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**Subject: State Aid SA.49522 (2017/N) – Germany
- Reductions on EEG-surcharges for self-supply of electricity in high energy efficient cogeneration installations that entered into operation after July 2014**

Sir,

1. PROCEDURE: NOTIFICATION, CORRESPONDENCE

- (1) The German authorities have notified by electronic notification on 5 July 2017 a modification of the reductions of the so-called EEG-surcharge granted for self-consumption.
- (2) On 9 November 2017, the case was split. The reductions granted for self-consumption installations that entered into operation before 1 August 2014 and for renewable self-consumption installations have been examined under case SA.46526 while the reductions for installations on EEG-surcharges for self-supply of electricity in high energy efficient cogeneration installations that do not qualify as existing installations have been examined under the present case SA.49522.
- (3) The reductions and exemptions for self-consumption installations that entered into operation before 1 August 2014 and for renewable self-consumption installations were approved by the Commission by decision of 19 December 2017 in State aid file SA.46526 (2017/N) - Reductions on EEG-surcharges for self-consumption (the "2017 EEG Commission Decision").

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- (4) The measures notified under procedure SA.49522, i.e. the reductions of the EEG-surcharge for self-consumption in cogeneration installations modifies a support scheme granting aid to self-consumption in the form of reductions of the EEG-surcharge which had been approved by the Commission by decision of 23 July 2014 in State aid file SA.38632 (2014/N) – Germany - EEG 2014 – Reform of the Renewable Energy Law¹ (the "2014 EEG Commission Decision") until 31 December 2017.
- (5) Germany submitted additional information on 3 August 2017, 10 April 2018 and between May 2018 and July 2018. The last submitted information dates from 13 July 2018.
- (6) Germany has notified the measure for legal certainty and considers that the reductions do not entail State resources as they are financed through private means only.
- (7) On 11 July 2018 Germany has waived its right under Article 342 TFEU in conjunction with Article 3 of Regulation (EEC) No 1/1958 to have the decision in both procedures SA.44679 and SA.45461 adopted in German and agreed that the decision be adopted and notified in English.

2. DETAILED DESCRIPTION OF THE NOTIFIED MEASURE

2.1. General description of the measure and legal basis

- (8) The Erneuerbare-Energien-Gesetz ("EEG-Act")² is part of the measures put in place by Germany in order to have a more climate friendly energy supply in Germany. More specifically, it aims at ensuring that the share of electricity from renewable energy sources ("RES-E") in the total electricity supplied to German final customers rises to 40-45 % by 2025 and to 55-60 % by 2035. At the same time, it aims at achieving an affordable and secure supply of electricity for private households and industry.
- (9) The support measures (feed-in tariffs when the electricity is sold to the network operator and premiums when the electricity is sold on the market³) set up under the EEG-Act are paid out by network operators to producers of renewable electricity. The extra costs resulting from those support measures are compensated to network operators through a surcharge on electricity consumption called the "EEG Umlage" ("EEG surcharge").
- (10) In principle, the EEG surcharge is a uniform surcharge per kWh of electricity consumed. However, certain consumers benefit from reductions and exemptions. Reductions are granted to electro-intensive users⁴, railways⁵ and to self-supply⁶.)

¹ OJ C 325, 2.10.2015, p. 1.

² Das Gesetz für den Ausbau erneuerbarer Energien (Erneuerbare-Energien-Gesetz), BGBl. I 2014, p. 1066. Except when otherwise specified, references to the EEG-Act refer to the EEG-Act in force at the time of the adoption of this Decision.

³ See recital 12 from Commission's decision of 23 July 2014 in State aid file SA.38632 (2014/N) - Germany - EEG 2014 - Reform of the Renewable Energy Law

⁴ These reductions have been approved by Commission decision of 23 July 2014 in State aid file SA.38632 (2014/N), see footnote 2.

The present decision concerns only the reductions and exemptions to self-supply of electricity in cogeneration installations (also referred to as "CHP plants", i.e. combined heat and power plants) that entered into operation for self-supply by the current operator of the installation after July 2014 and that cannot claim to be a so-called "Bestandsanlage" ("Existing installation") pursuant to the transitory provision of § 61c (2) EEG-Act (see SA.46526 (2017/N) para. 32 (they are referred to as "new high energy efficient CHP installations" or "new high energy efficient cogeneration installations").

- (11) The notified modifications will be introduced by law. Germany has submitted the draft text of the articles of the EEG to be modified. The planned modifications would become § 61c and §61d of the EEG-Act while the current §61c to §61g would be renumbered §61e to §61i of the EEG-Act.

2.2. Background

- (12) Under the EEG-Act 2012⁷ (in force between 1 January 2012 and 31 July 2014) no surcharge was due on self-supplied electricity.
- (13) In 2014, the German legislator concluded that this way of financing the support to the production of renewable electricity was not adequate anymore. Indeed, the EEG-surcharge had been increasing so much in the last years prior to 2014 that self-supply had become more interesting in order to avoid paying the EEG surcharge.
- (14) The EEG 2014⁸ therefore provided that producers of electricity using the electricity produced by installations operated by them for their own consumption (§61 EEG 2014) would also be subject to the EEG surcharge.
- (15) However, the EEG 2014 also provided that electricity produced by self-consumers who were supplying themselves entirely with electricity from highly efficient CHP plants having a monthly or annual capacity factor ("Jahresnutzungsgrad"⁹) of 70% would pay a reduced surcharge of 30% (August 2014 – December 2015), 35% (2016) and 40% (as of 2017). Those reductions were part of the adjustment plan approved by the Commission in its 2014 EEG Commission Decision based on point 194 of the EEAG and Germany's commitment to re-notify the reductions

⁵ These reductions have been approved by Commission decision of 25 November 2014 in State aid file SA.38728 (2014/N) - Germany - EEG 2014 - Reform of the Renewable Energy Law - Besondere Ausgleichsregelung für Schienenbahnen.

⁶ The reductions and exemptions to self-consumption with the exception of reductions for self-supply of electricity in cogeneration installations that entered into operation after July 2014 have been approved by Commission decision of 19 December 2017 in State aid file SA.46526 (2017/N).

⁷ Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare-Energien-Gesetz-EEG), as amended by the law of 28 July 2011 for the Modernization of the legal Framework for the Support of Electricity Generation from renewable Energy Sources „Gesetz zur Neuregelung des Rechtsrahmens für die Förderung der Stromerzeugung aus erneuerbaren Energien", BGBl. I 2011, p. 1634.

⁸ The EEG 2014 was adopted by the Law of 21 July 2014 for the Deployment of Renewable Energies (Gesetz für den Ausbau erneuerbarer Energien), BGBl. I 2014, p. 1066..

⁹ According to §3 point 3 of the Energiesteuerengesetz (law on energy taxation) referred to in the EEG, the monthly or annual capacity factor is the ratio between, on the one hand, the sum of the mechanical and thermal energy produced within a month/ a year (output) and, on the other hand, the energy supplied from energy products (input) within the same period of time.

granted to new CHP plants for the period after 2017 prior to their implementation and ensure compliance with the EEAG.

2.3. The EEG surcharge

- (16) When the network operator paying the support described under recital (9) of this Decision is a distribution system operator, he is compensated by the transmission system operator ("TSO") to which the distribution system is connected. As a result, the financial burden resulting from the support is concentrated at the level of the TSOs. This burden has to be spread between TSOs so that ultimately every TSO bears the same financial burden in proportion to the electricity delivered to the final consumers in each area served by the individual TSO in the previous calendar year (§58 EEG-Act).
- (17) Each TSO has then the right and the obligation to request the payment of the EEG surcharge from electricity suppliers, from final consumers that are supplied with electricity by a third party (but which does not qualify as electricity supplier¹⁰), from producers of electricity using the electricity produced by installations operated by them for their own consumption ("self-generation" "Eigenversorgung") (§60 and §61 EEG-Act) and from electro-intensive users (§60a EEG-Act). For the application of the EEG-Act (in particular the determination and the payment of the EEG surcharge), final consumers that are supplied with electricity by a third party (but which does not qualify as electricity supplier) and self-suppliers are considered as electricity supplier (§61 (3) EEG-Act).
- (18) The EEG surcharge is imposed on electricity consumption and expressed in kWh. It is a uniform charge across Germany. Its level is determined each year jointly by the TSOs based on a detailed methodology set out in the Implementing decree to the EEG ("Verordnung zur Durchführung des Erneuerbare-Energien-Gesetzes und des Windenergie-auf-See-Gesetzes" referred to as "Erneuerbare-Energien-Verordnung – EEV") and in the decree implementing the EEV ("Verordnung zur Ausführung der Erneuerbare-Energien-Verordnung" that in Germany is referred to as "Erneuerbare-Energien-Ausführungsverordnung – EEAV"). In particular §3 EEV and §6 EEAV list all the costs and revenues that TSOs have to take into account for the determination of the EEG surcharge.
- (19) As a result of this methodology, the TSOs jointly determine each year the EEG-surcharge for year X+1 on the basis of the financial needs forecasted for year X+1, the forecasted consumption of electricity, the difference between the forecasted expenses and revenues and the actual expenses and revenues of the previous period be they surpluses or deficits (§3 EEV). In addition, a series of revenues and costs linked to the management of the EEG-surcharge have to be taken into account for its calculation (liquidity reserve, interest rate on revenues and deficits, registration fee to the spot market, etc.). The forecasted financial needs are themselves a function of the forecasted feed-in tariffs and premium payments to RES-E operators and the forecasted revenues from the sale of the RES-E on the spot market.

¹⁰ Electricity supplier is defined as any natural or legal person supplying end consumers with electricity (§3(20) EEG-Act). End consumers are defined as any natural or legal person consuming electricity (§3 (33) EEG-Act).

- (20) TSOs are subject to a certain number of publication obligations and are subject to the monitoring of the regulator (the so-called "Bundesnetzagentur", "BNetzA"). They are also subject to particular obligations in respect of the way they sell renewable electricity that they have purchased from renewable electricity producers eligible for feed-in tariffs (§1, §2, §7 and §8 EEAV).
- (21) They have to keep all transactions linked to the EEG separate from the rest of their activities. They are obliged to keep separate bookkeeping for all financial flows related to the EEG, and the expenses and revenues linked to the EEG must be made on a separate account (§5 EEAV).
- (22) TSOs are under the obligation to publish (§77 EEG-Act), on a common website designated as "EEG-account", monthly aggregated revenues resulting from the sale of RES-E on the spot market and from the EEG-surcharge and aggregated costs (compensation to DSOs and other costs related to the management of the system). They are also under the obligation to publish in advance the forecasted EEG-surcharge (§5 EEAV).
- (23) TSOs have to transmit to the BNetzA detailed data relating to the establishment of the EEG-surcharge. In particular, they have to provide data related to the different revenues and expenditures entries that enter into the calculation of the EEG-surcharge (§4 EEAV).
- (24) The BNetzA has been entrusted with various monitoring tasks (§85 EEG-Act). It has *inter alia* to monitor that:
- TSOs comply with the provisions of the EEV,
 - TSOs properly determine, set and publish the EEG surcharge,
 - TSOs properly levy and collect the EEG-surcharge,
 - only the feed-in tariffs and premiums as set out in §19 to 55a EEAV are paid,
 - the information that is due by the different operators to the BNetzA is indeed submitted to it,
 - the information that TSOs have to publish is indeed published,
 - the way the EEG-electricity can be shown on the electricity bill is indicated in accordance with §78 EEG-Act.
- (25) The BNetzA can require various information related to the payments made to renewable electricity operators and related to the EEG surcharge (§76 EEG-Act, §4 and §5 EEAV). The BNetzA can also require information from electricity suppliers, self-suppliers and some other end-consumers on electricity production and consumption (§76 EEG-Act). The BNetzA also has audit powers towards RES-E operators, electricity suppliers and network operators and can ask for information and organize inspections at their premises (§85 (3) EEG-Act read in conjunction with §69 of the Law on the organization of the energy markets, "Energiewirtschaftsgesetz").

