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**Subject: State aid No. SA.42955 (2016/N-2) – Germany
Network Reserve**

Madam, Sir,

1. PROCEDURE

- (1) By electronic submission dated 7 December 2015, Germany notified to the Commission under Article 108(3) of the Treaty on the Functioning of the European Union (TFEU) a draft legislation aimed *inter alia* at the establishment of a new Capacity Reserve and the revision of an existing Network Reserve.
- (2) The Commission asked further questions with regard to the measures by letters dated 19 January 2016 and 4 March 2016, which were answered by Germany on 17 February 2016 and 5 April 2016 respectively.
- (3) On 4 July 2016, Germany withdrew its notification and re-notified a revised draft legislation for the revision of the existing Network Reserve only, indicating that the Capacity Reserve measure would be notified separately. The present Decision assesses only the Network Reserve as introduced on 26 July 2016 (the "Network Reserve" or the "measure").

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2. DESCRIPTION OF THE MEASURE

2.1. Context and background

- (4) The notified measure is part of a revision of the existing German Energy Act (Energiewirtschaftsgesetz, 'EnWG') of 7 July 2005 adopted on 26 July 2016¹, which besides the measure also contains an array of measures related to the functioning of the German electricity and gas market. It is the central objective of the revision of the EnWG to reform the electricity market in order to make it fit to deal with the energy transition, which in Germany is characterised by significant increases in the generation from variable renewable energy sources ('RES') such as wind and solar, combined with the phase-out of nuclear power. The German Ministry of Economic Affairs and Energy has presented its objectives and the associated measures in a Green Paper and a White Paper, which were published in October 2014 and July 2015 respectively.² The market reforms are mainly aimed at improving the functioning of short term and balancing markets. However, the revision also concerns a number of measures aimed at ensuring continued security of supply throughout the energy transition. The Network Reserve is one of those measures. Another is the ABLAV interruptibility scheme, the compatibility of which the Commission has assessed and approved.³ The package also contains proposals for the aforementioned Capacity Reserve, which at present has not been assessed yet by the Commission.
- (5) The Network Reserve is laid down in Article 13d of the revised EnWG. More detailed provisions on, *inter alia*, the selection procedure, the remuneration and the utilisation of the reserve are laid down in the Netzreserveverordnung (Network Reserve Ordinance)⁴.

¹ Energiewirtschaftsgesetz vom 7. Juli 2005 (BGBl. I S. 1970, 3621), https://www.gesetze-im-internet.de/enwg_2005/.

² 'An electricity market for Germany's energy transition', White Paper of July 2015: <http://www.bmwi.de/English/Redaktion/Pdf/weissbuch-englisch,property=pdf,bereich=bmwi2012,sprache=en,rwb=true.pdf>, and 'An Electricity Market for Germany's Energy Transition', Discussion Paper of the Federal Ministry for Economic Affairs and Energy, Green Paper of October 2014: <http://www.bmwi.de/EN/Service/publications.did=673330.html>.

³ ABLAV stands for Verordnung über Vereinbarungen zu abschaltbaren Lasten or Ordinance on interruptible loads. The Commission has assessed the compatibility of the ABLAV scheme with the internal market in State aid case SA.43735 and decided to raise no objections. The decision can be consulted on the Competition website in English and in German: http://ec.europa.eu/competition/eojade/isef/case_details.cfm?proc_code=3_SA_43735. In short, the ABLAV interruptibility scheme allows TSOs to contract a total of 1,500 MW of interruptible capacity. Consumers eligible to participate in the scheme must have a consumption of more than 10 MW and will therefore generally be medium and large undertakings, although aggregation of smaller consumers is also allowed. The TSOs can automatically and remotely reduce the consumption of these companies in order to keep voltage levels stable and the system in balance. In exchange, the companies are rewarded fixed and variable payments, the amounts of which are determined by way of weekly auctions. The loads can also be used as re-dispatch capacity in the context of congestion management. As such, ABLAV provides TSOs with an additional instrument to tackle the same problem as the Network Reserve is intended to address.

⁴ Netzreserveverordnung vom 27. Juni 2013 (BGBl. I S. 1947), die durch Artikel 6 des Gesetzes vom 26. Juli 2016 (BGBl. I S. 1786) geändert worden ist, <http://www.gesetze-im-internet.de/reskv/BJNR194700013.html>.

- (6) The Network Reserve aims at ensuring continued security of electricity supply also under the changing circumstances in the power market. As further explained below, it has a regional function in that respect and is aimed at maintaining grid stability.

2.2. Description of the Network Reserve

- (7) An earlier form of the Network Reserve (the "former Network Reserve") was first introduced in 2013, when a provision was included in the EnWG, Section §13b, that allowed the shutdown of power plants only under restricted conditions.⁵ Based on this provision, an ordinance ('Verordnung') was adopted that contained rules on the selection and procurement of reserve power plants. The main reason for the introduction of the former Network Reserve was a concern about the continued ability of the German power system to ensure security of electricity supplies to all consumers in all timeframes, due to the rapid increase in variable renewable generation in the North of the country, the delays encountered in grid expansion, the nuclear phase-out and the lower profitability of conventional power plants.
- (8) The Network Reserve of 26 July 2016 as notified to the Commission allows transmission system operators ("TSOs") to contract generation capacities and to use those to manage grid congestions by means of re-dispatch⁶ and thus to maintain grid stability. In practice, this means that TSOs can activate power plants participating in the Network Reserve, generally located in the South of Germany, when insufficient transmission capacity is available to transport electricity from production sites in the North to meet demand in the South. An equivalent amount of generation capacity is ramped down in the North of Germany. The TSOs can only use plants in the Network Reserve after they have exhausted all market-based measures to ensure system security, such as balancing, re-dispatch of plants in the market or counter-trading.
- (9) The Network Reserve is open to three types of participants:
- (a) Plants that currently do not operate, but that the TSOs can ask to be made ready for operation because they are relevant to the system;
 - (b) Plants whose operators have notified their intention to temporarily or finally close, but have been prohibited to do so because they are relevant to the system;
 - (c) In case the quantity procured from categories (a) and (b) is not sufficient to meet the established need, a selection procedure for additional capacities takes place, which is open to foreign operators.
- (10) The categories (a) and (b) are sometimes referred to as the "compulsory part" of the Network Reserve, whereas category (c) constitutes the "voluntary part".

⁵ Note that this former Network Reserve is not assessed in this decision.

⁶ The term 're-dispatch' refers to measures activated by one or several TSOs by altering the generation and/or load pattern in order to change physical flows in the transmission system and relieve a physical congestion. In practice, TSOs instruct plants in an area with excess generation to ramp down and other plants, in an area with too little generation, to increase production, thus alleviating the bottleneck in the grid.

- (11) The system relevance that determines whether a plant can or cannot close down definitively or temporarily is determined by the German energy regulator (Bundesnetzagentur), based on an assessment by the relevant TSO. As a general rule, a plant is system relevant when by leaving the market it would reduce the positive re-dispatch potential in the German market. The designation of a plant as system relevant in general applies for a maximum of 24 months, but may be renewed and extended in case the plant continues to be of relevance for the system.
- (12) The yearly selection procedure of the plants in the Network Reserve starts with the establishment of the TSOs' need for re-dispatch. The four TSOs carry out a joint system analysis which contains an indication as to the need for reserve capacities.⁷ The Bundesnetzagentur reviews the system analysis and establishes the amount of capacities to be procured by the TSOs.
- (13) The capacities necessary are taken first from the existing plants of categories (a) and (b). These plants automatically become part of the Network Reserve. The German authorities consider that in view of the fact that the need for re-dispatch is clearly and significantly higher than the combined availability of plants in the categories (a) and (b) it is not appropriate to use a competitive selection procedure for these plants. The operators of the plants enter into contracts with the TSO of a duration of in principle two years.⁸ According to the terms of the contracts, the power plants are required to be available for re-dispatch services, i.e. to generate electricity, upon instruction by the TSO. During their time in the Network Reserve, the plants are not allowed to sell electricity or other services on the electricity market.
- (14) In case the combined generation capacity of plants in categories (a) and (b) does not suffice to meet the identified need, the Bundesnetzagentur instructs the TSOs to organise a call for expression of interest to procure the remaining capacity. The procedure is open to other system-relevant power plants that are not yet included in the Network Reserve. In practice, this means that only foreign generators participate in the call because all German plants are already bound to follow re-dispatch instructions of their TSOs (so-called 'market-based re-dispatch') and system-relevant German plants that wanted to leave the market have already been taken up in the Network Reserve.
- (15) In terms of remuneration, different rules apply to the three categories of operators in the Network Reserve, as enumerated in recital (9). As a general rule, remuneration for domestic plants that have been prohibited from closing down is based on a compensation of costs (types (a) and (b)). Remuneration of the foreign plants in the Network Reserve is based on the outcome of the tender procedure (type (c)).
- (16) In more detail, domestic plants that have been prohibited from *temporarily* closing down are entitled to reimbursement of three cost categories which are laid down in § 13c of the revised EnWG. First, a cost-based compensation for preparing and maintaining the 'reserve' state. Second, any operating costs that

⁷ This analysis is described in detail in Section 3.2.2 of this decision, where the necessity of the Network Reserve is assessed.

⁸ The contract duration can be prolonged with another 24 months in case it is decided that the plant continues to be system relevant.

the generator incurs for the actual production of power when instructed by the TSO to produce, i.e. mainly fuel and emission costs. And third, compensation proportionate to the depreciation of the plant due to its activities in the Network Reserve, based on the residual value and remaining commercial lifetime of the plant. This methodology is similar to that of the remuneration for plants in the market that are being used in the context of 'regular' re-dispatch activities by and upon instruction of the TSO.

- (17) As regards plants that have been prohibited from *definitively* closing down, operators are entitled to reimbursement of four cost categories. First, a cost-based compensation for the maintenance of the plant. Second, a cost-based compensation for preparing and maintaining the 'reserve' state. Third, any operating costs the generator incurs for the actual production of power when instructed by the TSO to produce. And fourth, opportunity costs are reimbursable insofar as they arise from the lifetime extension caused by the inclusion in the Network Reserve (for instance, capital tied up in the form of land or installations). Compensation for the depreciation of installations can only be reimbursed to the extent that the depreciation is a result of the reserve function. Costs that the plant operator would have incurred in any case if the plant had shut down are not reimbursable.
- (18) The precise amount of remuneration for the system-relevant plants in the Network Reserve is negotiated bilaterally between the relevant TSO and the plant operator and is subsequently laid down in a contract, after approval by the Bundesnetzagentur.
- (19) As regards the foreign plants, the remuneration is determined on the basis of a call for expression of interest, which takes place after the Bundesnetzagentur has determined that there is an additional need for re-dispatch potential. The call for expression of interest is organised by the TSOs and invites foreign capacities to apply for participation and indicate their expected remuneration. TSOs then proceed to assess the grid-related effectiveness of the applicant plants in providing the necessary re-dispatch potential and on that basis select the plants. An important element in this assessment is the lead time within which a plant can deliver the service. The Bundesnetzagentur monitors the TSOs' effectiveness assessment.

2.3. The beneficiaries

- (20) The beneficiaries of the Network Reserve are the operators of installations of the three categories set out in recital (9) (participants of the Network Reserve). These are operators of electricity installations active on the German electricity market, but also on the electricity markets of neighbouring countries, in particular the Austrian and Italian markets.

2.4. Financing mechanism

- (21) The remuneration is paid to the selected operators by their respective TSOs who in turn are allowed to recover these costs from the network users via the grid tariffs, on the basis of § 13c(5) EnWG and Section § 6(2) of the Network Reserve Ordinance. The costs are thus treated in a way similar to those of regular congestion management, whereby the energy regulator, on the basis of Section 11 of the Incentive Regulation Ordinance (or Anreizregulierungs-

verordnung)⁹, ensures a reasonable return on the basis of its general tariff regulation methodology.

2.5. Budget

- (22) The annual costs of the Network Reserve depend on its size and the frequency of its use. The costs of holding 5,400 MW of capacity in reserve in 2016 were estimated by Bundesnetzagentur at EUR 126 million.¹⁰ These costs refer only to the sums paid to plants in the Network Reserve. Total re-dispatch costs are significantly higher because they include also regular re-dispatch costs of plants operating in the market (estimated for the first three quarters of 2015 at EUR 393 million) and the ramping down of plants in the North of the country (EUR 276 million).

2.6. Duration

- (23) The Network Reserve is a measure that is aimed at addressing the current congestion within the German transmission network. Whereas the former Network Reserve was limited until December 2017, the notified Network Reserve of 26 July 2016 does not contain a fixed end date, but the need and size are reviewed on a yearly basis by way of the process involving TSOs and the regulatory authority as described in Section 2.2 of this decision.

3. ASSESSMENT OF THE MEASURE

3.1. Qualification of the Network Reserve as State aid

- (24) According to Article 107(1) TFEU, "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".
- (25) The qualification of a measure as State aid requires the following conditions to be met cumulatively: a) the measure must be financed through State resources; b) it must grant an advantage liable to favour certain undertakings or the production of certain goods; c) the measure must distort or threaten to distort competition and d) the measure must have the potential to affect trade between Member States.
- (26) The German authorities argue that the Network Reserve does not constitute State aid for a number of reasons. First, they argue that the measure is not financed from state resources, but merely governs an exchange of funds between private parties. Second, the measure does not confer a selective advantage on its beneficiaries, because the remuneration foreseen is cost-based and their financial position does not improve. The third argument the German authorities

⁹ Verordnung über die Anreizregulierung der Energieversorgungsnetze, <https://www.gesetze-im-internet.de/bundesrecht/aregv/gesamt.pdf>

¹⁰ See report of Bundesnetzagentur of 29 April 2016 (in German), pages 3 and 16: https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Energie/Unternehmen_Institutionen/Versorgungssicherheit/Berichte_Fallanalysen/Feststellung_Reservekraftwerksbedarf_1617_1819.pdf;jsessionid=6C455FFA60D860C8AD78A8A97DC1C8A7?__blob=publicationFile&v=2.

put forward is that the measure does not impact on cross-border trade given that the capacities are held outside the electricity market and the remuneration does not go beyond a reimbursement of costs. In addition the German authorities clarify that this reasoning also holds for the foreign generators in the Network Reserve, because their selection takes place in a market-based way, i.e. via a call for expression of interest.

- (27) The German authorities furthermore consider that – in case the Commission should find that the payments to the operators constitute State aid –, this aid is compatible with the internal market because it complies with all conditions set out in the Guidelines on State aid for environmental protection and energy 2014-2020 ("EEAG")¹¹.

3.1.1. Existence of state resources and imputability

- (28) 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 budget or from a public entity.¹² This has been confirmed in *Vent de Colère*¹³, 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 found state resources 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.
- (29) 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.¹⁴ The General Court considered that for state resources to be involved it is sufficient that the TSOs had been designated by the State to manage the system of aid for the production of EEG electricity and that the obligation on the TSOs that additional payments be made to producers of EEG electricity 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.
- (30) In the present case it is indeed the German State that has developed the mechanism to finance the measure. It has decreed by law (Section §13c(5) EnWG and Section §6(2) of the Network Reserve Ordinance) that the costs of the measure can be passed on to all consumers through an increase of the

¹¹ OJ C 200, 28.6.2014, p. 1.

¹² *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.

¹³ *Vent de Colère*, EU:C:2013:851.

¹⁴ Judgment in *Germany v Commission ("EEG 2012")*, Case T-47-15, ECLI:EU:T:2016:281, paragraphs 81- 128.

network tariffs ('Netzentgelte'), as described in recital (21). The measure is therefore imputable to the State.

- (31) It 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".¹⁵ 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.¹⁶
- (32) In that respect, the Commission notes that, since the TSOs are mandated to collect and attribute the funds by law, the financial flows are constantly under the control of the State even if they take place between private parties, i.e. *in casu* the Network Reserve capacity providers and network users, with the TSOs as intermediaries tasked by the State to administer the funds. The Network Reserve Ordinance clearly confers on the TSOs a series of obligations and rights as regards implementation of the mechanisms resulting from that law, so that the TSOs are the central point in the operation of the system laid down by it. The funds involved in the operation of the Network Reserve Ordinance are administered exclusively for purposes in the general interest, in accordance with detailed rules defined beforehand by the German legislature. The law allows the TSOs to recover the full costs of this activity from network users. Those funds do not pass directly from the network users to the capacity providers in the Network Reserve, that is to say, between autonomous economic operators, but require the intervention of intermediaries (TSOs), entrusted by the State with their collection and administration. Accordingly, it must be held that the funds generated by the Network Reserve Ordinance and administered collectively by the TSOs remain under the dominant influence of the public authorities. On this basis, the funds must be categorised as State resources.
- (33) The Commission therefore finds that the measure is financed through State resources and imputable to the State.

3.1.2. *Existence of a selective advantage*

- (34) 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.
- (35) German authorities argue that the measure does not confer an advantage on the operators of the installations participating in the Network Reserve because their remuneration is limited to compensating the costs they incur in the context of the Network Reserve. The operators would therefore not be better off than in the absence of the Network Reserve.

¹⁵ 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.

¹⁶ 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.

- (36) The Commission notes that the specific payments provided for by the Network Reserve, i.e. the reimbursement of the cost categories described in recitals (15) to (19) are payments that these operators would not have received if they had continued to operate in the electricity market on normal economic conditions, given that the Network Reserve is open only to domestic plants that announced their intention to close down.
- (37) More generally, the existence of an advantage is not excluded by the fact that the benefit does not go beyond compensation for costs stemming from the imposition of a regulatory obligation, because costs arising from such State-imposed obligations can be considered to relate to the inherent costs of the economic activity, so that any compensation for these costs confers an advantage on the undertaking.¹⁷ Moreover, without the activity imposed on the beneficiaries through the regulatory obligation, the operators would not have incurred the costs for which the Network Reserve compensates them.
- (38) As regards operators of installations falling in category (c), the Commission furthermore notes that the payments provided are in any event not a compensation for regulatory imposed costs and are received in addition to continued operating revenues from participation in the local electricity market.
- (39) The measure is also selective because it only applies to certain economic operators (participants of the Network Reserve).
- (40) The Commission therefore finds that the measure confers a selective advantage on its beneficiaries.

3.1.3. Distortion of competition and effect on trade

- (41) The Network Reserve risks distorting competition and affects trade within the internal energy market. The liberalised German electricity market is open and well-connected to those of its neighbours. Electricity is traded within the internal energy market and – within the constraints of the bidding zone configuration – market functioning ensures that power is generated where it costs least and transmitted via interconnectors to be consumed where demand is highest. Therefore, it can be assumed that the remuneration paid to the operators of the plants in the Network Reserve that form part of and compete on the same electricity market has the potential to affect intra-Union trade and distort competition.

3.1.4. Conclusion on the existence of State aid

- (42) In the light of the assessment above, the Commission concludes that the Network Reserve constitutes State aid within the meaning of Article 107(1) TFEU.

3.2. Lawfulness of the aid

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

¹⁷ Judgment of the General Court of 25 March 2015, *Belgium v Commission*, T-538/11, ECLI:EU:T:2015:188, paragraphs 74 to 78.

3.3. Compatibility of the Network Reserve with the internal market

- (44) 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.
- (45) On the basis of Article 107(3)(c) TFEU, the Commission may consider compatible with the internal market State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.
- (46) The Commission has assessed the compatibility of Network Reserve in the light of the EEAG. In the EEAG, the Commission has set out the conditions under which aid for energy and environment may be considered compatible with the internal market under Article 107(3)(c) TFEU. Section 1.2 EEAG contains a list of the types of aid measures to which it applies. For these types of measures, specific guidance is provided in Chapter 3 EEAG.
- (47) The Commission takes the view that the Network Reserve is first and foremost a measure to ensure generation adequacy and security of electricity supply and therefore falls within the scope of Section 3.9 EEAG on State aid for generation adequacy.
- (48) The Network Reserve aims to ensure that the German generation fleet is adequately equipped to ensure the balance of electricity demand and supply at all times and in all parts of the network. The Network Reserve ensures that the generation capacity remains adequate in regions that cannot be properly supplied due to the lack of sufficient transmission capacity, by preventing plants relevant for maintaining system security from closing down. Therefore, the Commission considers the Network Reserve to be a capacity mechanism in the form of a strategic reserve with a particular, regional function, given that capacity is held outside the market, kept on stand-by and at the disposal of the TSO to ramp up and generate in order to address shortage situations.
- (49) To assess whether the Network Reserve 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) EEAG (with more specific details for measures ensuring generation adequacy in Sections 3.9.1 to 3.9.6 EEAG):
- (a) contribution to a clearly defined objective of common interest (see Section 3.2.1 of the current decision);
 - (b) need for State intervention (Section 3.2.2 below);
 - (c) appropriateness (Section 3.2.3 below);
 - (d) incentive effect (Section 3.2.4 below);
 - (e) proportionality (Section 3.2.5 below);

- (f) avoidance of undue negative effects on competition and trade (Section 3.2.6 below);
- (g) transparency of the aid (Section 3.2.7 below).

3.3.1. *Objective of common interest*

- (50) As stated in paragraph (30) 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.
- (51) The German electricity system is increasingly under strain, in particular in Southern Germany, due to important and relatively fast changes in the German generation mix. The rapid roll-out of renewable energy sources, the phasing out of nuclear energy and changes in the relative fuels prices, notably for natural gas and hard coal, have a strong impact on the regional distribution of the electricity generation. In general terms, Northern Germany is experiencing growth in electricity generation notably from on-shore and off-shore wind energy while Southern Germany is more affected by the nuclear phase-out and relatively higher gas prices which make gas-fired power generation relatively more expensive.
- (52) This regional disparity has led to congestion in the German transmission network in particular for North-South connections, as further explained in Section 4.2.2 below. Especially for situations in which both demand is high and generation from wind is high, the annual TSO assessment has identified severe congestion in the German network leading to loop flows through the transmission networks of neighbouring Member States and to potential electricity shortages in Southern Germany. While the congestion is being tackled by reinforcing the German transmission network, as explained in recital (71) below, the necessary infrastructure investment will still take several years to complete. In the meantime, Germany has put in place the Network Reserve with the objective of ensuring a secure electricity supply in particular in Southern Germany, by ensuring system integrity also at times of high generation in the North and high consumption in the South. The Network Reserve is therefore targeted at the general common objective of ensuring a secure energy supply.
- (53) Paragraphs (219) to (221) EEAG define more specific criteria of how Member States should define the common objective.
- (54) Paragraph (219) EEAG determines that measures for generation adequacy can be designed in a variety of ways and can be aimed to address both short term flexibility concerns and long term concerns about the ability to meet a generation adequacy target. The Commission notes that the Network Reserve rewards generators for being available to the TSOs to ensure sufficient power is generated to meet demand in the Southern Germany. This is both a short-term and a mid-term concern because the objective is to devise a temporary measure that is one of the instruments at the TSOs' disposal to deal with a shortage of transmission capacity in the coming years until sufficient transmission capacity is built.

- (55) Paragraph (220) EEAG explains that aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies and that alternative ways for achieving generation adequacy without these negative environmental impacts should be considered.
- (56) The Commission notes that the primary objective of the Network Reserve is to ensure security of supply. However, it does also not undermine the objective of environmental protection. The measure has to be seen in the context of a set of measures to manage and ultimately overcome the capacity shortage in Southern Germany. Firstly, the measure is in great parts necessary to allow for a rapid roll-out of renewable energy sources within Germany which pursues an environmental objective. Secondly, in parallel to operating the Network Reserve, Germany promotes the development of more demand-side management for instance through the aforementioned ABLAV interruptibility scheme. Such development reduces the need for the Network Reserve. Thirdly, Germany is in the process of strengthening its transmission grid in order to reduce and ultimately remove the Network Reserve altogether.¹⁸
- (57) Paragraph (221) EEAG underlines amongst others the need to clearly define the objective at which the measure is aimed, including when and where the adequacy problems are expected to arise.
- (58) The Commission notes that the objective of the Network Reserve has been clearly defined in §13d(1) EnWG and §2 Network Reserve Ordinance. Also, the necessity assessment of the next section of the present decision (Section 3.2.2) clarifies that the security of supply concerns arise where grid congestions restrict the amount of power that can flow towards consumers. By first assessing whether certain power plants are system relevant, the German authorities ensure that only plants that are located close to the demand centres and whose production is not limited by grid congestions are eligible for participation in the Network Reserve.
- (59) On this basis, the Commission concludes that the Network Reserve is targeted at and contributes to a well-defined objective of common interest, namely that of security of supply which in the present case concerns the generation adequacy in Southern Germany until sufficient transmission capacity is built.

3.3.2. *Need for State intervention*

- (60) As a general principle, in order to demonstrate the need for State intervention it needs to be established that a market failure exists that prevents market forces from achieving generation adequacy and thus risks undermining the objective of security of supply. Paragraphs (222) to (224) EEAG define more specific criteria of how Member States should demonstrate the need for State intervention.
- (61) Germany has substantiated the existence of a market failure and, hence, the need for a measure to ensure generation adequacy on the basis of the following arguments: (i) the existence of generation capacity shortage in Southern

¹⁸ Germany has also awarded EUR 1,6 billion in subsidies to 2,7 GW of lignite-fired plants, primarily to cut CO₂ emissions and contribute to Germany's national 40 % CO₂ reduction target by 2020. The closure of these plants was assessed by the Commission in May 2016 under case number SA.42536. None of the plants comprising this 2,7 GW will take part in the Network Reserve.

Germany determined by a detailed and partially probabilistic methodology and illustrated by the use of the existing network reserve in the past, (ii) projections for the continuation of that shortage in the coming years on the basis of that methodology and (iii) the lack of incentive to keep currently unprofitable existing capacity in the market or to build new capacity due to the temporary nature of the capacity shortage until sufficient transmission is in place and due to expected low electricity wholesale prices in the future.

- (62) As regards points (i) and (ii), Germany uses a methodology laid down in the Network Reserve Ordinance to measure the need for and size of the Network Reserve. The exercise is carried out on an annual basis by way of the process described in section 2.2 of this decision and results in a yearly decision by the Bundesnetzagentur establishing the need for and the size of the Network Reserve for the coming winter as well as for the winters in one and in five years. This decision is based on an annual system analysis carried out by the four cooperating TSOs.¹⁹
- (63) As the first step of the methodology, the input parameters, scenarios and assumptions that form the basis of the TSOs' system analysis are to be coordinated between the TSOs and the Bundesnetzagentur. This coordination exercise includes firstly the definition of basic input parameters, such as the available generation capacities of the different technologies and their expected development, planned and unplanned outages, the expected load and expected demand, a domestic grid analysis. It also includes the expected available interconnection capacity ('NTCs'). Secondly, extreme scenarios are developed during which it might be necessary to dispatch the Network Reserve. These scenarios are based on the combination of historic data and events and include for instance the scenario of high wind and high demand, which generally leads to increased pressure on the transmission grid. Thirdly, the impact of the scenarios on the interacting input parameters is modelled and calculated in the form of a market simulation, whereby it is assessed which power plants would run at which price level and whether electricity import or export would take place. The market simulation includes an economic assessment of the power plants in the market, taking into account their variable fuel and carbon costs. It does, however, not look forward and does not make an economic assessment of continued profitability and hence potential unavailability of the capacity. Also the priority dispatch of renewables is taken into consideration. Fourthly, a domestic network analysis on the basis of load flow calculations is carried out whereby it is assessed to what extent the transmission grid is capable of transporting the required load under the most critical hours that resulted from the market simulation, taking into account the N-1 criterion.
- (64) The outcome of this assessment provides insight in the instances in which the network is not able to physically accommodate the economically optimal outcomes determined by the market. Subsequently, it is assessed how and to what extent in such cases the TSOs can resolve the congestion by means of market-based congestion management. The assessment includes a simulation to establish which plants could be ramped up most economically to ensure

¹⁹ See System Analysis (in German): http://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Energie/Unternehmen_Institutionen/Versorgungssicherheit/Berichte_Fallanalysen/Systemanalyser_UeNB_1617_1819.pdf?__blob=publicationFile&v=2.

sufficient supply in the deficit areas. At the same time, an equivalent amount of capacity needs to be ramped down in the areas with excessive generation in order to restore the balance between supply and demand. This process is called re-dispatch.

- (65) To assess whether and how the need for re-dispatch capacity can be covered, the system analysis and the subsequent decision by Bundesnetzagentur first consider to which extent generators in the market are able to cover the need. According to German law, all generators are obliged to follow re-dispatch instructions by their TSO when operating in the market. If called upon, generators receive a cost-based remuneration. The demand-side response capacity contracted by the TSOs under the aforementioned ABLAV interruptibility scheme is also taken into account as part of the set of instruments the TSOs dispose of to mitigate congestion. The ABLAV capacities can be used in the context of re-dispatch.
- (66) If the quantity provided for by capacity providers (generators and demand-response operators) active in the market is not enough, the TSOs have the possibility to procure capacity from the Network Reserve. As described in recital (9) above, the Network Reserve includes, firstly, domestic capacity that is considered system relevant and does not operate commercially on the electricity market (i.e. the capacity providers will not sell power, balancing or ancillary services on the market). In case the domestic capacity is insufficient to meet the established need, the TSOs can contract the remaining capacity by way of a call for expression of interest aimed at power plants located outside Germany, but which can still contribute to alleviating the intra-German congestion.
- (67) The Commission considers the methodology of measuring generation adequacy as described in recitals (62) to (66) above, appropriate in view of the detailed and partially probabilistic assessment carried out by the TSOs. The Commission notes that this assessment deviates from the general adequacy assessment carried out by for instance ENTSO-E to determine whether or not sufficient capacity will remain available in the market to meet overall demand. In the present case, the question is not whether in absolute terms generation will continue to be sufficient to meet demand, but rather whether that generation will be located in the right places to enable the TSO to continue to manage grid congestions. The methodology applied by Germany appears suited to that end.
- (68) Germany furthermore provided data related to the use of the Network Reserve during the first years of its implementation. The size and the use of the Network Reserve have increased every year. As of 2014, German TSOs have taken re-dispatch measures during almost all hours of the year. Until 2015, the use of market-based re-dispatch was in the great majority of cases sufficient to resolve the grid congestion and it was not necessary to dispatch the plants in the Network Reserve. Since winter 2015/2016, however, market-based re-dispatch have hardly ever been sufficient to fully solve the congestion and the Network Reserve has been increasingly dispatched. In the first three years of its operation between 2011/2012 and 2014/2015, the Network Reserve was dispatched only on ten days. For the winter of 2015/2016, this number increased to 93 days, i.e. almost every day of the winter. The Commission also notes that ultimately, on the basis of the TSOs' assessment, the exact size of the Network Reserve is determined by Bundesnetzagentur. There is no legally defined reliability standard that determines a maximum degree of protection and thus limits the size of the reserve. The Commission however deems the current approach and

methodology acceptable in view of the function of the Network Reserve, which is to address the effects of congestion in the grid and not of addressing a general missing money problem that affects the overall adequacy of the generation fleet at large.

- (69) As regards point (ii) mentioned in recital (61) above, the methodology used to measure the need for the Network Reserve also demonstrates that the capacity shortage is not expected to be resolved in the short or medium term. The methodology is forward-looking and includes projections for the upcoming winter, the winter thereafter and a winter in one of the years thereafter. From the future projections, it becomes clear that the congestions are not expected to decrease without investment in additional infrastructure. Although significant reductions in the need for Network Reserve capacity are expected to be realised as of the winter of 2018/2019, these are due almost exclusively to the assumption that the German-Austrian bidding zone is expected to be split at the national border between the countries.²⁰
- (70) As regards point (iii) mentioned in recital (61) above, there is currently a lack of incentive in Germany for constructing or maintaining capacity in the right locations – in particular in south Germany, given pending investments in transmission and continued investment in renewable energy which will in future be able to flow to demand centres without congestion. At present, the renewable energy generation with low marginal costs in Northern Germany and the bidding zone configuration in Germany mean that a single low price is set for the whole of Germany and Austria, even when there is congestion that prevents power generated in the north flowing to consumers in the south. This has significantly reduced the profitability of existing conventional generation, in particular of gas-fired power plants, which has its main effects in Southern Germany. As the roll-out of renewables will continue and electricity wholesale prices are expected to remain low compared to long-term averages judging from current forward prices, there is little incentive to keep currently unprofitable capacity in the market or to build new capacity to address the present capacity shortage in Southern Germany, especially as grid expansion and enhancement projects are underway to relieve the North-South transmission bottleneck.
- (71) As regards the last issue, the Commission notes that important construction projects for the expansion of the transmission grid are being pursued with priority by the German government. A legal framework has been put in place to step up the grid development, which includes accelerated planning and approval procedures provided for by the Power Grid Expansion Act 2009 ('EnLAG') and the establishment of priority projects under the Federal Requirement Plant Act ('BBPIG') and the Grid Expansion Acceleration Act 2011 ('NABEG'). On the basis of this legal framework, a regular five-step process is applied to determine which projects need to be realised where and by when.²¹ In September 2015,

²⁰ The issue of bidding zones will be discussed in more detail in section 3.2.3 of this decision, on appropriateness. At present, Austria and Germany form a single bidding zone. If Bundesnetzagentur's assumption in the Network Reserve necessity assessment is implemented in reality, it would mean that the capacity between the German and the Austrian zone is limited and subject to an allocation process. This would lead to significant reductions of the intra-German congestion because less energy needs to be transported within the bidding zone to physically accommodate market outcomes.

²¹ An overview of the process is published by Bundesnetzagentur on its dedicated network development website: <http://www.netzausbau.de/EN/5steps/en.html>.

Bundesnetzagentur approved 63 of the 92 grid development projects proposed by the TSOs in their network expansion plans of 2014 for the year 2024. The 63 projects constitute the optimisation of 3 050 km of existing cables and the construction of 2 750 km of new cables representing a total investment cost of around EUR 33 billion, including offshore grid development but still excluding any additional costs for underground land cables.

- (72) It is the aim and expectation of the German government that investments in the grid will ultimately lead to a practically congestion-free grid, making the Network Reserve redundant.
- (73) Therefore, the Commission concludes that market forces are currently not able to ensure generation adequacy in Southern Germany so that there is a need for State intervention to address the capacity shortage in Southern Germany.

3.3.3. *Appropriateness*

- (74) As a general principle, a State aid measure is appropriate if it is designed in a way as to properly address the market failures identified. The EEAG further specifies in paragraphs (225) and (226) that in the context of aid for generation adequacy this implies that the aid should remunerate solely the service of pure availability provided by the generator and that the measure should be open and provide adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand response or storage solutions.
- (75) This section first analyses whether a network reserve is the most appropriate among the various options to address the identified adequacy concern (Section 3.3.3.1 of this decision). It then analyses whether the specific design of the Network Reserve is in line with the abovementioned specific EEAG requirements (Section 3.3.3.2 of this decision). It finally addresses the commitments of Germany that are necessary given that the Network Reserve is only appropriate as a transitional measure accompanied by market reforms (Section 3.3.3.3 of this decision).

3.3.3.1. *Appropriateness of the Network Reserve as instrument*

- (76) As concluded in Section 3.3.1 of this decision, the objective of the Network Reserve is to mitigate the effects that the intra-German grid congestions have on stability of transmission grid ensuring secure electricity supply in Southern Germany.
- (77) There are many ways to address congestion or to mitigate its effects and the German authorities have explained that they are taking various actions to overcome the existing congestion.
- (78) First, and as described in recital (71) above, Germany is working towards a structural long-term solution to the regional disparities through infrastructure investment. Several grid expansion projects are underway to eliminate the bottlenecks between Northern and Southern Germany. However, the adequacy assessment carried out by the TSOs indicates that in the coming years these investments will not be sufficient to fully remove the need for additional out-of-market re-dispatch as provided for by the Network Reserve.

- (79) Second, and in view of the fact that the investments are expected to take several years until completion, Germany is looking critically at the configuration of its bidding zone. The European market model is based on exchanges within and between bidding zones. In each bidding zone, offers to produce and consume electricity are compared, ignoring any physical limitations in the transmission network within the zone and setting a single price for the zone. If the resulting schedule of generation and demand cannot be implemented in practice because of transmission constraints, TSOs manage this congestion through various instruments, including re-dispatch and countertrading, but excluding the curtailment of cross-border capacity. Frequent recourse to re-dispatch by a TSO indicates that the market is unable to properly reward investment in the right places and hence that there is an increasing need to reconsider the bidding zone configuration.
- (80) An ill-defined bidding zone also causes problems to regional trade and competition. As the market price fails to give a signal for investment in the right place within the bidding zone, that has a distortive effect on investment signals for investment in neighbouring bidding zones and in interconnection between the congested zone and neighbouring zones. The generation investment signal is distorted because generators able to export power to south Germany are not rewarded sufficiently for their exports by an appropriate regional south German price (and those exporting to north Germany are over-rewarded). The investment signal for interconnectors is also distorted because electricity prices in south Germany are artificially low, and therefore congestion rents for imports to south Germany are artificially reduced.
- (81) The fact that, on 30 October 2016, Bundesnetzagentur instructed the German TSOs to prepare the introduction of capacity allocation mechanisms on the German-Austrian border, aiming to implement the split of the current bidding zone by 3 July 2018, demonstrates that the importance of this issue is recognised by the German authorities. Furthermore, a bidding zone review foreseen under EU law is currently carried out by ENTSO-E. The scenarios for this review include also a split of Germany into two bidding zones, along the congested north-south lines. The importance of intra-zonal congestion is thus recognized also at a European level.
- (82) Third, German TSOs undertake congestion management to ensure grid balance, such as market-based²² re-dispatching. However, as explained in recital (68) above, market-based re-dispatch does not deliver sufficient capacity to cover the capacity shortage in Southern Germany at all times. The cost-based re-dispatching in Germany also provides insufficient incentive for existing capacity to remain in the market or for new capacity providers to enter the market.
- (83) All of these measures are expected to significantly reduce congestion and therefore the need for re-dispatch capacity. For instance, the TSOs' adequacy assessment demonstrates that, if implementing according to the established

²² Note that the term 'market-based' in this context merely refers to the fact that the plants delivering this service are active in the market. It should not be understood to signify a market-based procurement of this service (by e.g. bid-ladder or tender), because the procurement foresees a cost-based remuneration only. The absence of a market-based remuneration for the delivery of re-dispatch capacity by a generator to the TSO contributes to the deteriorating business case of generators in the south of Germany. As described in recital (98) Germany will assess ways of improving its current re-dispatch policy.

deadlines, a split of the German-Austrian zone would significantly reduce the size of the Network Reserve to an estimated 1,8 GW by the winter of 2018/2019. A split inside Germany could be expected to further reduce this need. However, it is unclear at this stage whether and by when they will be able to fully remove a need for re-dispatch resources that goes beyond what the market can provide. To address this uncertainty, Germany has developed the Network Reserve as an instrument to keep existing power plants, that would otherwise close, available to the system. The power plants in the reserve are used for re-dispatch once all market-based instruments are exhausted. The Network Reserve can therefore be considered as a type of strategic reserve consisting of capacity providers that are normally kept outside the market and that are only activated once the TSO has no other means left to realise the physical flows necessary to execute the outcome of market trades.

- (84) As underlined in the Commission's Final report on the sector inquiry on capacity mechanisms published on 30 November 2016, strategic reserves are generally unsuited to address the underlying causes of a generation adequacy problem²³. They may be effective in responding to shortage situations, but they do not remedy the causes of the shortage, which may lie in a general missing funding problem, the absence of market reforms or ill-defined bidding zones. However, the report also points out that strategic reserves can be acceptable transitional instruments to address a temporary capacity shortage by ensuring that sufficient back-up capacity remains available provided they are accompanied by measures that address the cause of the adequacy problem (e.g. market reforms).
- (85) The Commission hence considers that the Network Reserve can only be an appropriate measure if it is transitional and accompanied by measures and market reforms that address the underlying causes of the adequacy concern.

3.3.3.2. Appropriateness of the specific design of the Network Reserve

- (86) Paragraph (225) EEAG provides that the aid should remunerate solely the service of pure availability provided by the generator.
- (87) In this respect, the Commission notes that the remuneration of the domestic power plants in the Network Reserve is essentially based on their fixed costs of ensuring availability if called upon.²⁴ It is only in case they are instructed to generate electricity that they receive a cost-based compensation for the actually incurred operational costs. The Commission accepts this approach, given that the plants are held outside the market and the reimbursement for generation does not affect price formation in the electricity market. As regards foreign power plants, the remuneration consists of a fixed payment for maintaining part or all of their capacity available for the Network Reserve, which is determined on the basis of a competitive selection procedure. The Commission is therefore satisfied that this is an appropriate remuneration given that it is based on availability solely.

²³ European Commission, Final Report of the Sector Inquiry on Capacity Mechanisms, 30 November 2016, SWD(2016)385, Section 6.2.2.

²⁴ See recitals (15) to (17) of this decision.

- (88) Paragraph (226) EEAG provides that the measure should be open and provide adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand response or storage solutions.
- (89) The Network Reserve does not allow for the participation of new capacity. In this context, it is important to note that strategic reserves are temporary measures which aim at maintaining an acceptable level of generation adequacy during a transitional period. In order to ensure effective competition between new and existing power plants within the Network Reserve, long term contracts for new plants would be required. Experience with market-wide mechanisms implemented or planned in other Western European Member States such as the United Kingdom²⁵ and France²⁶ shows that contract lengths of up to 15 years may be necessary. Such long term contracts for new capacity are however not reconcilable with the temporary nature of strategic reserves as they would continue to influence the market functioning once the reserve will have expired. The inclusion of new-build capacity in the Network Reserve would also not be appropriate as stimulation for investment because the plants would be held outside the market and would therefore not contribute to solving a possible missing money problem caused by insufficient investment signals. On the contrary, the inclusion of new-build capacities in a strategic reserve may even have the opposite effect of discouraging investments in the market without support.
- (90) Demand response cannot participate in the Network Reserve. As a general principle, the Commission takes the view that demand response should be allowed to participate in generation adequacy measures, including strategic reserves. An inclusive approach increases competition in the procurement of the necessary capacity. In the present case, demand response could have been an effective and valuable means of providing re-dispatch capacity. For instance, TSOs in the South of Germany could contract demand response operators and use their flexibility to reduce their consumption and thus reduce the amount of power to be transported through the grid, thus alleviating the capacity shortage and reducing the size of the Network Reserve.
- (91) The Commission notes, however, that the German legislative framework does ensure that interruptible loads are enabled and incentivised to offer their flexibility to the system, not just by reacting to price signals in the wholesale market, but also on the balancing market and, most importantly in the context of the present decision, to the TSO as capacity available for the purpose of re-dispatch. This latter option is available to demand response operators under the so-called ABLAV interruptibility scheme, as described in section 2.2 of this decision. The ABLAV-scheme enables TSOs to procure a pre-determined maximum amount of interruptible loads, which they can use as a system service to ensure system balance. ABLAV therefore has a beneficial effect on the size and need of the Network Reserve because the flexibility and re-dispatch potential they deliver will be used in a market context and thus before the Network Reserve is reverted to, as provided for by §13(1) EnWG in combination with § 7(2) Network Reserve Ordinance.

²⁵ Commission State aid case SA.35980, OJ C348, 3.10.2014,

²⁶ Commission State aid case SA.39621. The decision can be consulted on the Competition website in English: http://ec.europa.eu/competition/state_aid/cases/261326/261326_1840296_301_2.pdf.

- (92) The aforementioned final report of the sector inquiry into capacity mechanisms found that there may be valid reasons for taking a distinct approach to demand response, for instance with a view to fostering the development of a responsive demand-side as a flexible resource in the future market design.²⁷ The Commission has recognised in its State aid decision on ABLAV that the ABLAV-scheme indeed contributes to developing a responsive demand-side with short term contracts of just one week that allow the loads to develop within the scheme in order to fully participate in the market at a later stage. By procuring an appropriate²⁸ amount of demand response capacity in the context of ABLAV, it is ensured that these loads are contracted in a competitive way and at a competitive price. Moreover, by being part of the ABLAV regime, the German TSOs can make use of them for more purposes than re-dispatch only.²⁹ For these reasons and in view of the temporary nature of the Network Reserve and the fact that no competitive process takes place among the existing domestic generation facilities to become part of the Network Reserve, the Commission considers that Germany does use and support demand response with the aim to reduce the need for the Network Reserve. On this basis, the Commission deems the inclusion of demand response in the Network Reserve not required.
- (93) As regards taking into account the contribution of interconnectors, Germany's system analysis takes into account the contribution of interconnectors and sizes the Network Reserve in accordance with the established NTC-values, albeit in a passive manner, namely by simply taking over the NTC-values established by the TSOs. The Commission agrees with using the NTC-values as a general approach to determine the required size of a temporary Network Reserve, but underlines that it has not assessed, in the context of the present decision, the way in which these values have been determined by the individual TSOs. The Commission recalls that EU legislation³⁰ provides that in determining their NTC values TSOs should maximise cross-border capacity and not move internal congestions to the border or discriminate between internal and cross-border trades. The present decision is therefore without prejudice to an assessment by the Commission, using its regulatory and/or competition powers, of the current TSO practice with regard to the calculation and determination of cross-border capacity.
- (94) With regard to the participation of foreign generators to capacity mechanisms, the Commission notes that the Network Reserve provides for the inclusion of foreign generators, as an option of last resort, namely when domestic participants are not sufficient. The Commission notes that for strategic reserves in general, the participation of foreign capacities may be difficult to

²⁷ European Commission, Final Report of the Sector Inquiry on Capacity Mechanisms, 30 November 2016, SWD(2016)385, Section 6.2.3.

²⁸ Initially the capacity contracted under ABLAV was 3 GW, but this quantity was reduced to 1,5 GW because the TSOs generally did not succeed in contracting the 3 GW, making the procurement process uncompetitive. This also implies that under the Network Reserve, which sets very similar product requirements, it is unlikely that an additional amount of demand side response capacity on top of that contracted under ABLAV would have come forward.

²⁹ This holds especially for the extremely fast responding loads, which the TSOs can interrupt remotely in a matter of milliseconds.

³⁰ Regulation (EC) No 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 and repealing Regulation (EC) No 1228/2003, Annex I, Article 1.7 (OJ L 211, 14.8.2009, p. 15).

implement.³¹ Contrary to market-wide capacity mechanisms, strategic reserves are generally dispatched to cover an imminent shortage of capacity once all other possibilities including imports are exhausted. If part of the reserve is located abroad an equivalent amount of interconnection capacity would have to be available or even reserved, to ensure the power generated actually reaches the shortage area. The Commission notes that the explicit participation of foreign generators in the German Network Reserve does not require the reservation of interconnection capacity, partly because they are located in the same bidding zone (Austria) and partly because they reduce the need for Germany to export power and therewith ensure that sufficient power remains in Germany's consumption centres. It is therefore important that foreign capacity is considered as a potential participant in this case.

- (95) In light of the above the Commission accepts the use of foreign generators as provided for by the Network Reserve Ordinance as an appropriate solution for this temporary measure.

3.3.3.3. Appropriateness as a transitional measure only and commitments

- (96) As explained above, the Network Reserve is only appropriate as a transitional measure, i.e. as a temporary strategic reserve that is accompanied by market reforms. In view of its objective of addressing grid congestion of a temporary nature, the Commission deems it necessary to ensure that the Network Reserve is phased out as soon as possible. To ensure that the Network Reserve indeed remains a temporary measure, Germany has committed to four measures that will be taken in parallel to the ongoing construction works expanding the grid and the other measures described in Section 3.3.3.1 of this decision. The Commission and Germany expect these measures to reduce the future need for the Network Reserve and contribute to its gradual phasing out.
- (97) First, Germany has committed to pursuing an agreement with Austria enabling German TSOs to make use of market-based re-dispatch by Austrian generators. Despite the fact that these generators still operate in the same bidding zone as German generators, Austrian generators in the market are thus far not obliged to follow the re-dispatch instructions of German TSOs in the zone. Hence, the Austrian capacities can only deliver their re-dispatch potential to German TSOs as foreign capacities in the Network Reserve. Realising the agreement would therefore move the plants out of the Network Reserve and into the market. Whilst this does not solve the underlying congestion issue, it would significantly downsize the Network Reserve and therewith reduce the need for State aid. Germany has committed to undertaking best efforts to sign and implement the agreement with Austria as soon as possible and has indicated that in case successful, agreements with other neighbouring countries will be pursued as well. Although the envisaged split of the Austrian-German bidding zone is likely to complicate the direct participation of Austrian providers of re-dispatch for the German zone, the Commission notes that this should not prevent Germany from pursuing a meaningful agreement with Austria on cross-border re-dispatch.

³¹ European Commission, Final Report of the Sector Inquiry on Capacity Mechanisms, 30 November 2016, SWD(2016)385, Annex II.

- (98) Second, Germany has committed to assessing the possible implementation of measures to increase the efficiency of its market-based re-dispatch and load management, through *inter alia* improved cooperation between TSOs and better integration of RES and CHP.
- (99) Third, Germany has committed to taking measures aimed at making increased use of interruptible loads and thus making the demand-side more flexible, *inter alia* through the aforementioned revised and approved ABLAV interruptibility scheme, but also through the opening up of the balancing market for interruptible loads and the launch of so-called awareness programmes in the Bundesländer Baden-Württemberg and Bavaria.
- (100) Fourth, Germany has committed to constructively supporting the formal launch by ACER of ENTSO-E's review process of bidding zones as foreseen in Commission Regulation (EU) 2015/1222.³² It will also support the objective and factual evaluation of a plurality of bidding zones within Member States and commits to constructively consider the outcomes of this process.
- (101) The Commission deems this fourth commitment of particular importance in view of the significant and structural detrimental effects that an improper definition of a bidding zone can have, as described in recitals (79) and (80). Sizing bidding zones appropriately is the most constructive way of addressing network constraints. The Commission also notes that the envisaged split of the bidding zone on the Austrian border is likely to alleviate the congestion at this border, but is unlikely to remove intra-German congestion entirely. An assessment of the structural appropriateness of a single German bidding zone and its impacts on neighbouring countries is therefore warranted and the process foreseen in the CACM Regulation appears the appropriate way to proceed, given that it includes the participation of all European TSOs and energy regulators.
- (102) Combined, these four measures to which Germany has committed are expected to have a permanent reduction effect of at least 1 GW annually as of the Winter 2018/2019 and a further 500 MW as of the Winter 2019/2020. The Commission furthermore notes that in case the split of the Austrian-German bidding zone goes ahead as planned by Bundesnetzagentur this is expected to have a significant effect on the Network Reserve, given that in its assessment on the need for the Network Reserve of 4 April 2016, Bundesnetzagentur concluded that the re-dispatch need – excluding the said commitments but including the split of the bidding zone between Austria and Germany – would amount to 1,9 GW for the winter of 2018/2019.
- (103) Germany has committed to reporting annually to the Commission on 2 May of each of the coming years its progress in implementing these measures, as well as their impact on the reduction of the size of the Network Reserve. In each annual report, Germany has also committed to reporting on the expected size of the Network Reserve by 2019/2020 and the progress made in solving congestions by way of network investments. In case the annual reduction of 1,5 GW as of the Winter 2019/2020 is not reached or expected to not be reached on the basis

³² Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (OJ L 197, 24.7.2015, p. 24).

of one of the annual progress reports, Germany has committed to taking additional measures to reach the target.

- (104) In addition, the Commission takes note of the fact that Germany will be implementing, as part of the same legislative process as the review of the Network Reserve, a number of improvements to its market design which are likely to result in more efficient market functioning. The measures include the introduction of scarcity pricing and the improvement of short term markets. The Commission furthermore notes that Germany intends to introduce a regional component in the EEG. This is expected to contribute to the declining need of the Network Reserve by way of limiting the development of RES in congested areas. When implemented, this development is estimated to lead to a reduction of up to 2 GW of capacity in the Network Reserve.
- (105) Since the Network Reserve is as explained above only appropriate as a transitional mechanism and in view of the uncertainty of the development of the grid congestion, the Commission considers the Network Reserve appropriate only up to and including the winter of 2019/2020, i.e. until 30 June 2020. The Commission notes that in view of the actions Germany will undertake to reduce the size of the Network Reserve and particularly in view of the envisaged split of the Austrian-German bidding zone and participation in the ongoing bidding zone review process, it is unlikely that any need for a Network Reserve will exist beyond that date. Should Germany nevertheless wish to prolong the use of the Network Reserve beyond that date, it will have to re-notify the measure.

3.3.4. Incentive effect

- (106) 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 activity which they would not carry out without the aid or which they would carry out in a restricted or different manner. The EEAG has laid down more specific guidance as to the interpretation of this criterion in Section 3.2.4, namely that the measure should induce the beneficiary of the aid to change its behaviour to improve the functioning of a secure, affordable and sustainable energy market, a change in behaviour which it would not undertake without the aid.
- (107) The Commission recalls that the large majority of the capacities in the Network Reserve are existing power plants that had signalled their intention to close down either temporarily or definitively, but that have been prevented from doing so. Hence, without the Network Reserve these plants would not have been available for generation to the TSOs.
- (108) Also the behaviour of the foreign generators participating in the reserve has changed, because in exchange for remuneration they now keep part or all of their generation capacity available to the German TSOs.
- (109) Therefore, the Network Reserve has an incentive effect that changes the behaviour of its beneficiaries.

3.3.5. Proportionality of the aid

- (110) The aid amount is proportionate if it is limited to the minimum needed to achieve the objective pursued. The EEAG specify this requirement for

generation adequacy measures in paragraphs (228) to (231), which aim to ensure that beneficiaries do not earn more than a reasonable rate of return and that windfall profits are excluded.

- (111) The notified measure provides for a competitive tender procedure with regard to the selection of foreign capacities. For those plants, the remuneration can therefore be considered proportionate.
- (112) For domestic generators, however, bilateral negotiations take place between Bundesnetzagentur and the generators on Bundesnetzagentur's list of power plants intending to leave the market. The contracts that are the outcome of these negotiations determine the remuneration these generators will receive, based on the cost categories laid down in the Network Reserve Ordinance.
- (113) The German authorities put forward that this approach, that does not include a competitive allocation procedure, is appropriate given that there are not enough system relevant plants that have been prevented from closing down to fill the Network Reserve. A competitive allocation procedure would therefore risk leading to a non-competitive outcome with excessive remuneration.
- (114) The Commission agrees with this approach and notes that the remuneration received by the German power plants that form part of the Network Reserve will be based on actual costs and limited to the cost categories as described in Section 2.2 of this decision. The negotiations do not provide the opportunity to go beyond that remuneration, but are rather intended to ensure a level of remuneration that is truly reflective of the characteristics of the individual plant concerned. On this basis it can be expected that, despite the absence of a competitive procedure, the remuneration that will be received by the operators in the Network Reserve is proportionate.
- (115) With regard to the requirement of paragraph (230) EEAG the Commission notes that windfall profits are excluded insofar as the mechanism only reimburses fixed costs for being available and variable costs whenever the reserve is dispatched. With regard to the foreign operators, the amount of capacity required is very small in comparison to the potential capacity on offer in the market, so that it can be assumed that the competitive selection procedure ensures an efficient price.
- (116) With regard to the requirement of paragraph (231) EEAG the Commission notes that for the selection of capacities in strategic reserves it cannot be expected that the price reaches zero, because it is generally the case that in order to become part of the reserve the plants have to leave the market but nevertheless stay available in case of need. A proper remuneration for plants in a strategic reserve is therefore related to the fixed and variable costs the units make.
- (117) The Commission concludes that the aid amount (remuneration mechanism for participants in the Network Reserve) is proportionate.

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

- (118) The negative effects of the Network Reserve 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), which underline the need for broad participation in the scheme and the avoidance of market undermining effects of the measure, for instance by strengthening dominance or affecting investment decisions.

- (119) Paragraph (232) (a) to (c) EEAG underlines the importance of ensuring competitive pressure in selecting the capacities through a sufficiently broad participation and wide eligibility criteria. In Section 3.3.3.2 of this decision the Commission assessed the eligibility of different technologies, demand response and foreign capacity for the Network Reserve.
- (120) Paragraph (232) (d) EEAG aims to ensure that regulatory distortions in the energy market are removed. The Commission notes that Germany is undertaking, in parallel to the revision of the Network Reserve and in the context of its new market design described in Section 2.1 of this decision, a number of measures designed to take away the market distortions referred to by this article.
- (121) Paragraph (233) (a), (b) and (c) EEAG aim to ensure that the negative effects of a capacity mechanism on market functioning are kept to a minimum, which in general means that the mechanism should be designed such that it leaves the price and investment signals of the wholesale market, or 'energy-only market', intact.
- (122) The Commission notes that the Network Reserve leaves the market outcomes intact as the reserve is dispatched only after market closure. In fact, it is there not only to ensure secure supplies throughout the bidding zone, but also as a means to allow the domestic market to work until gate closure time as if no congestions in the zone existed. The Network Reserve, by keeping available reserve capacities, allows market participants anywhere in the zone to trust that their trades will be executed and thus keeps the spot market price signal untouched.
- (123) With regard to the undue strengthening of market dominance (paragraph 233 (d) EEAG), the Commission is not concerned that the Network Reserve would have such effect. As the capacities in the reserves are largely held outside the market, the highly competitive situation on the wholesale market is not affected. Moreover, the cost-based remuneration of the network reserve ensures that the beneficiaries do not benefit from a competitive advantage compared to other capacity providers outside the Network Reserve.
- (124) Finally, with regard to giving preference to low-carbon generators in case of equivalent technical and economic parameters (paragraph 233 (e) EEAG), the Commission notes that the Network Reserve Ordinance does not foresee rules TSOs need to adhere to in selecting their loads. However, the Commission deems this approach acceptable in view of the fact that location is the key requirement that leads the TSO to determine whether or not a plant can or is obliged to participate in the Network Reserve. Furthermore, the Commission notes that for domestic generators such a rule would at present in any event be superfluous in view of the fact that all generators prevented from leaving the market are signed up to the Network Reserve.

- (125) The Commission concludes that the impact the Network Reserve has on trade and competition is sufficiently outweighed by the common objective pursued.

3.3.7. Transparency of the aid

- (126) The final common assessment principle under Section 3.2.7 EEAG is transparency. For individual aid awards of EUR 500 000 or more, Member States must publish on a comprehensive State aid website the full text of the aid scheme and its implementing provisions (or a link to it), the identity of the granting authority, the identity of the individual beneficiaries, the form and amount of aid granted to each beneficiary, the date of the granting, the type of undertaking, the region in which the beneficiary is located and the principal economic sector in which the beneficiary has its activities.
- (127) The German authorities will apply the transparency conditions laid down in Section 3.2.7 EEAG insofar as applicable to the aid granted under the Network Reserve.

4. CONCLUSION

- (128) The Commission has accordingly decided not to raise objections to the Network Reserve introduced in German legislation on 26 July 2016, as a transitional measure until 30 June 2020, on the grounds that it is compatible with the internal market in accordance with Article 107(3)(c) TFEU.

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

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Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission