any reductions of capacity charge, which would constitute State aid.

### **2.9. Legal basis and duration**

- (109) The legal basis is a dedicated Legislative Act, called Act on the capacity market.<sup>23</sup> Before each auction, the auction parameters will be set through implementing acts. Aid will not be effectively granted until the first main auctions, which are expected to take place in autumn of 2018. The last main auction will be held in 2025.
- (110) The Polish authorities seek State aid clearance for 10 years.

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<sup>22</sup> These entities include final customers connected directly to the transmission grid, electricity distribution system operators, an energy sector undertaking performing economic activities in scope of transmission or distribution of electricity connected directly to the transmission grid and an energy sector undertaking generating electricity and connected directly to the transmission grid. The charge will be ultimately paid by final customers.

<sup>23</sup> Adopted by the Parliament on 8 December 2017 and entered into force on 18 January 2018.

### 3. ASSESSMENT OF THE MEASURE

#### 3.1. Qualification of the capacity mechanism as State aid

- (111) 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*".
- (112) 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 and be imputable to the State; b) it must grant an advantage liable to favour certain undertakings or the production of certain goods, i.e. be selective; c) the measure must distort or threaten to distort competition and it must have the potential to affect trade between Member States.
- (113) The Polish authorities do not object to the qualification of the measure as State aid and have notified the capacity mechanism in order for the Commission to assess its compatibility with the internal market. The Polish authorities put forward that the measure complies with the conditions set out in the Guidelines on State aid for environmental protection and energy 2014-2020 ("EEAG").<sup>24</sup>

##### 3.1.1. Existence of State resources and imputability

- (114) 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.<sup>25</sup> This has been confirmed in *Vent de Colère*<sup>26</sup>, 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.
- (115) Similarly, the General Court confirmed that the German renewables support scheme ("EEG") involves 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.<sup>27</sup> 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)

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<sup>24</sup> OJ C 200, 28.6.2014, p. 1.

<sup>25</sup> *Doux Elevage*, EU:C:2013:348, paragraph 34, *France v Commission*, EU:T:2012:496, paragraph 36; Judgment in *Bouygues Telecom 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.

<sup>26</sup> *Vent de Colère*, EU:C:2013:851.

<sup>27</sup> Judgment in *Germany v Commission ("EEG 2012")*, Case T-47-15, ECLI:EU:T:2016:281, paragraphs 81-128.

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.

- (116) 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 private body appointed or established by that State to administer the aid*".<sup>28</sup> 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.<sup>29</sup>
- (117) In the case at hand, the Commission notes that, since PSE is mandated by law<sup>30</sup> to collect and attribute the capacity charge referred to in section 2.8 above, the financial flows are constantly under the control of the State even if they take place between private parties, i.e. in the present case, capacity providers and consumers with PSE as intermediary entrusted by the State to administer the funds collected through the capacity charge. The scheme's legal basis confers on PSE a series of obligations and rights as regards the implementation of the mechanism, for instance the obligation to collect the capacity charge or the right to call a system stress event, making PSE the central point in the operation of the system. The funds involved in the operation of the capacity market are administered exclusively for the objective of security of supply pursued by the capacity market and in accordance with detailed rules defined beforehand by the Polish legislator through the Act on the capacity market. Those funds do not pass directly from the end users to the capacity providers, that is to say, between autonomous economic operators, but require the intervention of PSE as intermediary, who is entrusted by the State with their collection and administration. Accordingly, it must be held that the funds generated by the capacity market and administered by PSE remain under the dominant influence of the public authorities. The measure is therefore financed through State resources.
- (118) Moreover, the measure is imputable to the State as it has been designed and will be introduced by means of the Act on the capacity market adopted by the Parliament on 7 December 2017.
- (119) The Commission therefore finds that the measure is financed through State resources and imputable to the State.

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<sup>28</sup> 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 Neptune*, joined cases C-72/91, C-73/91, EU:C:1993:97, paragraph 19.

<sup>29</sup> 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.

<sup>30</sup> According to Article 69 of the draft Act on the capacity market (i.e. the scheme's legal basis).

### *3.1.2. Existence of a selective advantage*

- (120) 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, that is to say in the absence of State intervention.
- (121) The Commission notes that the successful bidders will receive through the mechanism a remuneration (capacity payments) they would not receive if they continued to operate in the electricity market on normal economic conditions selling electricity and ancillary services only.
- (122) The measure is also selective because it only applies to certain economic operators, namely those capacity providers that won a capacity agreement in the auction.
- (123) The Commission therefore finds that the measure confers a selective advantage on its beneficiaries.

### *3.1.3. Distortion of competition and effect on trade*

- (124) The EU electricity market is liberalised. The Polish energy market is 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 Polish market is expected to influence electricity prices, for example reduce prices or at least reduce price volatility, compared to an energy-only market.
- (125) Based on these considerations, the Commission finds that the measure is liable to distort competition and affect intra-Union trade.

### *3.1.4. Conclusion on the existence of State aid*

- (126) In the light of the above assessment, the Commission concludes that the capacity mechanism constitutes State aid within the meaning of Article 107(1) TFEU.

## **3.2. Lawfulness of the aid**

- (127) By notifying the measure before its implementation, the Polish authorities have fulfilled their obligations under Article 108(3) TFEU.

## **3.3. Compatibility of the capacity mechanism with the internal market**

- (128) In order to prevent State aid from distorting competition in the internal market and having effects on trade between Member States in a way which is contrary to the common interest, Article 107(1) TFEU lays down the principle that State aid is prohibited. In certain cases, however, State aid may be compatible with the internal market under Articles 107(2) and (3) TFEU.
- (129) 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 Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

- (130) The Commission has set out in the EEAG the conditions under which aid for energy and environment objectives may be considered compatible with the internal market on the basis of Article 107(3)(c) TFEU. Section 1.2 of the EEAG contains a list of the types of aid measures that may be considered compatible under the guidelines. For these types of measures, specific rules are provided in Section 3 of the EEAG.
- (131) The capacity mechanism is a measure to ensure generation adequacy and security of electricity supply and therefore falls within the scope of Section 3.9 of the EEAG on State aid for generation adequacy.
- (132) 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 paragraph (27) of the EEAG (with more specific details for measures ensuring generation adequacy in Sections 3.9.1 to 3.9.6 of the EEAG):
- (a) contribution to a clearly defined objective of common interest (see Section 3.3.1 of this Decision);
  - (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).
- (133) Moreover, the Commission underlines that this decision needs to 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 CO<sub>2</sub> 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.

### *3.3.1. Objective of common interest*

- (134) 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 for how the Commission will establish whether a notified aid measure pursues the objective of common interest in the field of generation adequacy.
- (135) Paragraph (219) of the EEAG determines that measures for generation adequacy can be designed in a variety of ways and can be aimed at addressing both short term

flexibility concerns and longer term concerns about the ability to meet a generation adequacy target.

- (136) The Commission notes that the Polish capacity market is a market-wide capacity mechanism aimed at ensuring the long term ability of capacity to meet the Polish reliability standard (3-hour LoLE). 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 which the authorities aim to ensure.
- (137) Paragraph (220) of the EEAG states that aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies including for fossil fuels. Member States should therefore primarily consider alternative ways for achieving generation adequacy which do not have a negative impact on the objective of phasing out environmentally or economically harmful subsidies, such as facilitating demand side management and increasing interconnection capacity.
- (138) In this respect, the Commission recognises that in Poland actions are being taken to facilitate demand side management and reinforce the grid. As regards demand side management, DSR is currently developed only to a minimal extent in Poland and cannot thus meet the necessary reliability standard. The Commission nevertheless observes that the Polish authorities are committed to facilitating the development of demand side management in Poland, as demonstrated both by the commitment described in recital (16)(f) and by the adjusted certification rules for DSR within the proposed capacity mechanism. These steps should intensify the development of the DSR up to its full potential.<sup>31</sup> As regards the increase of interconnection capacity, the Commission takes note of PSE's grid reinforcement programme, which runs until 2025 and concerns in particular the 400 kV network in the South Western part of the country. The Polish authorities have explained that this grid reinforcement programme would solve bottleneck issues and enable to increase the NTC of interconnectors on Poland's synchronous profile. The Commission also recalls that the capacity mechanism will generate revenues for interconnectors, which have to be spent on guaranteeing the actual availability of the allocated capacity and/or on maintaining or increasing interconnection capacities through network investments, in particular in new interconnectors, in accordance with Article 16(6) of Regulation (EC) No 714/2009.
- (139) Nevertheless, these measures alone are not sufficient to meet the reliability standard, as is clear from the adequacy assessment's conclusions described in recitals (10) to (14), and aid for generation adequacy appears necessary, as shown in Section 3.3.2 below. The Commission notes that the Polish 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. Against this background, the Polish authorities have introduced a number of design features within the proposed mechanism to preserve the objective of phasing out environmentally harmful subsidies. The green bonus, in particular, will enable capacity emitting less than 450 kg CO<sub>2</sub>/MWh to have access to cheaper finance and bid lower prices in the capacity auctions. In this respect, the Commission has assessed the information provided by the Polish authorities and considers that the

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<sup>31</sup> The estimates show that the potential for DSR in the Polish market is between 1,200 MW and 2,500 MW.

estimated impact of the green bonus on the ability of low emission capacity to bid lower prices in the auctions, as described in recital (50), is credible. Moreover, in case of a tie in a capacity auction, preference will also be given to lower emissions capacity. These design features contribute to creating favourable conditions for lower emissions capacities to penetrate the Polish market and progressively replace more polluting ones.

- (140) In the light of recitals (138) and (139), the Commission considers that, bearing in mind that the capacity market is a technology neutral scheme open to all potential capacity providers including conventional generation based on fossil fuels such as coal to a great extent, several design features and actions aiming at alternative ways for achieving generation adequacy have been provided by the Polish authorities<sup>32</sup>.
- (141) Paragraph (221) of the EEAG underlines the need to clearly define the objective at which the measure is aimed, including when and where the adequacy problems are expected to arise, in a way that should be consistent with the generation adequacy analysis carried out regularly by ENTSO-E.
- (142) The Commission notes that the primary objective of the notified measure has been defined by the Polish authorities as ensuring that a sufficient amount of electricity capacity remains available in the Polish market to ensure that the reliability standard can be met. The Commission also agrees that, on the basis of the detailed adequacy assessment, whose assumptions and probabilistic methodology are consistent with ENTSO-E's MAF as explained in recital (10), it is reasonable to expect that generation adequacy issues will arise as of 2020 absent a capacity mechanism. Although only the years 2020 and 2025 were simulated in PSE's adequacy assessment (because MAF data were only available for those two years), the increased magnitude of the adequacy issue between 2020 and 2025 and the roots of the problem (mainly: economic decommissioning and lack of new investment to address demand growth) suggest that those results reflect a true resource adequacy concern at least over the 2020-2025 period.
- (143) On this basis and in light of information provided in recitals (11) to (14) and (139) the Commission concludes that the Polish capacity mechanism is targeted at and contributes to a well-defined objective of common interest, namely that of security of supply.

### 3.3.2. *Need for State intervention*

- (144) As a general principle, in order to demonstrate the need for State intervention it must 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.

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<sup>32</sup> Moreover, the Commission underlines that this decision needs to 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 CO<sub>2</sub> 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.

- (145) Paragraph (222) of the EEAG requires in particular a proper analysis and quantification of the generation adequacy problem. Therefore, irrespective of the type of capacity mechanism a Member State intends to implement, a thorough adequacy assessment needs to be carried out before implementing a capacity mechanism. An adequacy assessment based on probabilistic modelling can provide reliable projections as to the likelihood of supply being sufficient to meet demand in the medium to long term. Where the assessment demonstrates that the probability of loss of load events is high, market reforms are likely to be necessary and it may be appropriate to accompany them by a capacity mechanism to ensure an appropriate level of security of supply. An adequacy assessment is moreover essential to identify the amount of capacity that needs to be maintained in the system in order to ensure secure supplies, i.e. to prevent under- or overprotection. Moreover, as required by paragraph (223) of EEAG the existence of market failures has to be clearly demonstrated.
- (146) The Commission notes that the Polish authorities have carried out a probabilistic adequacy assessment that has sought to establish whether in the absence of State intervention the pre-determined reliability standard would be met<sup>33</sup>. The Commission agrees that, on the basis of the outcome of the assessment undertaken by Poland, realistic expectations can be developed as to the future ability of the system to meet the reliability standard. The Commission underlines that, as set out in recital (12), as of 2020 shortfalls are expected to arise if capacity in the Polish market had to rely on energy-only-market revenues. In the year 2020, for instance, the shortfall would amount to 2,750 MW according to PSE's adequacy assessment.
- (147) The Commission moreover notes that the quantity of capacity that the Polish authorities intend to procure and remunerate is directly based on the adequacy assessment, because the authorities use an objective reliability standard based on the LoLE-metrics. To reach the 99.97 % level of system security corresponding to their 3-hour LoLE target, the Polish authorities expect to procure ca. [...] GW of capacity for the first delivery year. In other words, this means that peak demand is covered 99.97 % of the time. Procuring more capacity than what is required to reach the objective and reasonable reliability criterion set by the Polish authorities would lead to over-procurement and therefore over-compensation. In the case at hand, because of the link between the auction target and the reliability standard explained in recitals (29) to (32) above, the Commission is reassured that no over-procurement will take place, and that the size of the capacity market is economically rational and limited to the minimum necessary.
- (148) In line with paragraph (223) of the EEAG, the Polish authorities have also identified and substantiated the existence of various market failures, as described in Section 2.2.1 of this Decision. The Commission notes that the Polish authorities have convincingly demonstrated, by way of the probabilistic adequacy assessment referred to in recitals (9) to (12), that capacity in the Polish market is expected to suffer from a missing money problem in case they would have to rely on revenues from the energy market only.
- (149) The Commission welcomes that the authorities are in parallel taking steps to improve price signals in the electricity market by reforming the market framework so that

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<sup>33</sup> According to the adequacy assessment referred to in recitals (9) to (12).



prices will more accurately reflect scarcity situations. In particular, the implementation of a system of administrative scarcity pricing as described in recital (16)(e) ensures that prices will be high at times of scarcity and enhances the confidence of future capacity providers that their availability at times of scarcity will be duly rewarded.

- (150) 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 notes that different scenarios were simulated in the Polish adequacy assessment, each scenario relying on different assumptions regarding all four elements mentioned in paragraph (224) of the EEAG. In all modelled scenarios, capacity shortfalls are expected to arise as compared to what would be needed to achieve the 3-hour LoLE target.
- (151) Based on the foregoing considerations, the Commission takes the view that the Polish capacity mechanism is necessary.

### *3.3.3. Appropriateness*

- (152) As a general principle, a State aid measure is appropriate if it is designed in a way as to properly address the market failures identified. The EEAG further specify in paragraphs (225) and (226) that this implies that the aid should remunerate solely the service of availability and that the measure should be open, including to cross-border capacity, and provide adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand side response or storage solutions.
- (153) This section first analyses whether the market-wide capacity mechanism is the most appropriate among the various options to address the identified adequacy concern (Section 3.3.3.1). It then analyses whether the specific design of the Polish capacity mechanism is in line with the abovementioned specific EEAG requirements (Sections 3.3.3.2 and 3.3.3.3).

#### *3.3.3.1. Appropriateness of the market-wide capacity mechanism as instrument*

- (154) The Commission notes that generation adequacy concerns should first and foremost be addressed by reforming the 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.
- (155) As concluded in Section 3.3.1 of this decision, the objective of the measure is to ensure secure electricity supply in Poland. However, there are multiple ways to address the market failures identified by the authorities.
- (156) The Commission notes that the measure has been designed to support and complement the ongoing reform of the market described in Section 2.2.2. This reform aims at improving short term price signals, in particular on Poland's balancing market. The Commission considers that, by removing any bidding restrictions and introducing an administrative scarcity pricing function before the first delivery year of the capacity mechanism, the Polish authorities are acting to reduce the missing money

problem and reinforce both the short term availability and long term investment signals sent by the energy market.

- (157) However, as concluded in Section 3.3.2, the adequacy assessment carried out by PSE, combined with the analysis of the market failures on the Polish market, has convincingly demonstrated that in the coming years those market reforms cannot be solely relied upon to bring about a level of security of supply that meets the established economic reliability target.
- (158) The Commission therefore concludes that in the present case, where reforms are underway but where market failures are still expected to affect investment signals and therewith security of supply, a well-designed and market-wide capacity mechanism is an appropriate form of intervention<sup>34</sup>.

#### 3.3.3.2. Remuneration of availability only

- (159) With regard to paragraph (225) of the EEAG, the Commission recalls that 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 wholesale electricity price on the market. Such distortions could arise when granting electricity payments to capacity providers in the scheme and not to those without a capacity contract.
- (160) The Commission notes that the remuneration paid to capacity providers which are successful in the capacity auctions will consist of a fixed payment for maintaining the contracted capacity available for any periods of scarcity. It thus only remunerates the availability of the capacity and does not include remuneration for the amount of electricity that the capacity providers will offer on the market.
- (161) The Commission therefore concludes that the requirement to remunerate the availability service only is met.

#### 3.3.3.3. Eligibility rules

- (162) Paragraph (226) of the EEAG indicates 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 regards the technological neutrality of the mechanism, as set out in recital (17) all types of capacities can participate in the Polish capacity market, including DSR and storage. The Commission considers that the eligibility rules for all types of capacities are appropriate to ensure a level playing field between the various potential capacity providers in the capacity market. With respect to DSR in particular, the Commission underlines that, as described in Section 2.3.3, the Polish authorities have adapted the certification rules to overcome the concrete obstacles which DSR providers would have faced considering their specific characteristics and the fact that this industry is still in its infancy in Poland. With respect to RES, the Commission takes note that existing or new RES capacity providers may choose to opt out from RES State aid schemes if they prefer to participate in the Polish capacity market.

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<sup>34</sup> This conclusion is also consistent with the Commission's findings in the Sector Inquiry on capacity mechanisms.

- (164) As regards incentives for both new and existing capacity, the auctioning process has been designed to consider different lead times to make capacity available. Capacity providers can therefore bid for lead-times of one or five years ahead, which should cater for the potentially different needs of new, existing and refurbishing capacity. Moreover, the proposed design includes different capacity agreement lengths, depending on the CAPEX incurred to put capacity on the market. The Commission considers that this contributes to creating a level playing field between new and existing capacity as, in contrast to existing capacity, new capacity (or refurbishing one) is likely to need to secure financing for CAPEX, which is more difficult and more expensive without the relative stability provided by multi-year capacity agreements. Without multi-year capacity agreements, this financing issue would be particularly acute for independent capacity providers, who cannot finance investment in new capacity on the back of revenues from other plants in their portfolio.
- (165) As regards foreign participation, the Commission welcomes the commitment made by the Polish authorities to open the Polish capacity market to foreign participation as of the first delivery year. The Commission acknowledges that it may take several years before the target solution described in Section 2.5.1.1 can be implemented, and it therefore accepts the transitory solution proposed by the Polish authorities and the implementing timeline set out in Figure 4. The Commission also considers that the methodology for the de-rating of interconnectors and the underlying commitments, all described in Section 2.5.2, are appropriate to capture the expected contribution of imports to Poland's security of supply. It is nevertheless worth underlining that any improvements in the amount and/or allocation of transfer capacity, as compared to the current situation marked by low levels of imports, would need to be reflected in the de-rating calculation (in particular through the NTC assumptions) as soon as they materialise. The Polish authorities have agreed to re-notify the entire de-rating methodology before the end of March 2022 to take into account the results it gives during the first years and see whether corrections are needed for the future.

#### 3.3.3.4. Conclusion on the appropriateness

- (166) In the light of the above, the Commission is satisfied that the Polish market-wide capacity mechanism is the appropriate instrument, as a complement to the necessary energy market reforms, to address the security of supply risks identified by the authorities. The Commission is also satisfied that the design of this mechanism is appropriate, in view of its wide eligibility requirements, its openness to cross-border participation from the first delivery year onwards, and the remuneration of availability only.

#### 3.3.4. *Incentive effect*

- (167) 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 have 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.

- (168) The Commission recalls that the objective of the measure is to ensure security of supply by having available sufficient capacity. As shown in the adequacy assessment, without the capacity mechanism there would be insufficient capacity to ensure security of supply because a significant portion of plants is projected to make insufficient revenues from the energy-only market to cover their costs.
- (169) By enabling them to cover their costs and penalising them in case of non-delivery, the measure will incentivise existing and new capacities to stay on or enter the market, and to be available at times of scarcity. The measure will thus incentivise new and existing market players to contribute to the objective of security of supply. The Commission therefore concludes that the measure has an incentive effect.

#### *3.3.5. Proportionality of the aid*

- (170) Paragraphs (228) and (230) of the EEAG determine that on the one hand beneficiaries should earn a rate of return that is reasonable and that on the other hand windfall profits should be prevented. Paragraph (229) of the EEAG determines that this can be ensured by a competitive bidding process based on clear, transparent and non-discriminatory rules. Paragraph (231) of the EEAG states that the measure should be constructed so as to ensure that the price paid for availability automatically tends to zero when the level of capacity supplied is expected to be adequate.
- (171) The Commission notes that an auction procedure will be applied to select the capacity providers of the capacity market. Thanks to the wide eligibility criteria, the auction can be expected to be competitive and deliver an efficient outcome. Furthermore, the Commission recalls that the capacity requirement, as described in recital (28), is clearly and objectively defined based on the target LoLE, which in principle prevents uneconomic over-procurement. Therefore, as set out in paragraph (229) of the EEAG, the proposed allocation process will in principle ensure that remuneration of capacity providers is proportionate. Moreover, the competitive nature of the allocation process should ensure that the auction clearing price tends to zero if enough capacity is present on the market, in line with paragraph (231) of the EEAG.
- (172) The Commission nevertheless recalls that the capacity market should remunerate only those costs that are necessary for plants to remain available, and that capacity providers with market power should therefore be prevented from abusing that power and submitting inappropriate bids. The Commission agrees that there is a case for restraining the exercise of market power in the auctions in view of the concentrated ownership structure in the market.
- (173) In this respect, the Commission is satisfied that both an auction price cap and an existing capacity price cap will apply to price makers and price takers respectively. The objective of the caps is to mitigate market power and thus to limit the amount of aid to what is a reasonable remuneration for the service of availability. The Commission agrees with the parameters upon which the authorities have based the price caps. As regards the overall auction price cap, as described in recital (35)(c) it is based on the net CoNE represented by the net cost (per MW) of building a new OCGT unit, to which a multiplier of 1.5 is applied. The Commission finds that it is appropriate to use the cost of OCGT capacity to set CoNE as this is expected to be the marginal plant, i.e. the one that most needs a capacity payment (because it runs last) and should therefore be setting the price in the auction. Getting the level of the price cap right depends on an assessment of the degree of uncertainty around the central

estimate of net CoNE. Considering the uncertainty about the costs and revenues of such peaker plant, it appears reasonable to apply a multiplier of 1.5 to this central estimate. As regards the price cap for existing capacity, the Commission agrees with the argument summarised in recital (48), which is that existing capacity has in principle no reason to bid above their fixed operation and maintenance costs. In a competitive market, a bidder in a pay-as-clear auction can indeed be expected to include only its forward-looking net costs in its offer. Since energy market revenues cover the variable costs and part of the fixed operation and maintenance costs (through infra-marginal rents), and since financing costs of existing capacity are deemed to be sunk, those forward-looking net costs correspond to the fraction of the fixed operation and maintenance costs not covered by energy market revenues. Setting the price taker threshold at the average level of fixed operation and maintenance costs should thus ensure that a majority of existing plants is covered, while at the same time preventing the exercise of market power.

- (174) Based on these considerations, the Commission takes the view that the bid caps strike the appropriate balance between, on the one hand, preventing the abuse of market power and, on the other, letting market forces determine the outcome of the auctions.
- (175) As regards the existence of multi-year capacity agreements, the Commission notes that the different agreement lengths have been defined in relation with the CAPEX incurred by the capacity providers. This ensures that the advantage linked to a multi-year contract is proportionate to the level of the investment risk. Moreover, the length of the agreements will not exceed the depreciation period of the underlying investments. This depreciation period is typically longer than five/seven years for the kind of investments covered by the 0.5 million PLN/MW threshold, and typically longer than fifteen/seventeen years for the kind of investments covered by the 3 million PLN/MW threshold, including in case of the 20 % downward adjustment described in recital (43).<sup>35</sup> The Commission therefore takes the view that the multi-year capacity agreements have been designed in such a way that aid remains proportionate.
- (176) As regards the cumulation of aid, specific rules have been implemented to deal with the situation in which capacity providers were to receive either operating or investment aid in parallel with the capacity payments (see also recitals (18) and (19)). In case of operating aid, the capacity market excludes capacity providers in receipt of such aid from the participation in the capacity mechanism. Capacity providers in this situation have to opt out from their operating aid scheme if they win the capacity auction. Capacity providers in receipt of investment aid may participate in the mechanism. The investment subsidies granted on the basis of such investment aid schemes<sup>36</sup> will be nevertheless deducted from the capacity payments granted to the beneficiaries concerned to avoid any overcompensation. The Commission therefore

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<sup>35</sup> For instance: a new CCGT, which is eligible for a 17-year contract because of (i) CAPEX (ca. 3.5 million PLN/MW) above the 3 million PLN/MW threshold and (ii) an emission factor lower than 450 kg CO<sub>2</sub>/MWh, has a typical depreciation period of 25 years; a new OCGT, which is eligible for a 5-year contract because of (i) CAPEX (ca. 2.5 million PLN/MW) below the 3 million PLN/MW threshold and (ii) an emission factor higher than 450 kg CO<sub>2</sub>/MWh, has a typical depreciation period of 15 years.

<sup>36</sup> For example, aid received under the approved scheme SA.34674 Poland - Free allowances to power generators under Article 10c of the ETS Directive.

takes the view that the proposed mechanism prevents the possibility of overcompensation in case of cumulation of aid.

- (177) In conclusion, the Commission considers that the design of the proposed mechanism ensures that the aid granted through it is proportionate.

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

- (178) Any potential negative effects of the capacity market 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 specify this requirement in paragraphs (232) and (233).
- (179) 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. In Section 3.3.3.3 of this Decision the Commission assessed the eligibility of different technologies, demand side response and foreign capacity for the Polish capacity market, concluding that the eligibility rules are sufficiently open. Furthermore, the auction design as assessed above ensures that the procurement process will be competitive and produce an efficient outcome.
- (180) Paragraph (232) (d) of the EEAG aims to ensure that regulatory distortions in the energy market are removed. The Commission notes that the capacity market is part of a wider set of reforms intended to implement an energy market design that aims at improving the quality of price signals *inter alia* by removing undue bidding restrictions and price caps.
- (181) Paragraph (233) (a) to (c) of the EEAG aims 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.
- (182) The Commission notes that market-wide capacity mechanisms in general create a stream of certain revenues which generally enable capacity holder to recover some or all of their fixed costs of being operational in the electricity market. This means that the capacity holders no longer need to recover these costs from the energy-only market. As a result, prices on the wholesale electricity market may be lower than without capacity mechanism. Where much value is remunerated in the capacity market and little in the electricity market, the electricity market loses its vital function of creating market-based investment signals for new capacity (or, market-based price signals for existing capacity). In the case at hand, the Commission is of the opinion that the combined effect of, on the one hand, the committed reform of the energy market and, on the other, the competitive allocation process of the capacity market, will be that the revenues generated by the capacity market will be limited to the minimum necessary and allow the wholesale market to send appropriate price and investment signals.
- (183) With regard to the undue strengthening of market dominance (paragraph (233) (d) of the EEAG), the Commission notes that the Polish authorities have devised various market power mitigation measures as described in recitals (172) and (173). Moreover,

the openness to new capacity and the availability of long term contracts is expected to ensure that any possible dominance is not unduly strengthened.

- (184) Finally, with regard to giving preference to low-carbon capacity in case of equivalent technical and economic parameters (paragraph (233) (e) of the EEAG), the authorities have confirmed that in such tie-break situations capacity providers that have lower emission factors clear ahead of those with higher emission factors. Furthermore, the green bonus described in Section 2.4.5 creates an additional incentive for low-carbon capacity to participate in the capacity market, in line with the objective underlying paragraph (223) (e) of the EEAG.
- (185) Based on these considerations, the Commission is satisfied that, due to its design, the negative effects of the capacity market on competition and trade in the internal electricity market are sufficiently limited.

### *3.3.7. Transparency of the aid*

- (186) Aid has to be transparent in line with Section 3.2.7 of the EEAG. For individual aid awards of 500 000 EUR 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.
- (187) The Polish authorities have confirmed that they will apply the applicable transparency requirements.

## **3.4. Compliance with Article 30 and 110 TFEU**

- (188) 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.
- (189) As explained in recital (107) above, the capacity payments will be financed by a levy (capacity charge) imposed on a variety of entities. This levy will be imposed on all electricity consumed in Poland regardless of its origin (i.e. including the electricity produced outside of Poland).
- (190) The interconnected capacity will participate in the Polish capacity mechanism as of the first delivery year in 2021 (see also Section 2.5 which provides specific conditions for the participation of the foreign capacity including the de-rating of the interconnectors with the neighbouring countries). The interconnected capacity will firstly participate in the capacity market only in form of interconnectors directly bidding in the capacity auctions (see also Section 2.5.1.2). However, as of the main auction organised in 2020 for the delivery year 2025, foreign capacity providers will be able to directly participate in the auctions (see also Section 2.5.1.1). The amount of foreign capacity that can be awarded with the capacity payments is significantly

higher than the amount of current commercial cross-border flows to Poland (this is in particular the case for the synchronous border with Czech Republic, Germany and Slovakia). Therefore, the Commission considers that the proposed opening of the scheme to foreign capacity ensures compliance with Articles 30 and 110 TFEU.

(191) In the light of the above, the Commission considers that the financing mechanism of the notified aid measures does not introduce any restrictions that would infringe Article 30 or Article 110 TFEU.

#### **4. CONCLUSION**

In light of the commitments described in recitals (16), (43), (73), Sections 2.5.2.2 and 2.5.2.3 above, the Commission has accordingly decided not to raise objections to the Polish market-wide capacity mechanism, on the grounds that it is compatible with the internal market in accordance with Article 107(3)(c) TFEU.

The Commission approves the measure for ten years starting from the date of the first auction.

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Yours faithfully  
For the Commission

Margrethe VESTAGER  
Member of the Commission