- (26) The BNetzA is empowered to modify the list of costs or revenues that can be taken into account for the calculation of the EEG surcharge and can modify information obligation of TSOs (§13 EEG).

2.4. Reduced EEG-surcharge for self-supply of electricity from new high energy efficient cogeneration installations

- (27) As mentioned above, network operators have the right and the obligation (§61 EEG-Act) to require the payment of the EEG-surcharge from self-suppliers and the rules of the EEG-Act applicable to electricity suppliers are mutatis mutandis applicable to these self-suppliers.
- (28) Self-supply is defined as referring to the situation in which a natural or legal person consumes the electricity that it has itself produced. This person must be in direct geographical relationship with the electricity producing installation and must operate the installation itself. The electricity must not transit through a network. A network is defined as the totality of all technical installations that are linked to each other and that serve for the use, transmission and distributions of electricity to the public.
- (29) The notified measure provides that electricity produced by self-suppliers who were supplying themselves entirely with electricity from highly efficient CHP plants is subject to a reduced EEG-surcharge rate when certain conditions are fulfilled. As a result, the EEG surcharge collected by the network operators from the self-suppliers concerned will be directly reduced to the rate set by the EEG for this category of self-supplier. The reduced EEG-surcharge rates are described below.

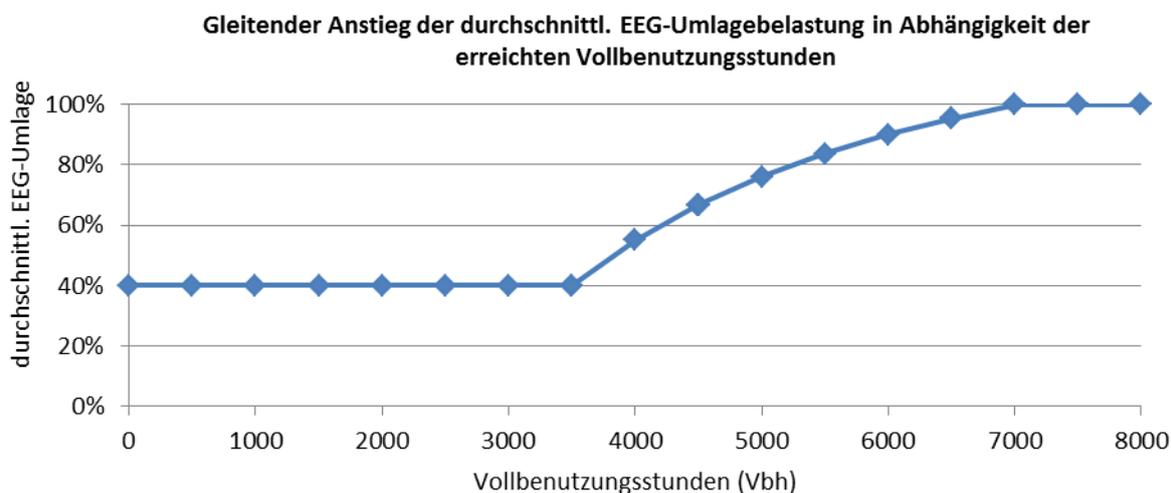
2.4.1. Rule applicable from 1 January 2018 onwards to new high energy efficient cogeneration installations

- (30) The notified measure provides that the EEG-surcharge will be reduced by 60% for self-supplied electricity produced in a CHP (that does not qualify as existing installation) if:
1. the CHP installation is operated exclusively based on gaseous fuels. This condition does not apply to installations which started operation before 31 December 2017. Germany confirmed also in this regard that the support is not leading to a circumvention of the waste hierarchy.
 2. the CHP installation is highly efficient within the meaning of Article 53a (6) 5th sentence of the Energy Taxation Law (designated as "Energiesteuergesetz" in Germany). According to this latter provision a CHP plant qualifies as high efficient when it fulfils the criteria of Annex II to Directive 2012/27/EU of 25 October 2012 on Energy Efficiency¹¹.
 3. the CHP installation has reached a monthly or annual capacity factor of 70% in the month or the year for which it applies for a reduction.

¹¹ OJ L 315 of 14.11.2012, p. 1.

- (31) If these conditions are fulfilled, the following categories of installations can benefit from the 60% reduction:
- a) installations with an installed electrical capacity inferior or equal to 1MW;
 - b) installations with an installed electrical capacity superior to 10 MW;
- (32) New high energy efficient cogeneration installations that entered into operation after 1 January 2018 and having an installed capacity superior to 1MWel and inferior or equal to 10MWel can benefit from a 60% reduction on the first 3500 yearly full load hours for self-consumption only. Installations of that installed capacity and having full load hour in excess of 3500 hours are subject to the claw-back mechanism described below under recitals (34) - (36) of this Decision).
- (33) Full load hours for self-consumption are determined as the quotient of the self-consumed electricity during a calendar year and the installed electrical capacity of the CHP-installation.
- (34) When the installation's yearly full load hours exceed the 3500 threshold, the reduction obtained on the first 3500 hours of full load will be cancelled for the number of full load hours that exceed 3500 (this mechanism is hereinafter referred to as "claw-back mechanism").
- (35) This calculation method mathematically corresponds to the application of a 40% surcharge for the first 3500 full load hours of use and to the application of 160% surcharge for the full load hours exceeding the 3500 thresholds but up to 7000. The full EEG-surcharge applies on hours of full load exceeding the threshold of 7000 (cf. Figure 1 below). As a result, the average EEG surcharge rate for installations exceeding 3500 of full load hours progressively increases from 40% to 100% and the reduction will thus decrease from 60% to zero.
- (36) For instance, for an installation having 5000 full load hours, it will pay 40% of the surcharge up to 3500 hours and 160% surcharge from the 3501st to 5000th full load hour. In this way, the 60% reduction will be cancelled for 1500 hours, i.e. the difference between 5000 and 3500. On average, the undertaking will have paid an EEG surcharge of 76% (and have benefitted from a 24% reduction).

Figure 1 Progressive increase of average EEG-surcharge rate in function of full load hours



- (37) Germany further indicated that smaller installations (below 1 MWel) are mainly used in the service sector (hotels, hospitals but also schools) while larger installations are mainly found in the industry, for example in the automobile and automotive sectors (in particular in the range 1 to 10 MWel). Installations of more than 10 MWel tend to be found in electro-intensive industries (paper, chemical industry).

2.4.2. Specific rule applicable to electricity self-supplied in 2018 by new high energy efficient CHP installations that entered into operation after 31st July 2014 and before 1st January 2018

- (38) New high energy efficient cogeneration installations that entered operation after 31st July 2014 and before 1st January 2018 with an installed capacity superior to 1 MWel and inferior or equal to 10 MWel can benefit from a reduced surcharge of 40% for the first 3500 yearly full load hours.
- (39) For the electricity consumed after 31st December 2017 and before 1st January 2019, the full EEG surcharge will apply beyond the threshold of 3500 full load hours.
- (40) Save for installations that entered into operation in 2016 or 2017 (see sections 2.4.3 and 2.4.4 below), the electricity self-supplied with the concerned CHP installation will as of the 1st January 2019 be subject to the reduction system and claw back mechanism described under recitals (32) - (36) of this Decision if the installed capacity of the cogeneration installation is between 1 MWel and 10 MWel and if the operator of the installation is not active in one of the sectors listed on List 1 of Annex 4 to the EEG-Act.

2.4.3. Reductions applicable for the electricity self-supplied in 2019 by new high energy efficient CHP installations that entered into operation in 2016 or 2017

- (41) New high energy efficient cogeneration installations that entered operation after 31st December 2015 and before 1st January 2018 with an installed capacity superior to 1MWel and inferior or equal to 10MWel can benefit from a reduced surcharge of 40% for the first 3500 yearly full hours of use.
- (42) For the electricity consumed after 31st December 2017 and before 1st January 2020, the full EEG surcharge will apply beyond the threshold of 3500 full hours of use.
- (43) Save for installations that entered into operation in 2017 (see section 2.4.4. below), the electricity self-supplied with the concerned CHP installation will as of the 1st January 2020 be subject to the reduction system and claw-back mechanism described under recitals (32) - (36) of this Decision if the installed capacity of the cogeneration installation is between 1 MWel and 10 MWel and if the operator of the installation is not active in one of the sectors listed on List 1 of Annex 4 to the EEG-Act.

2.4.4. Reductions applicable for the electricity self-supplied in 2020 by new high energy efficient CHP installations that entered into operation in 2017

- (44) New high energy efficient cogeneration installations that entered operation after 31st December 2016 and before 1st January 2018 with an installed capacity

superior to 1 MWe and inferior or equal to 10 MWe can benefit from a reduced surcharge of 40% for the first 3500 yearly full hours of use.

- (45) For the electricity consumed after 31st December 2017 and before 1st January 2021, the full EEG surcharge will apply beyond the threshold of 3500 full hours of use.
- (46) The electricity self-supplied with the concerned CHP installation will as of the 1st January 2021 be subject to the reduction system and claw back mechanism described under recitals (32) - (36) of this Decision if the installed capacity of the cogeneration installation is between 1 MWe and 10 MWe and if the operator of the installation is not active in one of the sectors listed on List 1 of Annex 4 to the EEG-Act.

2.4.5. Rules applicable to new high energy efficient CHP installations used by undertakings active in electro-intensive sectors

- (47) The notified measure provides that the EEG-surcharge will also be reduced by 60% for self-supplied electricity produced in a CHP (for all sizes of installation) :
 - a) The installation is used for the self-supply of undertakings active in one of the electro-intensive sectors listed in List 1 of annex 4 of the EEG-Act.
 - b) The CHP installation is operated exclusively based on gaseous fuels. This condition does not apply to installations which started operation before 31 December 2017.
 - c) The CHP installation is highly efficient within the meaning of Article 53 (6) 5th sentence of the Energy Taxation Law.
 - d) The CHP installation has reached a monthly or annual capacity factor of 70% in the month or the year for which it applies for a reduction.
- (48) Germany has stressed that electro-intensive firms pay lower prices for electricity from the network, due to their high electrical demand as well as several tax and levy reductions, in particular when they are eligible to obtain EEG-surcharge reductions under the special compensation scheme ("Besondere Ausgleichsregelung" – BesAR¹²) enshrined in §63 of the EEG-Act. As a result, the use of self-supplied electricity by electro-intensive firm would lead to lower rates of return given that by producing their own heat and electricity they do not make much savings on their energy bills. At the same time, Germany explained that undertakings which are active in electro-intensive sectors (List 1 of Annex 4 to the EEG-Act) and produce their own heat and electricity are in a specific situation compared to electro-intensive users supplying themselves with electricity from the grid and electro-intensive undertakings producing their own electricity but without resorting to cogeneration. Germany explained that in theory self-suppliers using CHP installations can also apply for reduced EEG-surcharges under the BesAR. However, those self-suppliers although active in the same sector as electro-

¹² Under this special compensation scheme reductions of the EEG-surcharge are granted to electro-intensive undertakings. It has been approved by the Commission in the 2014 EEG Commission Decision.

intensive users procuring their electricity from the grid will not necessarily reach the 14% electro-intensity required under §64 of the EEG-Act. This is due to the fact that in those sectors, CHP installations will be constructed when electricity demand is combined with a significant need for heat, leading often to the integration of different business branches in a single undertaking. Germany stressed that these interdependencies result from the constraint that in CHP plant electricity is produced only when also heat is needed and produced. On its turn, this integration will often lead to electro-intensities that are slightly below 14%. Conversely, Germany indicated that those synergies will also imply that the EEG-reduction needed to trigger the investment into CHP installations and to make the EEG-surcharge burden sustainable to the undertaking concerned does not need to reach 85% as in the case of electro-intensive companies procuring electricity from the grid. On this basis, the notified scheme (future §61c, paragraph 3 of the EEG-Act) foresees a 60% reduction of the EEG-surcharge for electro-intensive firms using in-house CHP installations and which are active in sectors defined in annex 4, list 1 from the EEG, corresponding to annex 3 of the EEAG.

2.5. Balancing responsibility

- (49) Installations having an installed capacity exceeding 100 kW are under the obligation to either consume the electricity that they produce or directly sell it on the market (§ 4 (1) of the Cogeneration Law (the "KWKG 2016"))¹³. They are in that context also subject to standard balancing responsibilities. Generally, they sell their electricity to aggregators; in that case the balancing responsibility is transferred to the aggregator.

2.6. Production costs

- (50) Germany has submitted Levelized Cost Of Electricity (LCOE) calculations for the production of cogenerated electricity in a series of representative installations for the industry (construction of machines, car manufacturing, car repair, paper and chemistry sector). All calculations concern gas-fired CHP installations.
- (51) Germany has calculated the LCOE based on the following formula:

$$LCOE = \frac{I_0 + \sum_{t=1}^n \frac{A_t}{(1+i)^t}}{\sum_{t=1}^n \frac{M_{t,therm}}{(1+i)^t}}$$

Where:

LCOE	Levelized cost of electricity
I_0	Investment in Euro
A_t	Annual total costs in Euro in the year t
$M_{t,therm}$	Volume of electricity produced in the concerned year in kWh

¹³ Gesetz für Erhaltung, die Modernisierung und den Ausbau der Kraft-Wärme-Kopplung. The Law was entirely recast on 21 December 2015 by the Law on the Recasting of the Cogeneration Law (Gesetz zur Neuregelung des Kraft-Wärme-Kopplungsgesetzes), BGBl I 2015, p. 2498 and again on 22 December 2016 by the Law on the Recasting of the Cogeneration Law und the Provisions on Self Supply in the EEG 2017 (Gesetz zur Änderung der Bestimmungen zur Stromerzeugung aus Kraft-Wärme-Kopplung und zur Eigenversorgung), BGBl I 2016, p. 3106.

i	Discount factor in %
n	Economic lifetime of the installation in years
t	Year considered during the economic lifetime

- (52) For each calculation, Germany has also provided: the type of CHP installation used, the number of full load hours, the rate at which the installation is used for self-consumption¹⁴, the sector concerned, the typical investment costs, the energy conversion efficiency rate, the heat and electricity outputs, and the fixed and variable operating costs. For the variable operating costs, Germany has further submitted the projected electricity prices (both electricity price obtained when the electricity is injected into the grid and electricity price that is saved when the electricity generated is self-consumed), and the compensation for avoided network fees¹⁵. The LCOE calculations reproduced in Table 2 below also take into account reduced energy taxes and costs of CO₂ emission allowances, where the installation is under the obligation to buy CO₂ emission allowances, and heat revenues. As far as heat revenues are concerned, as the heat is self-consumed, Germany has deducted from costs (as heat revenue) the avoided heating costs since they would have had to buy or produce the heat in a boiler, had they not cogenerated it. Finally, in order to determine the rate of return obtained with the reductions, where applicable, Germany has also taken into account the direct grant that certain CHP installations can obtain under the KWKG 2016.

¹⁴ Electricity produced in CHP installations run by households, service providers and the industry is generally partially used for auto-consumption and partially injected into the grid.

¹⁵ In case of decentralised production connected to the distribution network, transmission costs and transformation network costs are avoided when the decentralised production is consumed directly within the network to which the decentralised production unit is connected. In those situation, the decentralised producer obtains a compensation (§ 18 of the Ordinance on electricity network fees).

- (53) The tables below represent the assumptions used in terms of electricity prices for final consumers of different categories of consumers:

Table 1: Electricity prices for end-consumers in cent (2015)/kWh (observed 2015-2016 and projected 2017-2040)									
Sector	Consumption	2015	2016	2017	2018	2019	2020	2030	2040
Households (incl. VAT)	3500 kWh/year	28.4	28.2	28.5	28.3	29.5	29.0	29.7	30.6
Services (excl. VAT)	50 MWh per year	20.3	20.7	21.8	21.7	22.5	22.3	22.8	23.2
Retail sector (excl. VAT)	200 MWh per year	18.5	18.8	19.9	19.8	20.6	20.4	20.8	21.3
Hospitals (incl. VAT)	1000 MWh per year	18.4	18.6	19.6	19.5	20.5	20.3	20.4	20.4
Small businesses (excl. VAT)	50 MWh per year	19.7	20.0	21.1	21.0	21.8	21.6	22.1	22.5
Industry – SMEs (excl. VAT)	200 MWh per year	18.0	18.3	19.2	19.1	20.1	19.9	20.3	20.8
Industry – machine construction (excl. VAT)	1 000 MWh per year	15.3	15.3	15.4	15.4	16.4	16.2	16.3	16.3
Industry – automotive supplier (excl. VAT)	10 000 MWh per year	14.1	14.0	14.2	14.2	15.2	14.9	15.1	15.0
Industry – car factory (excl. VAT)	100 000 MWh per year	12.8	12.8	13.0	13.0	13.9	13.7	13.7	13.5
Energy-intensive Industry – chemistry (excl. VAT)	100 000 MWh per year	4.0	3.6	3.7	3.5	3.3	4.1	7.5	8.8
Energy-intensive Industry – steel (excl. VAT)	1 000 000 MWh per year	3.8	3.4	3.5	3.3	3.1	3.9	7.2	8.5

- (54) The following table summarises the LCOE calculations. They include the rate of return of the investment taking into account the reduced EEG-surcharges and – if applicable the support under the CHP law¹⁶ when the installation is eligible for such support. They also contain a comparison with the levelized average market price (average obtained from the market price of the energy injected into the grid and the market price of the electricity that would have had to be paid if the quantity of self-supplied electricity had instead been purchased from a supplier).

Sector	Installation type	El capacity (MW)	Full-load hours (h/a)	Self-consumption rate	LCOE (cent2015/kWh)	Average electricity price for end consumers (cent2015/kWh)	Rate of return with a 40% EEG-surcharge and direct grant under KWKG 2016
hotel	BHKW 3	0,5	6.000	90%	17,30	13,25	20%
manufacture of machinery and equipment	BHKW 4	0,5	5.000	80%	13,13	11,07	26,5%%
manufacture of automotive components	BHKW 4	0,5	5.000	90%	12,22	10,81	27,4%
automobile manufacturer	GuD 1	20	5.000	80%	10,65	9,01	26,8%
Other industry BesAR(paper)	DT 1	5	6.000	90%	10,52	4,07	6%
Other industry BesAR(paper)	GT 1	10	6.000	90%	7,02	4,07	18%
Other industry BesAR (chemistry)	GuD 1	20	6.000	90%	9,24	3,91	10%

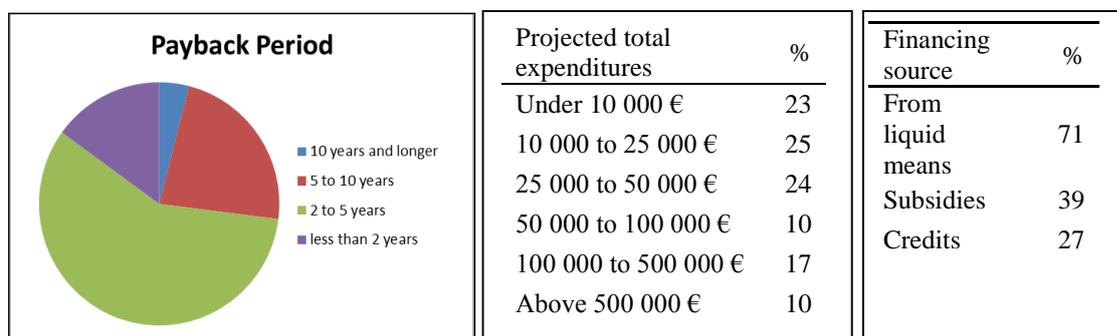
- (55) The calculations are based on the normal economic lifetime of the installations which is 15 years, except for installations of 20 MW and above for which 20 years correspond to the normal economic lifetime of the installations. After that duration, the installation must in general be replaced or significantly retrofitted.
- (56) For the LCOE calculations a discount rate of 20% in the service sector and 30% in the industry was used. For the industry, Germany has explained that the rates of return needed to trigger investments in those segments can vary greatly from one investor to another. For instance, while in the industry some project owners will engage into the project if it has a payback period of 5 years, others will require a payback period of 2 years. A 5-year payback period roughly equates to an annual project return of 20%, a period of two years equates to an annual project return of 50% and a payback period of three years equates to a project return of 33%.
- (57) Based on this observation, when it designed the level of support Germany had to conciliate two objectives: on the one hand ensure that enough CHP projects outside the district heating sector would be incentivised so as to meet its target and at the same time maintain the budget of the scheme within a certain limit. The discount rates in the industry (30%) used by Germany correspond roughly to what a significant portion of project owners would require as project return to implement the CHP project in Germany.

¹⁶ This support was examined by

- (58) Germany has submitted that the higher rates of return required by market participants in sectors other than the district heating can be explained by the fact that district heating companies are energy utilities and energy production belongs to their core business. The other sectors, however, are not specialised in energy production. While a more energy-efficient production could result in cost savings for them, it might also increase the complexity of operations. For those companies, the investment into the CHP installation does not constitute an investment into a side activity with its own costs and revenues but an investment having an impact on the production costs of the main activity of the company. Since operating a cogeneration installation is technically more complex than operating a heat boiler, investing in CHP projects will increase the risk of disrupting production. In addition, in most cases, the companies concerned, in particular in the industry, will have to invest into the CHP installation on top of a heat boiler that is needed to ensure security of energy supply in case the CHP installation is out of order or at times of maintenance. Companies would normally require higher rates of return to compensate for the additional risk.
- (59) Germany has submitted several surveys of businesses and industrial plants confirming that in Germany many undertakings only accept relatively short payback periods, between 2 and 5 years.

Figure 2 Payback period, projected total expenditures and financing sources - Source GfK 2014 / GfK EEDL Monitor / Ergebnisbericht November 2014

Total/Subgroup: Planners of efficiency measures, weighted average, excluding no replies, in %.



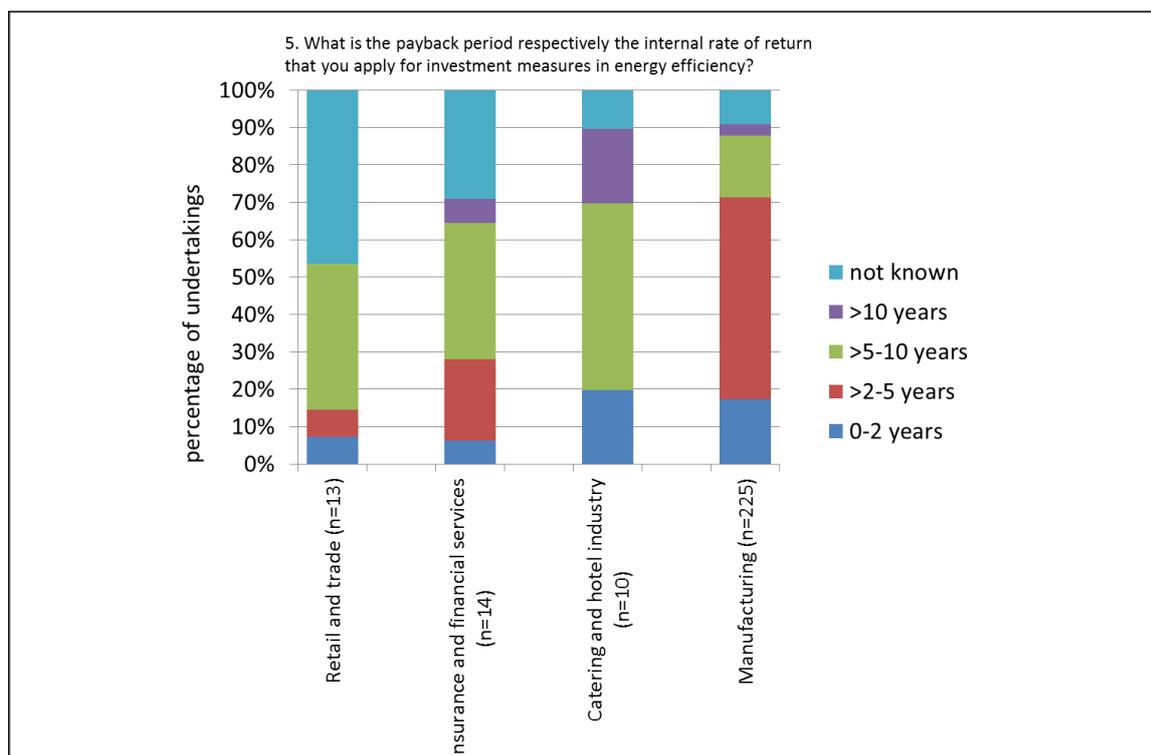
Basis: n= 963/474 (not weighted)

F6.1: In which period of time should costs linked to energy efficiency measures be paid back?

F6.2: What total expenditures are you planning in the next 2 years for measures aimed at increasing the energy efficiency of your company?

F6.3: How will you most likely finance the measures?

Figure 3: Payback periods and rates of return of energy-saving investments - Source Prognos, IFEU, HWR Marktanalyse und Marktbewertung im Bereich Energieeffizienz ¹⁷



(60) In 2015, the Association of Industrial Producers of Electricity (Verband der Industriellen Energie- und Kraftwirtschaft e.V. – VIK) has conducted a survey of its member companies on the issue of the profitability requirements for CHP projects. The following table presents the replies to the question: *'What is your company's maximum acceptable payback period for projects in the field of energy supply, in particular the building or modernisation of plants for combined heat and power generation (CHP plants)?'*

Table 3: Maximum acceptable payback periods

Industry	Max. accepted payback period (in years)
Food (1)	3
Food (2)	3.5
Paper 1	3
Paper 2	3.5
Chemistry 1	3
Chemistry 2	3.5
Metalworking (non-iron)	4
Metalworking (iron)	2

¹⁷ The participants to the survey have been asked which payback period they apply to investments into energy efficiency measures. They had the choice between the following categories: 0-2 years; 2-5 years, 5-10 years, 10 years, "don't know".

- (61) Germany has also referred to a study commissioned by the Commission on Energy Efficiency and Energy Saving Potential in Industry from possible Policy Mechanisms¹⁸. This study projected 2 output scenarios: a high and a low hurdle rate scenario. For the high hurdle rate scenario, the study uses a 2-year simple payback criterion as it has observed that this payback period represents a closer perspective of what industry might consider economically feasible. The study used a 5-year payback period in the lower hurdle rate scenario as projects with that longer payback period were often shortlisted but not implemented.
- (62) Finally, Germany has made a survey among CHP project owners. This survey shows that projects with a short payback period of 2 to 3 years (corresponding to a 50% to 33% rate of return) are realised while projects with payback periods above 4 years (25% rate of return) tend to be abandoned – as shown below in Table 4.

¹⁸ Study delivered by ICF Consulting Limited, December 2015, in the framework of Contract No. ENER/C3/2012-439/S12.666002, p. 6.

Table 4: Analysis of pay-back period requested for CHP projects in the industry

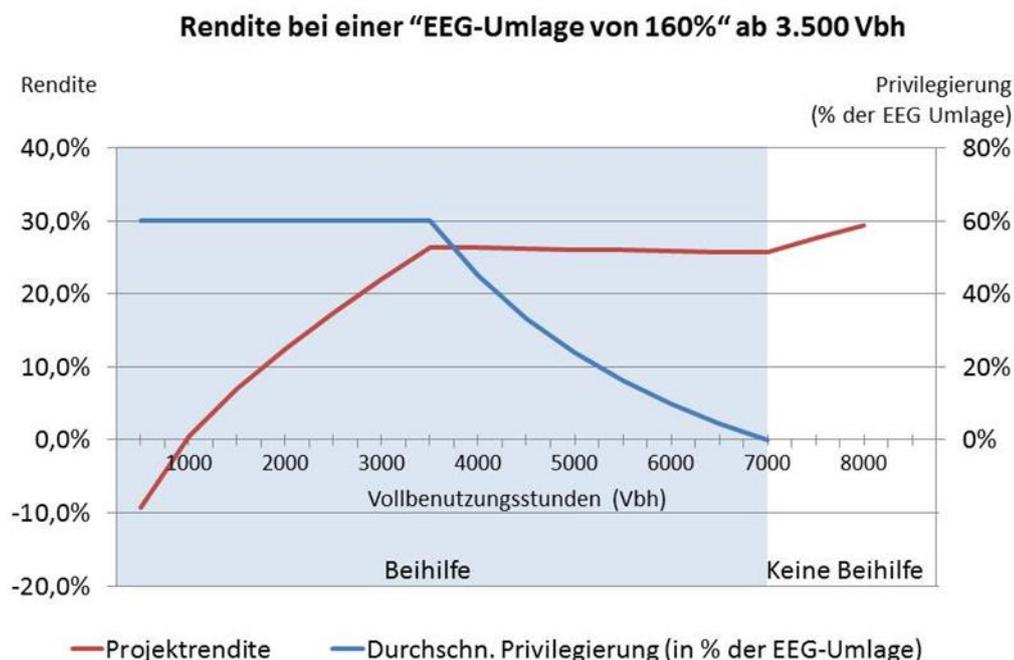
Industrial sector	Type of CHP	Electricity capacity	Thermal capacity	Was the project implemented?	Pay-back period
		kW	kW		Years
Manufacturing	Natural gas motor	> 10 000	> 10 000	Yes	2.0
Research	Natural gas motor	2 000	2 200	Yes	2.2
Logistics Centre	Natural gas motor	640	730 000	No	2.3
Reserach and development	Natural gas motor	1 500	1 800 000	Yes	2.6
Manufacturing	Natural gas motor	2 000	2 200	Yes	2.7
Motor vehicle manufacturers	Natural gas motor	2 800	2 300 000	Yes	3.0
Manufacturing	Natural gas motor	2 000	2 000 000	Yes	3.5
Automotive component manufacturers	Natural gas motor	1 500	1 500 000	Yes	3.5
Pharma	Natural gas motor	4 300	3 700 000	Yes	4.0
Automotive component manufacturers	Natural gas motor	900	930 000	No	4.5
Chemistry	Natural gas motor	2 000	2 200 000	Yes	4.5
Manufacturing	Natural gas motor	2 x 1 000	2 x 1 200	Possibly	4.5
Chemistry	Natural gas motor	500	600 000	No	5.0
Pharma	Gas turbine	4 600	10 500 000	No	5.1
Pharma	Natural gas motor	500	600 000	No	5.7
Food	Natural gas motor	1 300	1 600 000	Yes	6.0
Food	Gas turbine	1 700	3 700 000	Yes	8.0
Electroplating	Natural gas motor	500	600 000	No	8.0
Pharma	Natural gas motor	1 000	1 200 000	No	8.0
Manufacturing	Natural gas motor	400	500 000	No	8.5
Chemistry	Gas turbine	1 700	3 700 000	No	9.0

Source: non-public information by several planners

- (63) In this context, Germany provided information comparing the rates of return for CHP projects with and without EEG-surcharge reduction. The rates of return with support are based on information updated in April 2018 and which is more recent than the information used for the LCOE calculations under Table 2 (dating back beginning of 2017). The updated 2018 data shows that except for installations with an installed capacity superior to 1 MWel and inferior or equal to 10 MWel and reaching at least 7000 hours of full use, the rate of return without any reduction does not reach the target rate of return. In several cases the rate of return is negative. The data shows that the 60% reduction improves the rate of return of the projects. Except for projects undertaken by undertakings active in the electro-intensive sector (see next recital), the EEG surcharge reduction improves the rate of return of the projects to between 10% and 29%, with an average at 19%.
- (64) For undertakings active in electro-intensive sectors (List 1 of Annex 4 to the EEG-Act), the rate of return with the 60% reduction varies between 5% and 6.5%).

- (65) As the application of a 60% reduction in EEG-surcharge would have led to rates of return exceeding 30% for high energy efficient cogeneration installations with an installed capacity superior to 1MW and inferior or equal to 10MW and which do not belong to electro-intensive industries, Germany developed the claw-back mechanism described under recitals (32) to (35).
- (66) Germany provided rate of return calculations for the CHP installations subject to the claw back mechanism.

Figure 4: Rate of return with the claw-back mechanism for full load hours exceeding 3500.



- (67) Germany has further submitted rate of return information showing that the average rate of return (for standardized installations) obtained by CHP installations that entered into operation in 2016 and 2017 and which are subject to the transitory rule described under recitals (38) to **Error! Reference source not found.** above is not exceeding 30%.

2.7. Allocation process

- (68) The reductions are granted to self-supplier using a CHP installation meeting the criteria described under section 2.4 of this Decision. The reductions are set directly in the EEG-Act.

- (69) Germany has also examined the possibilities to select self-supply installations based on a competitive bidding process but concluded that based on current experience and knowledge in tender design, a competitive bidding process for self-supply CHP installations with installed capacity between 1 and 50 MW risks leading to a higher level of support and to overcompensation. In this context Germany stresses that the need for aid will depend on a number of parameters that are difficult to capture in the tender design (in particular the number of full load hours which are not known in advance and which made the claw back mechanism necessary). Germany fears that in a competitive bidding process the installations needing no aid or almost no aid would systematically be able to underbid projects needing aid or more aid) and at the same time bid largely above their costs while Germany sees no possibility to address this issue in the tender design. Germany also fears that given the complexity of the tender design that would probably be needed to organize a tender to grant reductions of the EEG-surcharge and that would cater for the difficulty of the number of full load hours, that same complexity would discourage participation in the tender and make the tender uncompetitive. In addition, Germany has indicated that while in the period 2014-2016 Germany used to have around 60 new installations per year (gas-fired self-supply installations), this number decreased significantly in 2017 (35 installations including district heating installations) and dropped further in 2018 (5 installations registered for 2018, including district heating installations). Based on this decreasing number of CHP installations, Germany fears that a tender for self-supply installations having a complex design would further discourage participation and be uncompetitive due to the lack of sufficient participation and would thus risk increasing the level of support.

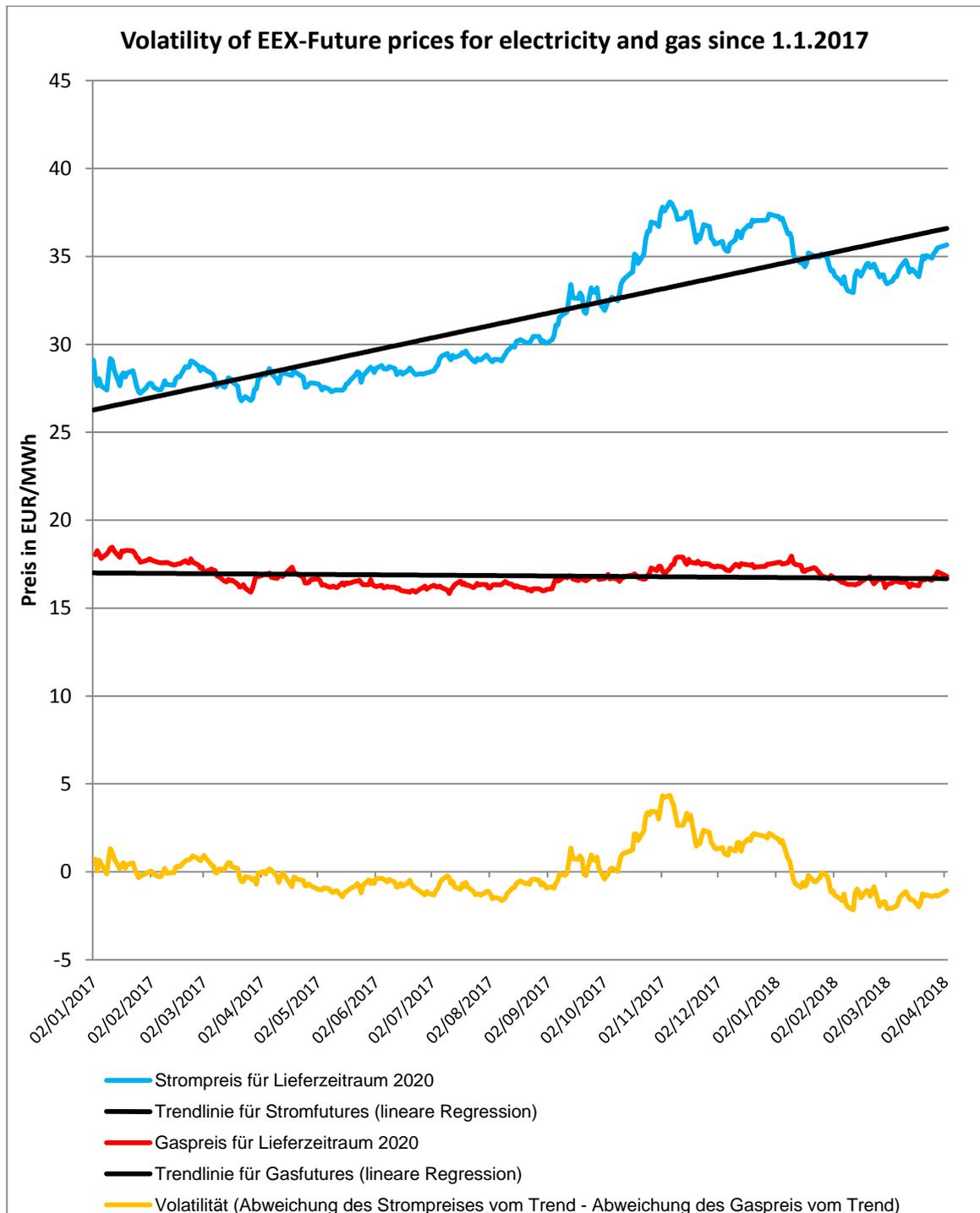
2.8. Monitoring of production costs

- (70) Germany indicated that it yearly monitors the evolution of the production costs and rates of return of CHP installations, including self-supply installations.
- (71) In addition, Germany committed to pay special attention to installations with an installed capacity superior to 1 MWe_{el} and inferior or equal to 10 MWe_{el} as those are the installations subject to the claw-back mechanism, and to verify evolution of production costs and rates of return of those installations by using the five topical examples of installations which were notified, starting in 2019. Those are the following:

Sector	Installation type	El capacity (MW)	Full-load hours (h/a)	Production	Self-consumption rate
manufacture of automotive components	BHKW 5	2	4.500	9,0 GWh	50%
automobile manufacturer	BHKW 5	2	8.000	16 GWh	100%
automobile manufacturer	DT 1	5	5.500	28 GWh	100%
automobile manufacturer	GT 1	10	5.500	55 GWh	100%
automobile manufacturer	BHKW 6	10	5.500	55 GWh	100%

- (72) Germany committed to amend the EEG law before the end of the 4 years period of the scheme to adapt the support level if a sustained overcompensation is detected.
- (73) The projects' profit levels strongly depend on the hypothesis used with regard to the evolutions of the electricity and gas prices. The difference between short-term volatility and long-term sustainable trends can only be made retrospectively: consequently, the annual evaluation foreseen for the five topical installations will take into account a margin of error.

(74) Germany calculated this margin of error based on the evolution of the electricity and gas price futures for the year 2020, from January 2017 to April 2018: the long-term price-trends for gas and electricity are determined on the basis of a regression line (cf. graphic). Since the evolutions of gas prices (input) and electricity prices (output) have contradictory effects on the profits of cogeneration units, Germany computed together the differences between the price-trends and the actual prices. According to Germany, this calculation isolates the short-term price variations with no effect on the installations' profits. In the period of calculation, the margin is of between -2,17 and +4,35 €/MWh.



(75) On this basis, Germany considers that an overcompensation risk materializes when the production costs (calculated with the LCOE-method) of one of the five topical

installations remains below the mean market price of electricity by more than 0.5 ct/kWh during two consecutive years. The difference of 0.5 ct/kWh describes the marginal fluctuation which is typically caused by the short term volatility of electricity and gas prices, without influencing the profit of the CHP installations on a lasting basis.

- (76) If such a sustained overcompensation risk is detected, Germany committed to propose as soon as possible a legislation change. This change will apply to new installed installations. Existing installations at the time of the entry into force of the new law would still benefit from the reduction of the EEG-surcharge applicable at the time of their first use as self-production.

2.9. Budget, entry into force and duration

- (77) The budget of the measure could reach up to EUR 70 million per year in 2020 if the number of CHP installations increases according to projections.
- (78) This budget will however fluctuate depending on the amount of the yearly EEG-surcharge, on the exact consumption level of cogeneration installations and their number.
- (79) The measures have been notified for four years after adoption of the Commission decision approving the scheme. After that period, Germany committed to re-notify any prolongation.

2.10. Transparency and further commitments

- (80) Germany has indicated that the information to be published in accordance with section 3.2.7. EEAG (publication on a comprehensive website of the text of the approved scheme, the identity of the granting authority and – except if the total individual aid remains below EUR 500 000 – the identity of the beneficiaries, the form and amount of the aid, the date of granting, the type of undertaking, the region in which the beneficiaries are located and the principal economic sector in which beneficiaries have their activities) can be found on <https://www.bmwi.de/Redaktion/DE/Artikel/Europa/beihilfenkontrollpolitik.html> (with link to "Transparenzmodul für die Bewilligung von staatlichen Beihilfen", TAM, <https://webgate.ec.europa.eu/competition/transparency/public/search/home/>).
- (81) The German authorities have also committed to suspend the payment of the notified aid if the beneficiary has benefited from an earlier unlawful aid that was declared incompatible by a Commission Decision (either concerning an individual aid or an aid scheme), until that beneficiary has reimbursed or paid into a blocked account the total amount of unlawful and incompatible aid and the corresponding recovery interest.

3. ASSESSMENT OF THE MEASURE:

3.1. Existence of aid

- (82) Under Article 107(1) TFEU, 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, in so far as it affects trade between Member States, is incompatible with the internal market.

(83) In determining whether a measure constitutes State aid within the meaning of Article 107(1) of the Treaty, the Commission has to apply the following criteria: the measure must:

- confer an advantage on certain undertakings or certain sectors (selective advantage),
- be imputable to the State and involve State resources,
- distort or threaten to distort competition, and
- be liable to affect trade between Member States.

3.1.1. Existence of a selective advantage

(84) Measures which, in various forms, mitigate the charges which are normally included in the budget of an undertaking and which, without therefore being subsidies in the strict meaning of the word, are similar in character and have the same effect are considered to constitute aid¹⁹.

(85) As recalled by the Court in its judgment of 21 December 2016 in the joined cases *Commission v World Duty Free Group and Commission v Banco Santander and Santusa*²⁰, for establishing the selectivity of a tax measure or a charge, it is necessary to determine whether that measure introduces a difference between operators that are, in the light of the objective pursued by the general tax system concerned, in a comparable factual and legal situation. The concept of aid does not encompass measures creating different treatment of undertakings in relation to charges where that difference is attributable to the nature and general scheme of the system of charges in question²¹. The burden of proof for that latter part of the test is on the Member State.

3.1.1.1. Identification of the reference system and of the normal charge principle

(86) As observed by the Commission in its 2017 EEG Decision, and as results from §60 EEG-Act read in conjunction with §61 (3) EEG-Act, the normal rule is that the EEG-surcharge is uniform per kWh of electricity consumed by the end consumers (see also §3 EEG-Act). It serves to cover the difference between the costs resulting from the support for RES-E and the revenues generated by the sale of the RES-E on the market (§60 EEG-Act). §60 and §61 EEG-Act entitle and oblige the TSOs to claim the EEG-surcharge directly from electricity suppliers but also from final consumers on the electricity that is not supplied to them by electricity suppliers but is either self-supplied or supplied by a third party (other than an electricity supplier) (see in particular §61 (3) EEG-Act which explicitly assimilates self-suppliers and final consumers supplied with electricity by third parties (other than electricity suppliers) to electricity suppliers).

(87) Also, the surcharge for the various groups of final consumers and self-suppliers identified in §61(a) and following of the EEG-Act is defined by reference to the full EEG-surcharge and does not seem to constitute another kind of surcharge,

¹⁹ Case C-387/92 *Banco Exterior de España* [1994] ECR I-877, paragraph 13, and Case C-75/97 *Belgium v Commission* [1999] ECR I-3671, paragraph 23

²⁰ Judgment of 21 December 2016, *Commission v World Duty Free Group*, joined cases C-20/15 P and C-21/15 P, ECLI:EU:C:2016:981, paragraph 60; judgment of 21 December 2016, *Commission v Hansestadt Lübeck (Lübeck Airport)*, C-524/14 P, ECLI:EU:C:2016:971, paragraphs 55 and 58

²¹ Case C-159/01 *Netherlands v Commission* [2004] ECR I-4461, paragraph 42; Case C -279/08 P, *NOx emission trading scheme*, paragraph 62

which further confirms that the full EEG-surcharge constitutes the rule and the point of reference.

- (88) In addition, the purpose of the surcharge is to finance the support for the production of RES-E which on its turn serves the climate objectives of Germany. §1 (1) and (3) EEG-Act indicates in this respect that the purpose of the EEG is to contribute to a sustainable development of energy supply in Germany by increasing the share of renewable electricity production in respect of total electricity consumption in Germany to 40-45 % by 2025 and at least 80 % by 2050.
- (89) Since 2014 the German legislator has concluded that not only the end consumer supplied with electricity from a third party should bear the EEG-surcharge but also the consumer supplying himself with self-generated electricity, because also self-suppliers participate to the electricity supply system in Germany and benefit from the purpose of a sustainable electricity supply in Germany.
- (90) On this basis, it must be concluded that under the EEG surcharge system the EEG surcharge is expressed in kWh and is in principle to be levied on each kWh of electricity consumed.

3.1.1.2. Differentiation between certain categories of end consumers

- (91) However, for the categories of end consumers described under sections 2.4.1. to 2.4.5. of this Decision, reductions are provided for. They constitute at first sight a deviation from the reference system as normally those self-suppliers would have been subjected to the full EEG surcharge.
- (92) The Commission has verified whether the end-consumers concerned would be in a different legal and factual situation in the light of the purpose of the surcharge system and the reductions or exemptions would therefore constitute a selective advantage; and if that is the case, whether the measure derives directly from the intrinsic basic or guiding principles of the reference system or whether it is the result of inherent mechanisms necessary for the functioning and effectiveness of the system.
- (93) The Commission considers that the reductions for consumers using high energy efficient CHP installations constitute an advantage for the operators of those installations. As mentioned above, the EEG rests on the principle that the EEG surcharge is levied on all electricity consumed in Germany, including RES-E, and that its proceeds are used to finance the production of RES-E. The Commission does not consider that operators of self-supply installations (that are not fuelled on the basis of renewable energy sources) would be in a different legal and factual situation in the light of the purpose of the EEG-surcharge system. They use fossil fuels (in particular gas) and not renewable energy sources but equally benefit from a more sustainable electricity supply in Germany (CO₂ emission reductions, back up function of the grid itself supplied with more sustainable electricity) in the same way as other final consumers which will need to pay the full EEG-surcharge. Also, in the light of the objective of the EEG-surcharge (spreading the costs among all actors of the electricity supply system in Germany, which includes all end consumers, see recitals (13)-(14) and (17)-(19) of this Decision) they are no different from self-suppliers using other production technologies or primary energy sources but which are subject in principle to a full EEG-surcharge.

3.1.2. *Imputability and existence of State resources*

- (94) The financing of support for RES-E and the reductions and exemptions for existing and older existing self-supply installations are imputable to the State, as they are established by law (EEG-Act) and implementing decrees.
- (95) According to settled case-law, only advantages which are granted directly or indirectly through State resources are to be regarded as aid within the meaning of Article 107(1) TFEU.
- (96) The Commission has already concluded in its 2014 EEG decision and in its 2017 EEG decision that the financing of the support for RES-E was involving State resources. As the financing of the support for RES-E through the EEG-surcharge that the Commission examined in the 2017 EEG decision is still the same, the Commission's conclusion are entirely transferrable to this case.
- (97) In particular, the Commission notes that the State established by law a surcharge on electricity consumption (see §60 to §61 EEG-Act and see Section 2.3 of this Decision). The EEG-Act provides that TSOs are under the obligation to collect this surcharge from electricity suppliers and from certain categories of consumers. The law also sets the methodology to determine the level of the surcharge and sets the level of the surcharge directly for certain categories of consumers (see §64 EEG-Act for electro-intensive undertakings for instance and §61b to §61g EEG-Act for self-suppliers and consumers not supplied by an electricity supplier). The law further determines to what purposes the surcharge can be used and how any surpluses or deficits are corrected (see recital (19) of this Decision). Indeed, according to §3 EEG, differences between forecasted revenues and expenses and actual revenues and expenses are taken into account for the determination of the surcharge for the next year X+1. As a result, deficits (including the interest rate) are compensated in year X+1 and surpluses are used to reduce the surcharge of the coming year. They may not be retained by the TSOs. The Commission further notes that the TSOs have been entrusted with the calculation of the surcharge based on the methodology set out in the EEG-Act and in its implementing regulations and manage the financial flows of the surcharge. The way that those entities manage the surcharge is monitored by the State (see recitals (21) to (26) of this Decision for details of the monitoring). The support is thus financed from State resources given that it is financed from the proceeds of levies imposed by the State and which are managed and apportioned in accordance with the provisions of the legislation. Like in the case giving rise to the judgment of 19 December 2013 in *Association Vent de Colère*²², the State has, within the framework of the EEG 2017, created a system where the costs incurred by the network operators to pay the feed-in tariffs and premiums to owners of renewable electricity installations eligible under the EEG-Act are fully compensated by the surcharge imposed on electricity end consumers. In addition, the support granted to renewable electricity does not constitute prices or fees for goods or services. Indeed, the support is paid by network operators to pay in particular premiums to operators of renewable electricity installations although the electricity is not sold to the network operators

²² Judgment of 19 December 2013, *Vent De Colère and Others*, C-262/12 ECLI:EU:C:2013:851.

but to third parties (see recital (9) of this Decision). In some cases the electricity is not even fed into the grid²³.

- (98) As the Commission has observed that the EEG-surcharge constitutes a State resource, a reduced EEG surcharge for self-supply of electricity in high energy efficient cogeneration installations implies a renouncement to State resources.

3.1.3. Impact on trade between Member States and on competition

- (99) The beneficiaries of the reductions are self-suppliers which are mainly active in the automotive sector and the service sectors and in sectors like the paper industry and the chemical sector (see recital (37) of this Decision). In all those sectors, trade takes place between Member States²⁴ and the beneficiaries are in competition with undertakings located in other Member States. The measure is therefore liable to distort competition and affect trade between Member States.

3.1.4. Conclusion on the existence of aid

- (100) The Commission concludes that the reductions of the EEG-surcharge described under section 2.4 of this Decision entail aid for self-supply of electricity from high energy efficient cogeneration installations that entered into operation after July 2014. Therefore the Commission needs to examine their compatibility.

3.2. Lawfulness of the aid

- (101) The planned EEG-surcharge reductions for self-supply of electricity from new high energy efficient cogeneration installations was notified to the Commission on 5 July 2017. The notified modifications have not yet entered into force. By notifying the concerned changes before their implementation, Germany has complied with its obligations under Article 108 (3) TFEU.

3.3. Compatibility

- (102) The Commission has assessed the notified aid scheme on the basis of the Guidelines on environmental and energy aid for 2014-2020²⁵ (EEAG).
- (103) It has assessed the reductions described under sections 2.4.1, 2.4.3 and 2.4.4 of this Decision under section 3.4. of the EEAG as the scheme provides operating aid to high energy efficient CHP installations and aims to incentivize self-suppliers to invest in this technology rather than in the separate production of heat and power. However, the reductions from the EEG-surcharge granted to high energy efficient cogeneration installations used for the self-supply of electro-intensive undertakings, as defined in annex 4, list 1 from the EEG (reductions described under section 2.4.5 of this Decision) have been assessed under section 3.7.2. EEAG, given that those reductions pursue primarily the objective described in

²³ See Commission decision of 15 November 2017 in file SA.48327 (2017/N) – Germany - Support for PV installations on rented buildings (Mietterstrom). Under this amendment to the EEG 2017, support is granted to operators of PV installations supply electricity from this installation to the residents of the building on which the PV installation is located.

²⁴ See also Annex 3 to the EEAG containing lists of sectors for which the trade intensity is higher than 10%. The paper industry and the chemical sector belong to those sectors.

²⁵ OJ C 200 of 28 June 2014, p. 1

point 182 EEAG. Finally, the Commission has assessed the reduction granted in 2018 to high energy efficient cogeneration installations with an installed capacity superior to 1MW and inferior or equal to 10MW that entered operation after 31 July 2014 and before 1 January 2018 for the electricity consumed after 31 December 2017 and before 1 January 2019 (reduction for installations described under section 2.4.2 of this Decision) under section 3.7.3. EEAG, as this corresponds to the last year of the adjustment plan for those installations.

3.3.1. Assessment of the reductions for the self-supply of electricity from new high energy efficient CHP installations under section 3.4. of the EEAG

3.3.1.1. Contribution to an objective of common interest

- (104) Germany has explained that the reductions aimed at incentivising production of electricity in high-efficiency heat and power cogeneration installations, which contributes to energy efficiency and CO₂ reductions, having thus an environmental objective.
- (105) High-efficiency cogeneration has been recognised by the Energy Efficiency Directive (EED)²⁶ as having significant potential for saving primary energy and thus for energy efficiency.
- (106) In line with point 139 of the EEAG, Germany limits the support to CHP electricity satisfying the definition of high-efficiency cogeneration pursuant to Annex II EED (see recital (30) of this Decision).
- (107) State aid for cogeneration using waste as input fuel can make a positive contribution to environmental protection, provided that it does not circumvent the waste hierarchy principle as established under the Waste Framework Directive.²⁷ The notified scheme will not create incentives to circumvent the waste hierarchy. First, Germany has confirmed that the support does not lead to circumvention of the waste hierarchy (see recital (30) of this Decision) and the Commission observes that Germany is recycling 62% of its waste, i.e. more than 50% as required by the Waste Framework Directive by 2020. Second, the reductions will not be granted to CHP installations burning liquid or solid fuels, including solid and liquid waste burning facilities (see recital (30) of this Decision), and which entered into operation as of 2018
- (108) The scheme is therefore directed at an increased level of environmental protection through promoting electricity from high energy-efficient cogeneration and thus, contributes to the objective of common interest in the form of energy efficiency.

3.3.1.2. Need for State intervention

- (109) Member States need to demonstrate that State aid is necessary to remedy a market failure that otherwise would remain unaddressed (cf. point 37 of the EEAG). In the

²⁶ Directive 2012/27/EU of the European Parliament and the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, OJ L 315, 14.11.2012, p. 1.

²⁷ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22.11.2008, p. 3.

case of cogeneration, the Commission presumes that energy efficiency measures target negative externalities by creating individual incentives to attain environmental targets for energy efficiency and for the reduction of greenhouse gas emissions (cf. points 35 and 142 of the EEAG). The information provided by Germany shows that the market alone and the ETS system would not by themselves trigger investments in CHP installations. A residual market failure exists, as shown in particular by the extra costs borne by high-efficiency CHP plants (see Table 2 above showing that LCOE are higher than market price). This market failure can be addressed through aid to promote energy efficiency.

3.3.1.3. Incentive effect

- (110) According to point 49 of the EEAG, the Member State must demonstrate that the aid has the effect of incentivising the beneficiaries to change their behaviour in line with the objective of common interest pursued.
- (111) The calculations provided by Germany (see Table 2 of this Decision) show that the production costs of electricity from high-efficiency CHP (LCOE) are higher than the electricity market price. The data further show that the notified aid improves the rate of return of the projects and creates the incentives to undertake or carry on cogeneration of electricity in CHP plants in most of the sectors and situations covered by the notified measure (see recital (63) of this Decision) and that, conversely, without support such activity would not be undertaken as the rate of return would be negative or below the rate expected by the sectors concerned to trigger the investment.
- (112) Finally, the Commission notes that the aid is granted under the EEG-Act automatically when all eligibility conditions are fulfilled. The network operators have no discretion in applying the reductions.
- (113) Based on those elements and in particular the automatic character of the aid when all conditions are fulfilled and the fact that Germany demonstrated that without the aid the CHP projects supported under the EEG-Act would not be implemented, the Commission concludes that the aid scheme has an incentive effect.

3.3.1.4. Appropriateness of the aid

- (114) In line with point 145 of the EEAG, State aid may be considered an appropriate instrument to finance energy efficiency measures, independent of the form in which it is granted.

3.3.1.5. Proportionality of the aid and no undue impact on competition

- (115) The notified measure consists of operating aid (reduced EEG-surcharge) for the production of electricity in highly energy-efficient CHP installations, thus point 151 of the EEAG is applicable for the assessment of proportionality.
- (116) The CHP plants benefiting from the measure fall into both categories defined in point 151 (a) and (b) of the EEAG since their output serves entirely or at least partly for industrial use and for the rest the electricity is sold to the public grid.

- (117) For the assessment of proportionality, point 151 of the EEAG makes reference to the conditions applying to operating aid for electricity from renewable energy sources as established in section 3.3.2.1 of the EEAG.
- (118) According to point 124 of the EEAG, in order to incentivise the market integration of electricity generators, it is important that beneficiaries sell their electricity directly on the market and are subject to market obligations. The following cumulative conditions apply from 1 January 2016 to all new aid schemes and measures:
- (a) The aid is granted as a premium in addition to the market price whereby the generators sell their electricity directly on the market;
 - (b) The beneficiaries are subject to standard balancing responsibilities, unless no liquid intra-day balancing markets exist;
 - (c) The scheme ensures that generators have no incentive to generate electricity when market prices are negative.
- (119) The aid is granted in the form of a reduced EEG-surcharge and not as a market premium within the meaning of point 124 a) EEAG. However it is still an operating aid granted to CHP installations which at least partially self-consume the electricity produced within the meaning of point 151 (b) of the EEAG. The Commission considers that the reduced EEG-surcharge mitigates the charges which normally should be included in the budget of the undertakings concerned and they have similar character and the same effect as a fixed premium. Indeed, the reduction does not cover the entire electricity production costs of the self-supplier and comes on top of the electricity market price savings that the undertaking makes by producing its own electricity. Also it has the same economic effect as a direct premium of the same amount that would have been granted to the self-supplier instead of the reduction of the EEG-surcharge. However, when the beneficiary of the EEG-surcharge reduction is injecting its surplus production into the grid, it will need to sell it directly on the market (see recital (49) of this Decision) in line with the marketing obligation pursuant to point 124 a) EEAG.
- (120) The Commission considers that the requirements b) and c) in point 124 EEAG are applicable to CHP installations generating electricity in first place for their own industrial use to the extent that they can still inject into the public grid the surplus of electricity generated. The operators of CHP installations benefitting from the EEG-surcharge reductions will be subject to standard balancing responsibility when they are injecting their surplus electricity production into the public grid in line with point 124(b) of the EEAG (see recital 49 above).
- (121) Finally, as the beneficiaries primarily generate the electricity for their own production needs, the Commission considers that the reduced EEG-surcharge does not provide incentives for them to generate and offer electricity on the market at times of negative prices. In any event, Germany committed to ensure that the requirement in point 124 c) EEAG will be complied with. In particular, when electricity is injected into the grid, no direct premium under the KWKG 2016 is paid to operators of cogeneration installations at times of negative prices (see 2016 KWKG Commission decision, recitals 31 and 164).
- (122) Point 126 of the EEAG requires that, from 1 January 2017, aid is granted in a competitive bidding process.

- (123) According to point 126 of the EEAG, aid should in principle be granted through a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, unless a) Member States demonstrate that only one or a very limited number of projects or sites could be eligible; or b) Member States demonstrate that a competitive bidding process would lead to higher support levels (for example to avoid strategic bidding); or c) Member States demonstrate that a competitive bidding process would result in low project realisation rates (avoid underbidding). This requirement does not apply to CHP installations with installed electrical capacity below 1 MW (point 127 of the EEAG).
- (124) Installations with a capacity of not more than 1 MW_{el} will obtain aid without having to be selected in a competitive bidding process. This is in line with point 151 read in conjunction with point 127 of the EEAG.
- (125) As concerns retrofitted installations, the Commission also concluded in its 2016 KWKG Decision²⁸ that it was justified to exempt them from the tender requirement. Their production costs being lower than production costs of new or modernised CHP installations, those installations would be able to obtain windfall profits if they were to participate to the same tenders as modernised and new installations. A separate tender cannot be envisaged as the number of retrofitted installations would be too small to ensure a competitive tender (see recital 175 of the 2016 KWKG Commission decision). Given that the assessment was based on the total number of retrofitted projects and included also self-supply installations, these findings are entirely transposable to the present case. The aid can therefore be granted to those installations without their participation in a competitive bidding process (as per point 126 third indent, a and b of the EEAG).
- (126) As concerns the inclusion of self-supply installations with installed capacity between 1 and 50 MW_{el} in a single tender together with other cogeneration installations, the Commission agrees that it would be difficult to make these installations compete on equal footing as the potential beneficiaries would submit bids for different forms of aid (premium on electricity injected into the grid versus EEG-surcharge reduction).
- (127) Concerning a tender involving self-supply installations with installed capacity above 1 MW_{el}, Germany has indicated that the tender design would be extremely complex and likely to lead to higher support levels, in view also of the decreasing number of projects.
- (128) Germany has indicated that certain types of operators in fact do not need aid when their operating hours reach or exceed 7000 hours (see recital (35) of this Decision). It is however very difficult to exclude those operators from tenders because the number of running hours is not known in advance and can even change throughout the years. Admitting all those operators into the tender is thus likely to give them the possibility to place bids largely above their true costs or needs and to still slightly underbid other projects. If however, the tender is segmented into subgroups, the risk of undersubscribed tenders due to an insufficient number of projects in each segment would occur.

²⁸ See recital 175 of Commission decision of 24 October 2016 in case SA.42393 (2016/C) – Germany-Reform of support for cogeneration in Germany, OJ C 406 of 4.11.2016, p. 21.

- (129) The Commission notes in this regard that the sensitivity to operating hours has led to a system of EEG-surcharge reductions for certain CHP installations varying between 60% and 0% depending on the number of operating hours. Data shows indeed that with very high running hours, there is hardly any need for a charge reduction. The Commission agrees with Germany that the number of operating hours is however not known in advance and has led to the development of the claw-back mechanism described under (34) to (36) of this Decision. The Commission agrees that it is currently not conceivable how such a complex situation could be reflected in a competitive tender design. As the sector does not yet have any experience with the claw back mechanism, a tender based on that mechanism is likely to discourage participation in the tender and to increase a risk of undersubscription and thus to higher support levels.
- (130) The Commission notes in addition that the risk of undersubscription that would result from the complexity of a tender which would also foresee a claw back mechanism, is not a purely theoretical risk in the sense that Germany has shown that the number of registered CHP installations of 1 MWel and above for the years 2017 and 2018 (until June) has significantly decreased compared to previous years. Under those circumstances, the Commission agrees that there is currently an important risk that a tender in Germany, in which self-suppliers would have to compete on the basis of the maximum reduction of the EEG-surcharge instead of a direct grant, is likely to be undersubscribed for lack of enough participants and to lead to higher support levels.
- (131) Finally, the Commission notes that Germany has notified the scheme for a limited time until July 2022. After that date it will be possible to assess how the sector has reacted to the claw-back mechanism and whether tenders would be more likely to be competitive.
- (132) Based on those elements, the Commission concludes that Germany could provide reasons pursuant to point 126 third indent a)-b) EEAG justifying the grant of the reduced EEG-surcharge without competitive bidding process.
- (133) Point 128 of the EEAG stipulates that, in the absence of a competitive bidding process, the proportionality of the aid and distortion of competitions have to be assessed on the basis of the conditions of points 124, 125 and 131 of the EEAG. Compatibility with points 124 and 125 of the EEAG has already been examined above. The Commission will thus examine the proportionality of the reduced EEG-surcharge for high-efficient CHP installations pursuant to the requirements in point 131 of the EEAG.
- (134) Point 131 (a) and (b) of the EEAG provides that the aid per unit of energy shall not exceed the difference between the total levelized cost of producing energy (LCOE) from the particular technology in question and the market price of the form of energy concerned. The total LCOE may include the plant's normal return on capital but any investment aid should be deducted from the total investment amount in calculating the costs.
- (135) The Commission has verified that the support resulting from the EEG-surcharge reduction does not exceed the difference between the LCOE and the market price in those cases where support is given. To that end, it has verified that the reductions do not lead to excessive rates of return for the CHP installations concerned.

- (136) The Commission first observes that when it calculated the LCOE Germany correctly deducted from the production costs revenues generated by heat production (either in the form of price obtained for the heat or in the form of savings made due to the fact that the heat does not need to be purchased on the market or produced in a gas boiler) and other advantages (as for instance reduced energy tax for highly efficient CHP).
- (137) Second, concerning the market price used to determine the level of the premium, Germany correctly used the base-load market price as a reference given that CHP installations produce base-load electricity and in case of self-consumption of the electricity, it correctly used the market price that this category of consumer would have had to pay for the electricity concerned if he had to purchase it (see Table 1 and recital (52) of this Decision).
- (138) Fourth, as discount rate for the calculation of levelized cost, Germany has used 20% in the service industry and 30% in the industry.
- (139) The discount rates used for the service sector and the industry are higher than what has been considered as reasonable in previous cases²⁹. However, the evidence submitted by Germany confirms that in the industry in Germany, CHP projects with a short payback period of 2 to 3 years (corresponding to a 50% to 33% rate of return) are realised, while projects with a payback period above 4 years (25% rate of return) tend to be abandoned (see studies presented under recitals (59) to (62) of this Decision). Those rather short payback periods in those sectors can be explained by two factors: first, those sectors are not energy companies and choosing a CHP installation to cover their energy needs (instead of purchasing electricity from the grid) will have an impact on their core production process and costs. Investors in the service sector and industry will thus be more risk adverse than energy utilities when they make the decision to invest into a CHP installation; they will require a shorter payback period (see however recitals (48) and (64) on undertakings active in electro-intensive sectors). Second, the form of the subsidy (reduction of the EEG-surcharge) involves higher risks for the investor compared to floating premiums that are generally used for instance in renewable support schemes or to support CHP projects in other Member States and which guarantees stability of revenues over the entire lifetime of the installation. In particular, there is no guarantee that the reduction will continue to be sufficient to cover the gap between the production costs and the market price as this will depend on the actual operating hours of the installation and on the prices for electricity and gas. In addition, there is no guarantee that the reduction will remain the same over the economic lifetime of the plant as the legislator could decide to abolish the reductions and decrease them. In addition, the EEG-surcharge system and CHP support in Germany have been modified substantially several times in the last years and self-suppliers using CHP installations are facing higher uncertainties that the form of the aid (EEG-surcharge reduction) is not alleviating. This higher risk

²⁹ See for instance Commission decision of 15 June 2009 in case N354/2009 – Slovenia – Support for production of electricity from renewable energy sources and in cogeneration installations: the rate of return used was 12%, the aid was granted as feed-in tariff or floating premium; Commission decision of 14 July 2015 in case SA.35486 – Denmark – Aid for electricity generation in industrial combined heat and power plants: the rate of return used was 10% and the aid was in the form of a premium adapted on the basis of electricity price evolution, see also Commission decision of 9 August 2016 in case SA.43719 – France – CHP-support scheme: the rate of return was between 7 and 8% and the aid had the form of feed-in tariffs or floating premiums.

increases by itself the rate of return that investors will want to obtain in order to make the investment decision.

- (140) The Commission further notes that for several categories of projects, the support will actually not yield 20% or 30% of rate of return. Those rates of return constitute the absolute maximum. In particular, the rates of return obtained with the support for several types of installations are much lower than 30% (see recital (63) of this Decision). The support will thus only yield projects for which the project owner has accepted a longer payback period (and thus a lower rate of return).
- (141) Finally, the Commission notes that Germany notified the scheme until July 2022. After that date updated surveys and studies would be available to verify whether discount rates of 20% or 30% are still warranted.
- (142) Based on those elements, the Commission considers that the rate of return of supported projects can be considered as reasonable.
- (143) The Commission also notes that the aid can be cumulated with other types of aid (reduced energy tax or direct grant under the KWKG 2016). However those aids have been taken into account for the LCOE calculations (see recital (52) of this Decision). In addition, Germany confirmed that in case of investment aid, the investment aid and the operating aid together may not exceed the difference between the LCOE of the CHP installation and the market price of the energy produced, in line with point 151, read in conjunction with points 128 and 131(b) of the EEAG.
- (144) Finally, as far as installations that entered into operation in 2016 or 2017 are concerned, Germany has provided for a regime that is slightly different as the claw back mechanism described under recital (34) of this Decision would apply only as of 2020 and 2021 respectively. However, Germany has provided for those installations profitability calculations showing that the special regime does not lead to an average rate of return exceeding 30%.
- (145) Costs are also updated regularly. Germany has in this respect committed to yearly monitor the evolution of the production costs and rates of return of CHP installations, including self-supply installations and to pay special attention to installations with installed capacity between 1 and 10 MWel and to propose legislative change as soon as risk of overcompensation as defined under recital (75) above appears. The notified scheme therefore meets the criterion set out in point of the 131 (c) of the EEAG.
- (146) Germany has further demonstrated that the aid was in line with point 131 d) EEAG. On the one hand, Germany has indicated that for the LCOE calculations it took into account the economic lifetime of the installations so that the aid would in practice stop with the end of the lifetime of the installation unless it is replaced or substantially modernized (and in that case the installation would start a new economic lifetime). On the other hand, Germany has notified the scheme for a limited time until July 2022.

3.3.2. *Reductions as of 2018 for new high energy efficient CHP installations used by electro-intensive firms for the self-supply of electricity*

- (147) As explained in section 2.4.5 of this Decision, new high energy efficient cogeneration installations used by undertakings active in electro-intensive sectors obtain a 60% reduction on the self-supplied electricity, even when their installed capacity is between 1MWel and 10MWel.
- (148) Section 3.7.2. of the EEAG contains compatibility criteria for aid granted to electro-intensive undertakings in the form of reduced surcharges financing RES-deployment. Indeed, in case of auto-suppliers generating electricity in high energy efficient CHP installations qualifying as energy-intensive users within the meaning of points 185-186 EEAG the main objective pursued by the reduced surcharges is to secure a sufficient financing base for RES-support by avoiding a significant competitive disadvantage for these undertakings.
- (149) Points 185 - 186 of the EEAG provide that the aid granted to electro-intensive undertakings (EIU) in the form of reduced renewable surcharges should be limited to sectors that are exposed to a risk to their competitive position due to the costs resulting from the funding of support to energy from renewable sources as a function of their electro-intensity and their exposure to international trade. Accordingly, the aid can be granted if the undertaking belongs to the sectors listed in Annex 3 to the EEAG.
- (150) Under the notified measure, the reduction for EIUs will be granted only in relation to the EEG surcharge (i.e. with the burden for financing the notified EEG support system). As explained in recital (47) of this Decision, only the companies from the sectors included in List 1 of Annex 4 to the EEG-Act are eligible to benefit of a reduction. The sectors listed on List 1 of Annex 4 to the EEG-Act corresponds to the sectors listed in Annex 3 to the EEAG. The reduced EEG-surcharge that Germany plans to grant to undertakings for the self-supply of electricity when they are active in sectors of List 1 of Annex 4 to the EEG is thus in conformity with point 185 of the EEAG.
- (151) Point 188 of the EEAG provides that the aid is considered proportionate if the aid beneficiaries pay at least 15 % of the normally applicable renewable surcharge. The system Germany established complies with this condition as beneficiaries would be required to pay 40% of the EEG-surcharge.
- (152) Point 187 of the EEAG provides that within the sectors eligible for reduced renewable surcharges, Member States need to ensure that the choice of beneficiaries is made on the basis of objective, non-discriminatory and transparent criteria and that the aid is granted in principle in the same way for all competitors in the same sector if they are in a similar factual situation. The 60% reduction is granted to undertakings active in sectors of List 1 of Annex 4 to the EEG-Act that are self-suppliers using high-efficient CHP installations. In principle, however, EIUs in Germany are eligible for reduced EEG-surcharges only when they demonstrate that they reach an electro-intensity of at least 14% (see recital 133 of the 2016 EEG Commission Decision).
- (153) The Commission has verified that the differentiated treatment of electro-intensive self-suppliers using high efficient CHP installations did not lead to discrimination of undertakings active in the same sector. The Commission notes in this respect that Germany confirmed that self-suppliers (using or not CHP installations) can

also apply for reduced EEG-surcharges under the BesAR. At the same time, Germany has explained that requesting the 14% electro-intensity also from self-suppliers using CHP installations in electro-intensive sectors was creating distortions of its own and could have led to (energy) inefficiencies. Indeed, Germany has explained that self-suppliers active in electro-intensive sectors but using CHP installations do not necessarily reach the 14% electro-intensity required under the EEG due to the fact that it can be observed in those sectors, that CHP installations will be constructed when there are strong synergies with the heat production. To be able to exploit those synergies, companies will then generally be integrated companies. Germany stressed that these interdependencies result from the constraint that in CHP installations electricity is produced only when also heat is needed and produced. On its turn, this integration will often lead to electro-intensities that are slightly below 14% due to the higher GVA of integrated companies.

- (154) The Commission further observes that Germany has provided figures showing that those synergies will also imply that the EEG-reduction needed to trigger the investment into CHP installations and to make the EEG-surcharge burden sustainable to the undertaking concerned does not need to reach 85% as in the case of electro-intensive companies procuring electricity from the grid. Germany provided in particular rates of return of CHP by undertakings active in those sectors and showing that the 60% reduction will yield a positive rate of return for the CHP investment in those sectors (see in particular the installations examined under recital (64) and Table 2 used by undertakings qualifying for the BesAR). The rate of return is lower than for CHP installations used in other sectors but can still be sufficient to trigger the investment given the synergies that the undertaking can achieve and given that being electro-intensive those undertakings will more easily invest in energy-efficiency measures than a non-electro-intensive user. Finally the rate of return is not excessive and does not give the operators of the CHP installations an undue advantage over their competitors in the same sector.
- (155) Finally, the Commission notes that the reduction is limited to the self-supplied electricity produced (and consumed) on the basis of the CHP installation and will de facto also target the electro-intensive activities of the undertaking concerned.
- (156) On this basis, the Commission agrees that electro-intensive users resorting to self-supply based on high efficient CHP installations are in a different situation compared to other electro-intensive users and that their differentiated reduction regime is justified by those differences and adapted to them. The Commission therefore concludes that the planned 60% EEG-surcharge reduction for electro-intensive self-suppliers using high efficient CHP installations is in line with point 187 of the EEAG.
- (157) The Commission thus concludes that the 60% EEG-surcharge reduction planned for electricity produced in high energy efficient cogeneration installations used by electro-intensive firms for their self-supply of electricity is in conformity with section 3.7.2 of the EEAG.

3.3.3. *New high energy efficient cogeneration installations: Reductions in 2018 for installations with capacity between 1 and 10 MWel and with more than 3500 running hours and that entered into operation after 31st July 2014 and before 1st January 2018 (described in section 2.4.2. of this Decision).*

- (158) As described under recital (15) of this Decision, Germany had provided in the EEG 2014 that self-suppliers relying on new high efficient CHP plants that entered into operation as of 1 August 2014 would be subject to a reduced EEG-surcharge of 30% from August 2014 to December 2015, 35% in 2016 and 40% in 2017. These reduced rates were approved by the Commission in its 2014 EEG decision on the basis of point 194 of the EEAG. The approval was limited to 2017 included. Pursuant to recital 327 of the 2014 EEG Commission decision, Germany notified the reduced EEG-surcharge for 2018 for the new high efficient CHP plants that entered into operation between 1 August 2014 and 31 December 2017.
- (159) As described under section 2.4.2. above, new self-supplying high-efficient cogeneration installations with capacity between 1 and 10 MWel and with more than 3500 running hours (i.e. installations corresponding in practice to the installations covered by the 2014-2017 adjustment plan) will in 2018 pay a reduced EEG-surcharge of 40% but only up to 3500 hours of use. Full load hours exceeding 3500 will be subject to the full EEG-surcharge but not to the claw-back mechanism described in recital (34). As the reductions for those installations in 2018 are slightly more favourable than the reductions applying to new high energy efficient installations entering into operation as of 2018, a risk of overcompensation within the meaning of point 151 read in conjunction with point 131 of the EEAG cannot entirely be excluded for installations that entered into operation between August 2014 and 31 December 2015.
- (160) However pursuant to point 194 of the EEAG a reduction in the funding of support to renewable electricity before 2019 can be declared compatible with the common market to the extent that it complies with an adjustment plan. Germany submitted such an adjustment plan for the years 2014-2017 for new high energy efficient CHP installations entering in operation between August 2014 and 31 December 2017 (see recital (15) of this Decision). The reductions for 2018 constitute a prolongation of the adjustment plan by one year. This prolongation is in line with point 194 of the EEAG. First, point 194 allows for an additional year to the adjustment plan as it allows an adjustment plan until 2018 included and second, point 194 requires the adjustment to be progressive, which is the case here as the 60% reduction is limited to the first 3500 hours of full use (while in 2017 the 60% reduction applied to all hours of full use). Moreover, point 194 of the EEAG requires that by 2019 reductions are in line with the EEAG which is also the case. Indeed, it has been demonstrated under sections 3.3.1 and 3.3.2 above that the reductions granted as of 2019 to new high energy efficient CHP installations are entirely in line with section 3.4 of the EEAG on the one hand and with section 3.7.2. of the EEAG on the other hand.

3.3.4. *Duration and transparency*

- (161) The notification is limited to four years (until July 2022). After that period, Germany committed to re-notify the measure pursuant to Article 108(3) TFUE within the period of 4 years from the date of adoption of the present Decision.

- (162) Germany publishes the information requested under point 104 EEAG by using the Transparency Award Module provided by the Commission under:
<https://webgate.ec.europa.eu/competition/transparency/public/search/home/> (see recital (80) of this Decision).
- (163) Information on individual aid awards below EUR 500 000 is not published as also allowed under point 106 of the EEAG.

4. AUTHENTIC LANGUAGE

- (164) As mentioned under section 1 above, Germany has accepted to have the decision adopted and notified in English. The authentic language will therefore be English.

5. CONCLUSION

The Commission has accordingly decided not to raise objections to the aid on the grounds that it is compatible with the internal market pursuant to Article 107(3)(c) of the Treaty on the Functioning of the European Union

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Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission

