



EUROPEAN COMMISSION

Brussels, 25.11.2019
C(2019) 8528 final

<p>In the published version of this decision, some information has been omitted, pursuant to articles 30 and 31 of Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union, concerning non-disclosure of information covered by professional secrecy. The omissions are shown thus [...].</p>		<p style="text-align: center;">PUBLIC VERSION</p> <p>This document is made available for information purposes only.</p>
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Subject: State Aid SA. 54042 (2019/N) Bulgaria- Sofia waste-to-energy project/ cogeneration unit with recovery of energy from RDF

Madam,

1. PROCEDURE

- (1) After pre-notification, by letter dated 8 October 2019, registered the same day, Bulgaria notified the above-mentioned measure to the Commission pursuant to Article 108(3) of the Treaty on the Functioning of the European Union (TFEU). Upon request of the Commission on 24 October 2019, Bulgaria provided additional information on 28 October and 13 November 2019.
- (2) On 28 October 2019, Bulgaria agreed to waive its rights deriving from Article 342 TFEU in conjunction with Article 3 of the EC Regulation 1/1958 and to have the present decision adopted and notified pursuant to Article 297 TFEU in English language.

Ekaterina Zaharieva
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2. DETAILED DESCRIPTION OF THE AID

2.1. Objectives

- (3) This notification concerns the support measures granted for the construction of a high-efficient waste-to-energy combined heat and power (CHP) plant in the city of Sofia, Bulgaria, by Toplofikacia Sofia EAD (Toplofikacia), an energy company 100% owned by the Sofia municipality¹. The plant will have a thermal capacity of approximately 55 MWt (MW thermal equivalent) heat and will have the ability to process through thermal recovery up to 180,000 tonnes of waste (Refuse-Derived Fuel- RDF) per year. The plant will in addition have an electricity capacity of approximately 19 MWe (Mega Watt electricity equivalent) electric power, providing electricity for around 30 000 households and heat for 40 000 households.
- (4) The main objective of the aid is the improvement of energy efficiency through the combined electricity and heat production in the planned high-efficiency cogeneration plant. The plant will achieve more than 40% (notably 46.5%) primary energy savings compared with the separate production of heat and electricity², in line with the methodology set out in Annex II to Directive 2012/27/EC (“Energy-Efficiency Directive/EED”)³. The plant will also contribute to achieving the Bulgarian energy efficiency targets by increasing energy efficiency (127.000 MWh heat will be produced by co-generation instead of by heat boilers), thus leading to a reduction of imported natural gas of approximately 600,000 MWh or 51,600 toe (1 toe = 11.63 MWh).
- (5) As a second objective, the project will also help reduce CO₂ emissions, in the framework of sustainable growth objectives. Bulgarian Authorities claim that the CHP plant is expected to reduce approximately 17,000 tonnes of CO₂ per year in the first year of operation increasing to approximately 20,000 tonnes of CO₂ per year in the following years. In this context, Bulgarian Authorities allege that the project will have a direct effect on greenhouse gas emissions reduction through the displacement of natural gas with RDF, and thus contribute to implementation of the National Action Plan for Climate change (2013-2020), as well as to the implementation of the Integrated Plan in the Energy and Climate Sector of the Republic of Bulgaria.

¹ The project full name is “Design and construction of installation for combined energy production in Sofia with RDF utilization – third phase of the Integrated system of Waste Management facilities for Sofia Municipality”.

² Bulgarian Authorities calculated primary energy savings as follows:

$$PES = \left(1 - \frac{1}{\frac{CHP H\eta}{Ref H\eta} + \frac{CHP E\eta}{Ref E\eta}} \right) \times 100 \% = \left(1 - \frac{1}{\frac{0.677}{0.80} + \frac{0.234}{0.229}} \right) \times 100 \% = 46.5 \%$$

³ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on Energy efficiency, amending Directive 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).

- (6) Finally, a third objective of the project is reducing municipal waste landfilling and contributing towards circular economy. The project aims at “closing” the cycle of waste management through the establishment of a modern high-efficient waste-to-energy combined heat and power (CHP) plant in the city of Sofia as part of the *Integrated waste management system* project in Sofia for the annual utilization of 180,000 tons of RDF. By ensuring treatment in its own CHP Plant, Sofia will not only significantly reduce landfill disposal and thus reduce emissions of landfill gas to the atmosphere, but will also reduce gas emissions from long-distance transportation of RDF.

2.2. Legal basis and stand-still clause

- (7) The national legal basis is set out in the Operational programme “Environment 2014 – 2020”, Priority Axis 2 “Waste”⁴, as well as the National Waste Management Plan 2014 - 2020 adopted by the Council of Ministers with Decision No 831/22.12.2014⁵.
- (8) Bulgarian Authorities have confirmed that they will not implement the support measures before the European Commission non objection decision.

2.3. Background

Integrated waste treatment project in Bulgaria

- (9) The current project is the third phase of a long-standing environmental project financed through structural funds (ESIF/ERDF) aiming at improving waste treatment in Sofia Region, Bulgaria. The first phase involved (amongst other actions) the construction of a new landfill, a new anaerobic digestion with energy production and composting installation and other minor project components. The first phase was completed in 2014. The second phase, which was completed in 2015, included the improvement of recycling and the establishment of a mechanical biological treatment (MBT) facility producing as a main product RDF as well as secondary materials for recycling⁶. The 2012 Commission Decision, of granting of ERDF financing to the 1st and 2nd phase of the project mentioned that the RDF- to be produced by the MBT- would be used as alternative fuel for the district heating installations and only on a temporary basis for combustion in cement plants.
- (10) The third phase of the project involves the construction of a waste-to-energy plant that will use this RDF to produce heat and power, contributing to the achievement of the Specific Objective 1 "Reducing the amount of waste going to landfills" of

⁴ www.ope.moew.government.bg

⁵ National Waste Management Plan, https://www.moew.government.bg/static/media/ups/tiny/filebase/Waste/NACIONALEN_PLAN/_NP_UO_2014-2020.pdf

⁶ See also Decision No 2011 BG161PR007 of 20 December 2012 of the European Commission for approval of phase II of the project “Integrated system of facilities for household waste treatment in Sofia Municipality”, C (2012) 9898 final. The ERDF award to the project amounted to EUR 98 519 902.

priority axis 2 "Waste" of Operational Program Environment 2014-2020. Whereas for the purposes of ESIF and EIB funding Sofia municipality has played a key role, the ultimate beneficiary will be the Toplofikacia, as ultimate owner of the resulting RDF CHP plant.

Heat, electricity and waste markets in Bulgaria

- (11) Regarding the Sofia Region, Toplofikacia is the supplier, on an exclusivity basis, of district heating to the inhabitants of the city of Sofia and the owner and operator of the Sofia local supply network licensed by the Bulgarian energy and water regulator (EWRC). The company operates only on the local market of Sofia municipality, and generates 100% heat for its own district heating network. The price of heat (generation and supply) is subject to price regulation by the EWRC pursuant to the Bulgarian Energy Act. Considering also other means of heating-on an individual basis-, in the Sofia municipality Toplofikacia serves more than 67% of all heat consumers, plus approximately 35,000 business customers.
- (12) Currently, Toplofikacia operates two thermoelectric plants with installed capacity of 198 MWe (Sofia Power Plant - 72 MWe and Sofia East TPP - 126 MWe). Upon completion of the project, the total installed capacity for the company would increase to 217 MWe (an increase of 9.5%), thus increasing the share of cogeneration in the provision of the heating needs of the city of Sofia. Bulgarian Authorities indicated that the supply of RDF to the Sofia CHP project will enable the project company to reduce consumption of imported natural gas of approximately 600,000 MWh or 51,600 toe, with economic and environmental savings.
- (13) With regard to electricity, the whole district heating sector provides 5% of the electricity generated in Bulgaria. Out of this, it is estimated that Toplofikacia accounts for around 70%. In terms of installed capacity, Toplofikacia accounts- as of 31/12/2018- for 1.58% of the total capacity in Bulgaria (198 MW out of 12.493 MW x year). In particular, out of the around 46,000 GWh produced yearly (in 2018) in Bulgaria, Toplofikacia production amounts to 1.82% of the total production. The expected increase of the installed capacity of Toplofikacia (following the realization of the RDF CHP project) would be equal to 0.14% with a marginal effect on the company's participation in the electricity mix of Bulgaria. In terms of volumes of produced electricity, Bulgarian Authorities estimate that the increase due to the project would be of around 0.07% on a yearly basis (forecasted at 1.89% x year). In any case, Bulgaria clarified that the project company is under an obligation to sell all its electricity to the IBEX/organized market in Bulgaria, based on the Bulgarian Energy Act.
- (14) With regard to the waste market, there exist around 55 waste management regional systems in Bulgaria, treating an overall amount of around 3,000,000 tons of household waste⁷. The MBT plant operated by the Sofia Municipality and object of the 1st and 2nd phase of the project is in operation since 2015 and

⁷ According to data of the National Statistical Institute for 2017, the total generated municipal waste in the Southwestern Region is 1,072,175 tonnes, from 3,079,545 total for the country. 747,986 tonnes of the household waste in the Southwestern Region has been generated on the territory of the capital and 111,616 tonnes on the territory of the Sofia Region.

produces annually over 180,000 tons of waste classified as RDF⁸ - (refuse-derived fuel). The RDF waste primarily consists of the combustible fraction of municipal waste that is not appropriate for recycling and from which secondary materials for recycling have already been extracted by the MBT facility.

⁸ The input capacity of the MBT facility of 410,000 t./annual of municipal wastes, is object of treatment as follows:- Approximately 39,000 t./a recyclables;- 180,000 t./a. RDF;- 116,000 t/a. moisture losses from bio-drying process;- 75,000 t/a. residues for landfilling.

- (15) In principle, there are three options to use the RDF:
- Option 1 – Landfilling of the RDF
 - Option 2 - Co-combustion of the RDF in industrial firing; and
 - Option 3 - Combustion in a specially designed RDF CHP plant.
- (16) Given Bulgaria’s needs to reduce the amount of landfill waste to comply with landfill targets and the need to comply with the waste hierarchy principle, the first option could not be explored. Therefore only the second and third options were envisaged. The second option was only a temporary solution, as noted in the 2012 Commission decision of approval of the ERDF grant. Based on this option, Sofia Municipality has already tendered out RDF for combustion in cement kilns and other facilities- located at significant distance from the RDF production plant, with mixed results, also linked to the demanding and costly requirements of purchasers (in terms of RDF parameters and gate fees).
- (17) Considering that at present, as submitted by Bulgarian Authorities, there is no competitive market of RDF in Bulgaria, only the third option was applicable to this case as the project would be the only waste-to-energy installation that could satisfy the need of Sofia municipality for an efficient utilization of RDF in compliance with the current circular economy environmental requirements and the waste hierarchy.

The beneficiary of the aid measures

- (18) The beneficiary of the measure is the thermal energy company Toplofikacia Sofia EAD (Toplofikacia), controlled at 100% by the Sofia municipality.
- (19) The beneficiary is the owner of other cogeneration and heating generation installations and also the owner of the municipal heat distribution network in Sofia (with a length of overall 2,014 KM pipes), and the only licenced operator of district heating for the Sofia municipality.
- (20) The project investment is located in a NUTS2 Region “BG41Yugozapaden (Southwestern)”, Sofia capital. The region is eligible for assistance under Article 107(3) (a) TFEU⁹.

⁹ Pursuant to Commission’s decision in case SA.38667 2014/N.

2.4. Scope of the aid measures

The Sofia RDF CHP project

- (21) The scope of the Sofia RDF CHP project includes the construction of a high-efficient waste-to-energy cogeneration plant of a thermal capacity of approximately 55 MW and electric capacity of 19 MW.

Table 1 - Planned output of the CHP plant

	Unit	Value
Electricity capacity	MW _e	19
Net electricity production	GWh/year	152
Thermal capacity	MW _t	55
Heat production	TJ	1 584
	GWht	440
Net electrical Efficiency		23.4 %
Overall efficiency (heat and net power)		91.1 %

- (22) The project consists of following main systems:
- RDF bunker for storage (bunker volume corresponds to seven days of production)
 - Furnace (moving grate mass burn technology with nominal treatment capacity of 22.5 t/h at 13 MJ/kg)
 - Boiler (horizontal with steam parameters 60 bar, 425 °C)
 - Flue gas treatment (cooling tower/reactor, bag filter, flue gas condenser, ID Fan and emission monitoring system)
 - Selective non-catalytic system of reduction (SNCR) of nitric oxide gases;
 - Stack
 - Turbine/generator (for power production, gross power production 21 MW)
 - District heating production (supply via integrated heat storage tank; Production capacity 55 MW incl. condensation, heat storage capacity: 230 MWh) heat storage tank
 - Ancillary equipment (component cooling system, UPS, cranes and CMS etc.).
- (23) The starting of construction of the plant is planned by 2020, to be completed by end of 2023.

Fuel used by the CHP plant

- (24) The approximately 180,000 tonnes of waste per year that will be processed through thermal recovery in the Sofia RDF CHP plant will originate from the municipally-owned municipal waste management facilities in Sofia.
- (25) Bulgaria confirmed that the unused potential of the concerned portion of the municipal waste would be lost if not used in this plant. As mentioned above in recitals (15)(16), there are no other waste-to-energy plants in Bulgaria, and, according to Bulgaria, the alternative use of the energy component of RDF in the Sofia Region through firing in cement plants is not economically viable due to too long transport distances, as well as too demanding requirements in terms of price paid (gate fees) and quality and delivery parameters by cement plants.

2.5. Form of aid, eligible costs and aid intensity

- (26) The envisaged aid is provided through two distinct measures:
- i) a direct non-reimbursable grant stemming from the EU structural funds EUR 90,826,035 (177,640,284 BGN);
 - ii) a loan at a preferential rate of [...]** % granted by the Sofia municipality to the project company (Toplofikacia)- based on an underlying loan from EIB granted to Sofia municipality- for an aid-equivalent amount of EUR 2,984,448 million (5,837,072 BGN).
- (27) Eligible costs are calculated as the difference between the baseline scenario investment and the counterfactual scenario investment, the latter being the construction of a gas-fired boiler facility with an equivalent heat output to the proposed CHP plant. Estimates for the investment costs are derived from previous projects of gas-fueled heat-only boilers (HOB) undertaken by the beneficiary¹⁰.
- (28) The total investment costs estimated by Bulgaria amount to (in current prices under the given time schedule) EUR 157,538,011 net of VAT (308,117,568 BGN).
- (29) On the other hand, the Bulgarian authorities estimate that the investment cost for the reference gas-fired HOB facility, with heat capacity of 55 MW, amount to EUR [...] BGN).

**Parts of figures in the text have been redacted so as not to divulge confidential information; those figures are enclosed in ranges in square brackets.

¹⁰ As submitted by Bulgaria, with own funds, in the last 10-15 years, 7 gas-fired heat-only boilers have been built by Toplofikacia. Reconstruction represents erection of new boilers, which comply with the modern technical requirements – gas tight design, implemented with membrane panels, low emission combustion systems, fully automatic control of the processes and continuous monitoring system of the outgoing flue gases. In particular, the construction of gas-fired boiler VK-100, No.6 in TPP Sofia East, with heat capacity 100 MW, is used for the purposes of the counterfactual scenario. It should be noted that the construction of boiler VK-100, No.6, was implemented with own engineering resources and the investment costs made by the company could be verified.

(30) A breakdown of the costs of the RDF CHP facility is shown in the table below.

Table 3. Investment Costs **	2019	2020	2021	2022	TOTAL
The division of expenditures for fixed assets					
Land preparation	[..]	[..]	[..]	[..]	[..]
Buildings and premises	[..]	[..]	[..]	[..]	[..]
Objects of civil and marine engineering	[..]	[..]	[..]	[..]	[..]
Boilers and power machines	[..]	[..]	[..]	[..]	[..]
Filters, press, driers	[..]	[..]	[..]	[..]	[..]
Contingency	[..]	[..]	[..]	[..]	[..]
Project preparation and management	[..]	[..]	[..]	[..]	[..]
TOTAL	[..]	[..]	[..]	[..]	[..]
Cost of constructing the reference facility					[..]
TOTAL - eligible costs minus cost of constructing the reference facility					156,350,805

- (31) In order to secure enough financing for the project besides the ESIF amounts devolved to the project company-, the municipality of Sofia secured a loan from the EIB of EUR 66,712,000, which will be transferred by the municipality to Toplofikacia.
- (32) The conditions of the loan from Sofia municipality to the project company are the same as the EIB loan, with a duration of 19 years (including four years of grace period) and a preferential rate of interest of [...]%. The loan is secured with a special pledge over major part of the commercial enterprise of the beneficiary and notably all assets and receivables relating to the operation of the CHP plant.
- (33) Since the interest rate of the EIB loan does not correspond to the applicable market level rates, the aid equivalent of the preferential interest of the loan has been calculated by Bulgarian Authorities in accordance with the *Communication from the Commission on the revision of the method for setting the reference and discount rates (2008/C 14/02)*.

**Parts of figures in the text and the table have been redacted so as not to divulge confidential information.

- (34) Regarding the rating of the beneficiary, Bulgarian Authorities have submitted that, in the absence of higher credit rating, Toplofikacia falls at least into the rating category "Weak (B)" of the Communication, above the "CCC" and others below ("Bad / Financial difficulties").
- (35) On the level of collateral, as submitted by the Bulgarian Authorities, the loan transferred by the municipality to Toplofikacia will be secured by a first-ranking special pledge on a substantial part of its assets/"going concern", and all rights, obligations and factual relationships relating to the operation of the CHP plant, including all assets and receivables. Furthermore, Bulgaria has brought forward the following elements to substantiate the "high level" of collateral: i) the project assets' value would exceed the loan amount more than 2 times, ii) the value of pledged receivables would also exceed the loan amount and ii) based on the company's Annual Financial Statement 2018, the loan-to-outstanding-receivables ratio is 61.19%.
- (36) The following calculations have been submitted by the Bulgarian Authorities in order to determine the amount of the aid:
- The EIB loan will be provided for 15 years with four years grace period and interest rate of [...]%. The interest net present value (NPV) amounts to EUR [...] million.
 - A loan, according to the market conditions, would be provided for 15 years with four years grace period and interest rate of [...]%. The interest NPV in this case amounts to EUR [...] million.
 - The applied discount rate of 0.85% has been determined on the basis of the base rate for Eurozone countries: -0.15% (to 1/08/2019) plus fixed margin of 100 basis points.

**Parts of figures in the text have been redacted so as not to divulge confidential information.

- (37) According to the overall calculations, and based on the qualification of the rating of Toplofikacia as “B”, with “high collateral” the aid equivalent of the preferential loan interest amounts to EUR 2,984,448 million (5,837,072 BGN).

Maximum aid	Aid sources
Eligible costs: Investment costs (EUR [...]) ([...]BGN) minus Counterfactual investment: (EUR [...]) ([...]BGN) = 156 350 805 (EUR) (305 795 594 BGN) /Environmental protection and Energy State Aid Guidelines (EEAG) Aid intensity 60%= (45 + 15%)	i) ESIF grant: EUR 90 826 035 (177 640 284 BGN) ii) Loan EUR 2 984 448 million (5 837 072 BGN)
Total: EUR 93 810 483 (183 477 356 BGN)	Total: EUR 93 810 483 (183 477 356 BGN)

(table based on data submitted by Bulgarian Authorities)

- (38) Accordingly, the ESIF grant, requested by the Bulgarian Authorities, will be capped to EUR 90,826,035 (177,640,284 BGN), in order to comply with the overall aid intensity of 60% (which is 45% according to Annex I of the Commission Guidelines on State aid for environmental protection and energy 2014/2020 (EEAG)¹¹, for a large enterprise for aid for cogeneration installations, plus 15% for NUTS2 regions eligible for assistance under Art. 107(3) a TFEU).
- (39) The Bulgarian Authorities submit that the beneficiary does not have sufficient incentives to invest in high efficient RDF-CHP, since investing in gas-fired HOBs would be much cheaper. Without the aid, the project would result in a negative NPV (EUR -[...]) and a negative IRR (-[...]).
- (40) With the aid, Sofia RDF CHP reaches a positive NPV EUR [...] and an IRR of [...]. This IRR is in real terms, post-tax and is in line with the EWRC (the Bulgarian regulator) average rate of return/WACC for the sector 7%¹². Bulgaria argues that this is the appropriate level of profitability considering the risk profile

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¹¹ OJ C 200, 28.06.2014, p.1.

¹² Annex 10 - Decision № II-18/1.07.2019;page 7; according to the decision the rate of return on equity for all companies in the sector are designated under item 37 of the Guidelines-NB, taking into account the requirements of Article 23, item 4 of the Energy act (the principle of ensuring a balance between the interests of energy enterprises and customers), the macroeconomic environment, the specific conditions of regulation of companies, as well as providing financial resources to cover additional non-included costs arising from legal obligations is 7%).

of the project and that a lower rate of return would not encourage market participants to invest in such project.

- (41) The overall aid amount is calculated in order to achieve this IRR value by taking into account the installation and operating costs and revenues of the cogeneration installation, with the overall aid intensity capped to 60%.

2.6. Budget and financing

- (42) The investment aid amounts to a maximum of EUR 90,826,035 (177,640,284 BGN) stemming from EU Structural Funds (ESIF). These amounts would be granted with disbursements over the next three years, until 31 December 2023.
- (43) The aid equivalent amount of the loan granted to the beneficiary by Sofia Municipality, based on the underlying EIB loan, as calculated above, is EUR 2,984,448 million (5,837,072 BGN), imputable to the Sofia municipality (Bulgarian State) budget.
- (44) The ESIF co-financing aid will be granted to Toploflikacia after an approval by the European Commission under the terms of the Commission's decision and in compliance with Regulation (EC) 1303/2013¹³.
- (45) The EIB loan agreement has been signed between the Bank and the Sofia Municipality¹⁴. The Bulgarian Authorities clarified that the loan will be transferred to Toploflikacia only after the European Commission's non objection decision.

2.7. Cumulation, transparency and other

- (46) The Bulgarian authorities confirmed that no cumulation with other investment aid will take place. However, the beneficiary may apply for operating aid for the support to high-efficient cogeneration installations, also based on recent Bulgarian legislation on CHP¹⁵. Nevertheless, as clarified by the Bulgarian Authorities, any investment aid will be deducted from any future operating aid¹⁶.

¹³ OJ L 347, 20-12-2013, p. 320.

¹⁴ The EIB loan sees the beneficiary as party to the Loan contract for a series of technical terms and conditions (reporting, monitoring obligations etc.).

¹⁵ Article 163e of the Bulgarian Energy Act. As clarified by Bulgarian Authorities, operating aid to new CHP installations shall be awarded only upon participation in an auction, when an existing installation for production of electricity from high-efficiency CHP has been decommissioned and the granting of the aid would not lead to an overrun of the budget of the aid scheme approved by the European Commission. Exceptions from the auction requirement would be possible only for reconstruction and modernization of existing installations which require their new "commissioning", and for a limited number of projects or territories on an *ad hoc* basis, upon the approval of the European Commission.

¹⁶ Bulgarian clarified that the currently applicable rules adopted by EWRC already prohibit the cumulation of investment aid and operative aid. According to item 25 and item 30 of the *Guidelines for The Formation Of The Prices Of Heat And Electricity From Cogeneration Regulated By The Rate Of Return On Capital Method*, issued by the EWRC pursuant to Art. 24, para 1 of Ordinance No. 1 Of March 14, 2017, Regulating The Prices Of Electricity From Renewable Energy Sources And High-Efficient CHP, the value of the assets acquired free of charge, i.e. through grant schemes, donations,

- (47) Bulgaria confirmed that all transparency requirements set out in points 104-106 of the EEAG, as corrected by the corrigendum adopted by the Commission¹⁷, will be complied with¹⁸.
- (48) Bulgaria confirmed that the project complies with the Directive 2008/98/EC on waste (“Waste Directive”) and in particular with the waste hierarchy set out therein.¹⁹ As stated by Bulgaria, the waste that will be subject to energy recovery in the CHP installation has been subject to preliminary treatment in the MBT facility in order to extract recyclable materials and cannot be further subject to recycling. If the RDF is not subject to energy recovery, it would be landfilled and this would be contrary to the waste hierarchy, which favours waste recovery over disposal. Finally, Bulgaria confirmed having introduced separate collection in line with the obligations applicable in accordance with the Waste Directive, and stated that the project will not prevent it from meeting the 2025, 2030 and 2035 targets for the recycling of municipal waste set out in the Waste Directive.
- (49) Bulgaria confirmed that the project company is neither a company in difficulty, as defined by the applicable Guidelines on State aid for rescuing and restructuring firms in difficulty, showing detailed financial calculations, nor a company subject to outstanding recovery order (*Deggendorf* rule). Furthermore, Bulgaria committed to suspend the award and/or payment of the notified aid if the beneficiary still has at its disposal earlier unlawful aid that was declared incompatible by a Commission decision, until the 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 AID

3.1. Existence of aid

- (50) Article 107(1) TFEU provides that "*any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market*". The application of these cumulative conditions is examined below.
- (51) The aid to finance the Sofia RDF project stems from both EU Structural Funds (ESIF) used by Bulgaria and the aid component of the loan granted by the Sofia

aids etc., is deducted from the regulatory asset base and the costs, eligible for compensation with premium. This requirement is in line with item 3.4.5 of the EEAG and creates a safeguard on Bulgarian law level that investment aid to high-efficient CHP installations cannot be cumulated with operating aid.

¹⁷ OJ C 290, 10.08.2016, p.11.

¹⁸ According to Article 28 of the Council of ministers decree 162/2016 for each approved project the managing authority shall publish at the programme’s website and in UMIS 2020 information about the grant provided as per Annex XII from Regulation 1303/2013 requires. The relevant information will be published via the following websites: <https://www.eufunds.bg/bg/opus> and <http://www.sofia.bg>.

¹⁹ See Article 4 (1) of Directive 2008/98/EC.

municipality to Toplofikacia, the beneficiary. In both cases, the decisions to award the grant and the loan are taken by State authorities. Therefore, the Commission considers that for both aid measures, the aid is granted from State resources and is imputable to the State within the meaning of Article 107(1) TFEU.

- (52) The aid provides the beneficiary with resources in the form of ESIF funds and of a loan at preferential rates that would otherwise not be available on the market or not at similar conditions. Other energy operators (in the electricity and heat markets) will not receive this type of investment aid for the construction of their plants. The Commission therefore concludes that the measure gives an advantage to Toplofikacia and that this advantage is of a selective nature.
- (53) The producers of energy compete with each other in an open market to supply customers. Energy can be sold and transported from one Member State to another. It is therefore likely that the implementation of this public support will affect the conditions of trade and distort competition between Member States.
- (54) The Commission therefore concludes that the notified measure constitutes State aid within the meaning of Article 107(1) TFEU. It is thus necessary to consider whether the aid measure is compatible with the internal market.

3.2. Legality of the aid measure

- (55) Bulgaria has fulfilled its obligation according to Article 108(3) TFEU by notifying the investment aid before putting it into effect, as set out in recital (8).

3.3. Compatibility

- (56) The objective of the notified measure is to promote high-efficiency combined heat and power production, since the production in such cogeneration installations creates primary energy savings compared to separate production of heat and electricity. Consequently, this aid measure falls within the scope of the EEAG.
- (57) The Commission has assessed the compatibility of the aid measure on the basis of the EEAG, in particular the general compatibility conditions in Section 3.2 and the rules on energy efficiency including cogeneration in Section 3.4.

3.3.1. Objective of common interest

- (58) The aim of the aid measure is to achieve primary energy savings through electricity production in high-efficient cogeneration plant, as set out in paragraph 139 of the EEAG. As laid down in Directive 2012/27/EU on energy efficiency, the EU set the objective of saving 20% of the Union's primary energy consumption by 2020, as well as minus 32.5% by 2030. Bulgaria confirmed that the plant will meet the criteria of high-efficient cogeneration within the meaning of Directive 2012/27/EU, as detailed in recital (4) with primary energy savings estimated at 46.5%, thus in line with paragraphs 139 and 141 of the EEAG.
- (59) With regard to the requirement of paragraph 140 of the EEAG, Bulgaria confirmed that the plant would burn waste in compliance with the waste hierarchy principles set out in Directive 2008/98/EC, as detailed in recital (48).

- (60) The Commission therefore considers that the individual aid to Toplofikacia is aimed at an objective of common interest in accordance with Article 107(3)(c) TFEU and Section 3.4.1 of the EEAG.

3.3.2. *Need for State intervention and appropriateness of the aid*

- (61) As recognised in paragraph 142 of the EEAG, 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.
- (62) Bulgaria demonstrated that the project would not be profitable without support, as shown in recital (39). Undertakings do not have sufficient incentives to invest into expensive and complex projects such as waste-to-energy high-efficient cogeneration installations and would, without public support, construct a heating plant which would not combine the production of heat and electricity (cogeneration). For this reason, public support is needed to attain environmental objectives.
- (63) Finally, paragraph 145 of the EEAG states that State aid may be considered an appropriate instrument to finance energy efficiency measures independently of the form in which it is granted.
- (64) The Commission therefore concludes that the notified aid measures to Toplofikacia CHP are necessary and that they are an appropriate instrument to address objective of common interest.

3.3.3. *Incentive effect*

- (65) The incentive effect is present if the aid changes the beneficiary's behaviour towards reaching the objective of common interest, a change in behaviour which it would not undertake without the aid.
- (66) Paragraph 60 of the EEAG states that the incentive effect is to be identified through the counterfactual scenario analysis, comparing the levels of intended activity with aid and without the aid.
- (67) For the conclusion of financial profitability of an investment, two main financial performance indicators are calculated: i) the net present value of the investments (NPV) and ii) the internal rate of return on investments (IRR). In the absence of financial support in the form of both the direct grant and the soft loan, the plant's financial results would be negative, with a NPV of EUR –[...] and a negative IRR (-[...]%).
- (68) With the aid, Sofia CHP reaches positive NPV EUR [...] and an IRR [...] % (in real terms, post-tax) which is in line with the EWRC average WACC/rate of return for the sector of 7%. The Commission agrees with Bulgaria's arguments that IRR entailed by the project without receiving aid would be too low compared to the market profit expectations defined by WACC, as also described in recital (40) above. Without aid, the project would therefore not be sufficiently profitable to incentivise market participants to invest.

- (69) The Commission therefore concludes that the aid brings an incentive to the beneficiary investing in the Toplofikacia CHP project so as to reach the objective of common interest.

**Parts of figures in the text have been redacted so as not to divulge confidential information.

3.3.4. *Proportionality*

- (70) As stated in Section 3.2.5.1 of the EEAG, aid is considered to be proportionate if it is limited to the minimum needed to achieve the environmental protection or energy objective. Where the costs of achieving the common interest objective cannot be identified in the total investment costs as a separate investment, the aid is considered to be limited to the minimum necessary if it corresponds to the net extra costs necessary to meet the objective, compared to the counterfactual scenario in the absence of aid.
- (71) Bulgaria submitted documents calculating eligible costs (linked to the project specific investment costs) based on the counterfactual scenario of a construction of a gas-fired boiler facility with an equivalent heat output. In this regard, the Commission notes that the calculation of the eligible costs is strictly linked to the investment project and the counterfactual (heat-only boiler) as per Annex 2 of the EEAG, in line with similar cases, for plants with a preponderant heat production²⁰.
- (72) In particular, with regard to the calculation of the aid equivalent in the loan from Sofia municipality to Toplofikacia, the Commission takes the view that in the absence of a market benchmark for the loan which replicates the conditions of the EIB loan, Bulgaria was right to apply the principles of the Guarantee Notice and Communication on reference rates (Reference Rate Communication). The calculations submitted by Bulgaria pursuant to the Communication on reference rates in recitals (32) to (35) are considered adequate in view of the beneficiary's risk profile and its corporate structure. Furthermore, the circumstance that all of the project CHP assets will be part of the collateral (valued two times as much as the loan amount), as well as other company assets- totaling a “loan to outstanding receivables” ratio of 61.19%- corroborate the “high collateral” character of the loan.
- (73) Therefore, the Member State properly calculated the aid element in the infra-group loan by subtracting the present values of the interest on the loan as per the Reference Rate Communication for the given beneficiary's risk profile and the collateralisation level from the actual interests charged on the loan. As a result, the aid amount equivalent of the loan was quantified at EUR 2,984,448.
- (74) Based on the combination of the two aid measures, investment aid under ESIF (EUR 90,826,035) and the aid equivalent in the loan from the Sofia municipality- based on the underlying EIB loan (EUR 2,984,448)-, the overall aid amount

²⁰ See SA.49634 France - Individual aid to ELM - district heating network in Metropolitan Lyon State Aid, see also SA.51614 (2018/N) – Poland- Installation grant for waste-to-energy high-efficiency cogeneration power plant in Olsztyn, as well as case SA.55100(2019/N) - Aid for the construction of the municipal waste thermal treatment plant in Gdańsk, not yet published.

involved in the project is EUR 93,810,483 (183,477,356 BGN). This translates into an aid intensity of 60%, as per the threshold set out in the EEAG for a CHP project in a NUTS level 2 region (cf. recital (37) above)²¹.

- (75) As mentioned in the recital (67) above, the Commission agrees with Bulgaria that the IRR of [...] % is appropriate to incentivise market participants to invest in the project. The Commission also notes that this rate of return is in line with rates previously approved by the Commission for similar projects in other Member States²². Finally, the Commission notes that the value of the IRR of [...] % used to calculate the aid amount is consistent with the value of WACC for the sector, as approved by the Regulator for this type of projects.
- (76) The Commission therefore concludes that the notified aid measure is proportionate.

3.3.5. *Distortion of competition and balancing test*

- (77) Paragraph 88 of the EEAG recalls that for aid to be found compatible with the internal market, the negative effects of the aid measure in terms of distortions of competition and impact on trade between Member States must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest.
- (78) Paragraph 90 of the EEAG explains that the Commission considers that aid for environmental purposes will by its very nature tend to favour environmentally friendly products and technologies at the expense of other, more polluting ones. Moreover, the effect of the aid will in principle not be viewed as an undue distortion of competition since it is inherently linked to its very objective.
- (79) The Commission notes that the market for district heating is local since the district heating would only be delivered to the customers connected to the municipal heat distribution network in Sofia.
- (80) The beneficiary of the notified measure is the sole provider of heat through the Sofia district heating network. The district heating in Bulgaria is subject to tariff regulation, so that Toplofikacia, as other district heating providers, provides heat at a regulated price, so that the aid would not lead to an increase in charges for the citizens. On the contrary, the use of waste as fuel- instead of gas- will lead to lower heat charges for the users.
- (81) On the electricity market, Bulgaria submitted that the total electric capacity of Toplofikacia CHP will be 19 MW country-wide, with total production amounting on a yearly basis to 846 GWH (2018). Overall, Toplofikacia accounts for 1.58% of

²¹ Cf. Annex I of the EEAG setting aid intensity applied for district heating at 45%, increased by a bonus of 15% points for regions covered by Article 107(3)(1) TFEU.

**Parts of figures in the text have been redacted so as not to divulge confidential information.

²² See for instance the decisions in cases SA.41539 (2016/N) – Investment aid for high-efficiency cogeneration power plant in Vilnius, SA.44922 (2017/N) – Investment aid for the conversion of a CHP plant in Denmark, SA.38762 (2015/C) – Investment Contract for Lynemouth Power Station Biomass Conversion, SA.38796 (2014/N) – Teesside Dedicated Biomass CHP Project.

the electricity generation in country-wide (2018), with electricity production (in volume) amounting to 1.82% of the total production (in 2018). Even after the expected increase of Toplofikacia's installed capacity, following the construction of the Sofia CHP plant, its share in the total installed electricity capacity in Bulgaria will remain small, with an estimated increase of 0.16% in terms of installed capacity and 0.07% per year in terms of electricity production (in volumes). The Commission concludes that the support to Toplofikacia will therefore have no significant impact on the electricity generation and wholesale supply market.

- (82) In view of the above, the Commission concludes that the measure is not expected to lead to undue distortions in any of the markets concerned by Toplofikacia.

3.3.6. Transparency of aid and other requirements

- (83) Bulgaria has committed to comply with the transparency requirements set out in section 3.2.7 EEAG.
- (84) Based on commitments referred to in recitals (49), Bulgaria complies with paragraphs 16 and 17 of the EEAG on undertakings in difficulty and subject to recovery orders.

4. 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) of the Treaty on the Functioning of the European Union.

Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission