Subsidies:
A driving force or obstruction for the Polish energy transition?

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Authors:
Juliette Delarue (ClientEarth): point 1.4

Julia Kozakiewicz (ClientEarth): point 2.7.1-2.7.2; 2.8.1-2.8.2; 2.9.1; 4.2.1

Wojciech Kukuła (ClientEarth): point 1.3; 2.1.1-2.1.2; 2.2.1-2.2.2; 2.3.1-2.3.2; 2.4.1-2.4.2; 2.5.1-2.5.2; 2.6.1-2.6.2; 2.10.1-2.10.2; 4.3.1; 5.1-5.2

Marcin Stoczkiewicz, Ph.D. (ClientEarth): point 1.1-1.2; 2.9.2

WiseEuropa Team (Michał Karpiuk, Karolina Marszał, Piotr Micuła, Aleksander Śniegocki): pkt 2.1.3-2.1.4; 2.2.3-2.2.4; 2.3.3-2.3.4; 2.4.3.-2.4.4; 2.5.3-2.5.4; 2.6.3-2.6.4; 2.7.3-2.7.4; 2.8.3-2.8.4; 2.9.3-2.9.4; 2.10.3-4.1; 4.2.2-4.2.3; 5.3-5.4

Cooperation: Anna Frączyk, Ranja Łuszczek (ClientEarth); Zofia Wetmańska (WiseEuropa)

Translation: Bireta professional translations

Graphic design: Sylwia Niedaszkowska

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Subsidies: A driving force or obstruction for the Polish energy transition?

ANALYSIS OF STATE AID FOR THE POWER SECTOR IN POLAND

Warsaw, April 2020

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INTRODUCTION

The power sector is an economic sector with an exceptionally high level of State intervention. The specific nature of the energy market encourages decision makers to adopt increasingly new, often not sufficiently thought-out regulations. Many interventions change market rules to the extent that they favor certain players over others. Practice shows that in such cases, State aid is most often involved.

Moreover, the power sector is at the forefront of the list of economic sectors which the authorities help most. At the same time, in Poland this sector accounts for about half of greenhouse gas emissions. In the context of the necessity to reduce the emission of these gases, resulting from the international obligations of Poland and the EU policy, it is crucial to ask the question about the impact of public subsidies on the Polish energy transition. This report provides an answer to this question.

The purpose of the publication is to comprehensively present the mechanisms of public subsidies for the power sector in Poland and to assess the effectiveness of their functioning. The vast majority of these subsidies constitute State aid within the meaning of the Treaty on the Functioning of the European Union. The report also proposes changes in the approach to the State intervention in the power sector.

The publication combines legal parts prepared by ClientEarth and economic parts prepared by WiseEuropa. The authors of individual sections are indicated on the second cover.

The report consists of five chapters. The first sets out the legal bases for State aid to energy undertakings. In the second part we analyze the individual support schemes for the domestic power sector. The third chapter contains a case study concerning the Bełchatów Power Plant, the largest power plant in the country and at the same time the beneficiary of many aid mechanisms. The general conclusions from the analysis can be found in chapter 4. At this point, the link between the power sector and mining is also discussed. The last, fifth part of the document compares domestic measures with mechanisms in Western Europe.

The report takes into account the legal and factual status as of December 1, 2019.

MAIN CONCLUSIONS

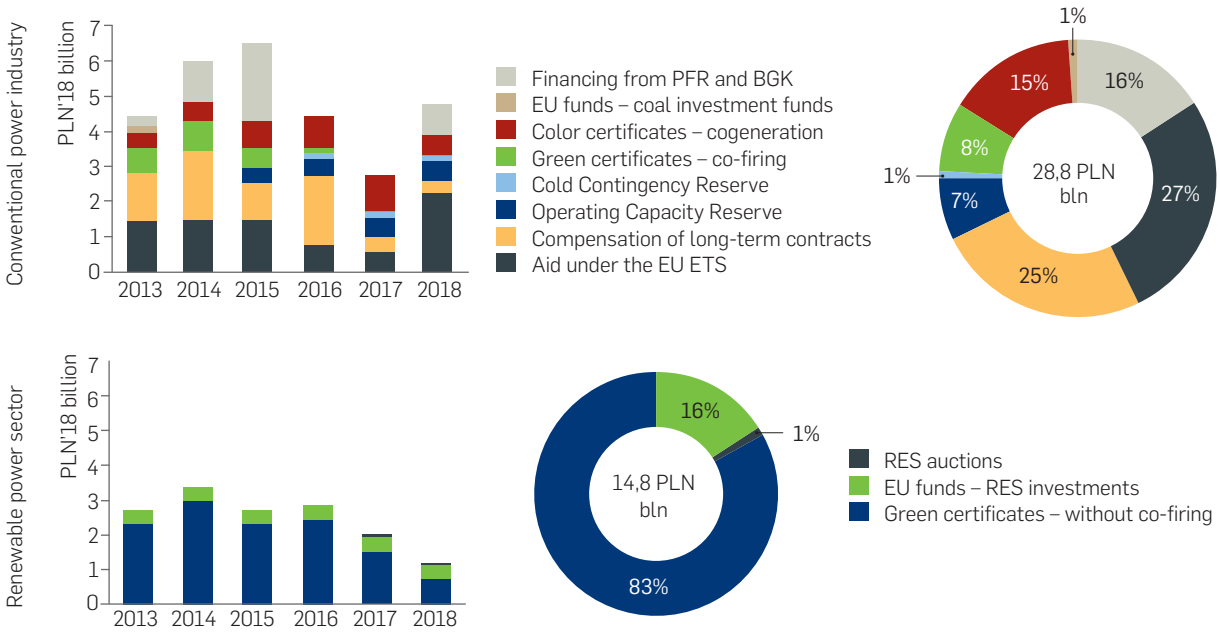
- In 2013-2018 Poland allocated twice as much public funds to help conventional power sector (mostly coal) than for the renewable power sector[1]. Such distribution of subsidies results in mutual elimination of the effects of the aid, preserving the Polish power sector and hindering its transformation towards low-emission technologies. This transition is also slowed down by the progressive link between the power sector and mining.
- The vast majority of the existing support schemes for the Polish power sector should be considered as inefficient in terms of costs and environment, especially in comparison to the countries of Western Europe. This applies to both the support schemes for the conventional power sector (in particular free CO_2 emission allowances and capacity mechanisms) and the renewable power sector (the so-called green certificate scheme for years supporting co-firing of biomass with coal, which did not have any permanent ecological effects).
- State aid for the Bełchatów Power Plant also proves to be inefficient in the context of a long-term energy transition. The average annual value of support for this power plant is estimated at approx. 9-10% of its total revenues. In particular, in the years 2013-2019 the Bełchatów Power Plant received approx. PLN 2.5 billion for free emission allowances, and for the years 2021-2025 the State guaranteed the same amount of support within the capacity market.
- The anti-market mechanisms contained in the so-called Energy Prices Act, which in addition, for the first half of 2019, is not compliant with the requirements of EU State aid, stand out as extremely inefficient. The funds allocated to compensation under the EU ETS should not cover the actual costs of consumption of high-carbon energy, but support low-carbon generation and energy saving technologies.
- The multibillion involvement of State institutions such as Polski Fundusz Rozwoju (PFR) and Bank Gospodarstwa Krajowego (BGK) in coal projects entails an alternative cost in the form of a reduction in available funding that could be allocated to low-carbon investments. PFR and BGK can and should support green transition.
- EU funds (approximately PLN 6 billion of support for renewable power sector in the perspective of 2007-2020) and a new RES auction scheme are the positive examples, translating into stimulation of the Polish energy transition. In the long term, the net savings from contracts under RES auctions will outweigh the costs, translating into a decrease in the bills of electricity customers. As regards the aid already contracted, which will be granted in the next decade, support for conventional units in the capacity market will generate many times higher costs for consumers than the aid for new RES plants. In 2021-2023, the estimated net cost of the capacity market will amount to approx. PLN 11 billion, whereas the net cost of the RES auction scheme – only PLN 0.3 billion.
- The vast majority of the support mechanisms presented in the report constitute State aid within the meaning of EU law. The absence of aid was found only in relation to two smaller mechanisms, which are no longer in force[2]. At least four measures, which have not been officially notified to the European Commission (EC), raise serious doubts as to whether the conditions for State aid are met: existing ca-

1 As regards the detailed structure of the aid, see figure below.
2 It is referred to the obligation to purchase electricity from cogeneration and RES.

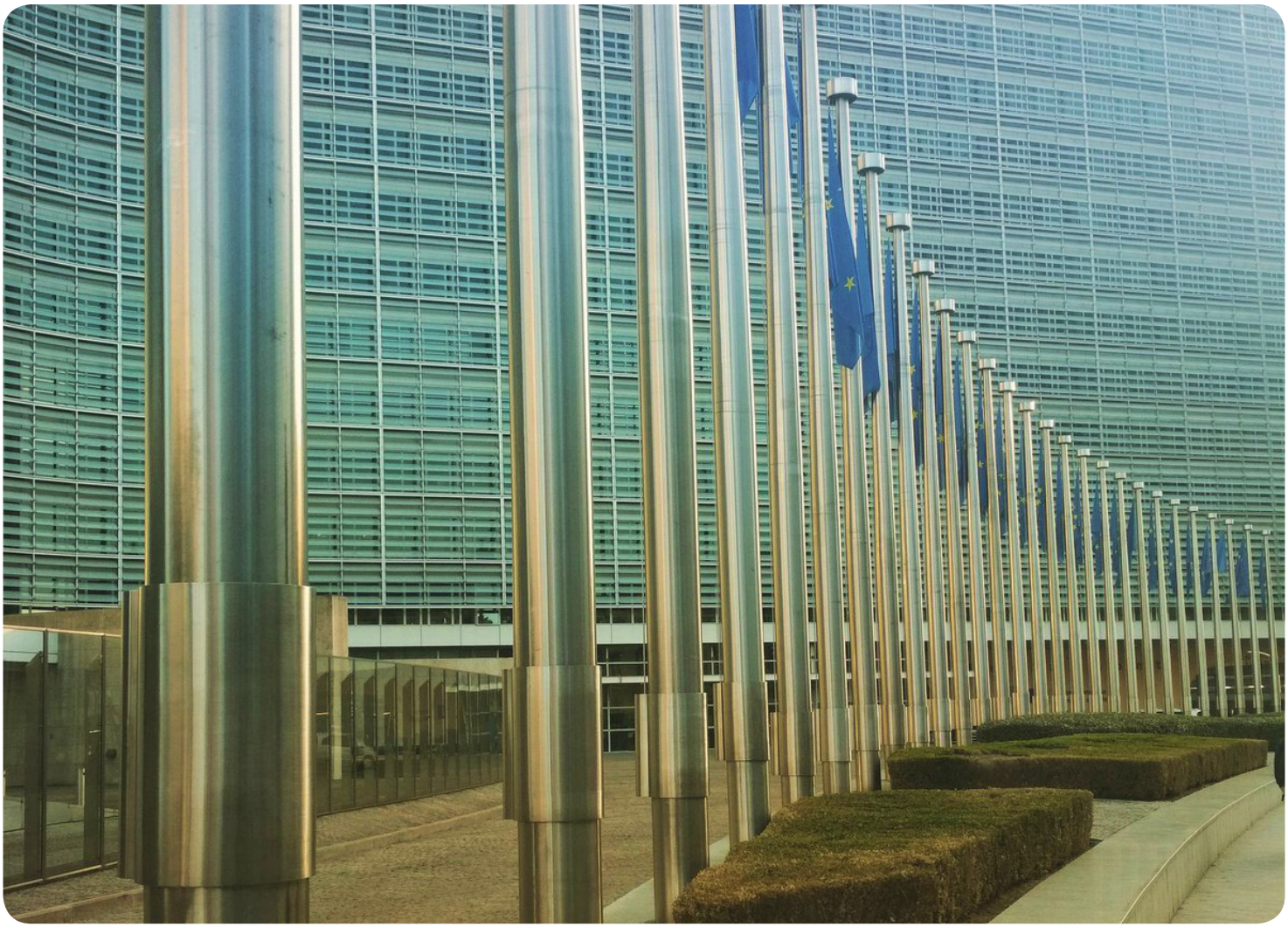
pacity mechanisms, including the Cold Contingency Reserve and the Operational Capacity Reserve; the possibility of recapitalizing energy companies from surplus revenues of Zarządca Rozliczeń; and the compensation scheme under the so-called Energy Prices Act (at least for the first half of 2019). The nature of the involvement of PFR and BGK in the energy sector also raises doubts in this respect.

- Despite a noticeable improvement over the last few years, Polish authorities have still not notified the EC all mechanisms that may constitute State aid. Poland continues to depart from the Western European countries, which have notified the Commission similar schemes to national solutions, and the EC has ultimately recognized them as State aid. The Polish authorities should officially notify the Commission all interventions in the energy sector, which may even potentially constitute an economic advantage for market participants.
- Due to the very good results of the RES auctions conducted so far, it is justified to extend the validity of this support scheme, so that auctions can be conducted also after 2021. According to the applicable wording of the RES Act, this system expires at the end of June 2021.
- In our opinion, energy transition can be increasingly carried out through market price signals. State intervention in the energy sector should aim at achieving additional environmental benefits, in particular by promoting solutions significantly reducing carbon dioxide emissions.

Value of support for the Polish power sector in the years 2013-2018 in real terms (PLN '18 billion)



Source: *WiseEuropa own study*



1. STATE AID FOR THE POWER SECTOR

1.1. AID FOR ENERGY UNDERTAKINGS

1.1.1. INTRODUCTORY REMARKS

Not all public subsidies for energy undertakings in economic sense constitute State aid in legal terms. The category "State aid" is defined by the European Union (EU) law. On the other hand, "public aid" is the equivalent in Polish law of the European concept of "State aid". The category of "State aid" is defined only in the EU law. A detailed analysis of the features of State aid and their application to support energy undertakings can be found in the monograph: "Pomoc państwa dla przedsiębiorstw energetycznych" [State aid for energy undertakings][3]. For this reason, only their general characteristics are presented below.

Only a measure which fulfils all the characteristics specified in Article 107 of the Treaty on the Functioning of the European Union (hereinafter referred to as the "TFEU") constitutes State aid.)[4]. These are the following characteristics: firstly, there must be an intervention by the State or through State resourc-

3 M.Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych w prawie Unii Europejskiej [State aid for energy undertakings in the European Union law], Warsaw 2011.

4 OJ of 2004, No. 90, item 864/2, as amended.

es; secondly, that intervention must be capable of affecting trade between the Member States; thirdly, it must provide the beneficiary with the advantage by favoring certain undertakings or the production of certain goods; fourthly, it must distort or threaten to distort competition[5]. The EU institutions have exclusive competence to accept aid granted by the Member States [6].

According to the Court of Justice of the European Union (hereinafter referred to as the "CJEU"): "the imputability of aid to a State is distinct from whether the aid was granted through State resources. The case-law clearly indicates that these are separate and cumulative conditions"[7]. In the judgment on Stardust Marine, the CJEU claimed that, in order to qualify certain advantages as aid within the meaning of the present Article 107(1) TFEU, they must, firstly, be granted directly or indirectly through State resources and, secondly, be imputable to the State[8]. It should be emphasized that the CJEU case-law concerning individual features of State aid has several dozen years and is largely established and settled. However, as a result of market development and trade relations, that case-law is also evolving.

1.1.2 IMPUTABILITY OF THE AID TO THE STATE

In order to determine whether a Member State has granted aid within the meaning of the TFEU, it is necessary to verify whether public authorities have been involved in one way or another in accepting the measure in question[9].

European Commission (hereinafter also referred to as: the "EC" or the "Commission"), in its decision on aid for new generation capacities in Latvia[10], decided that, since the aid measure is financed by a parafiscal charge imposed on consumers by a State-controlled transmission system operator (TSO), that measure fulfills the characteristics of State aid[11]. The decisive factor in this respect was the fact that the Latvian TSO was 100% State-owned. Moreover, both the entire system of payments included in the transmission tariff charged to consumers and the system of payments to the beneficiaries of the measure were determined by the State[12].

In its decision on the aid to the planned Hinkley Point C nuclear power plant, the Commission, in turn, identified the imputability of the aid to the State in the form of contracts for difference resulting from the fact that these contracts were concluded with a public entity[13]. On the other hand, in the case of the British capacity market decision, the Commission concluded that capacity payments are controlled by the State and that the aid is therefore imputable to the State.

5 See the judgment of the CJEU on C-280/00, Altmark Trans, Court Reports 2003, pages I-7747, point 75.
6 See in more detail in: M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 383-385.
7 See the judgment of the General Court of the European Union (hereinafter: the "Court") on T-351/02, Deutche Bahn AG v Commission, Court Reports 2006, pages II-1047, point 103.
8 See the judgment of the CJEU on C-482/99, France v Commission (Stardust Marine), Court Reports 2002, pages I-04397, point 24.
9 Ibid., point 52.
10 See. D. Lagzdina, Support measure to address Shortage in Electricity Supply in Latvia, EStAL, 1/2011, pages 12-14.
11 See EC Decision No. C(2010) 4146.
12 Ibidem, point 18.
13 See EC Decision No. C(2014) 7142 final cor, point 325.

1.1.3 INTERVENTION THROUGH STATE RESOURCES

A measure may be classified as State aid within the meaning of Article 107(1) TFEU only if it comes directly or indirectly from State resources. The CJEU, ruling in Van Tiggele case, stated that where there is no transfer of State resources, the State aid rules do not apply[14]. Similarly, in the Sloman Neptun case the CJEU ruled that benefits granted from resources other than State resources do not fall within the scope of the regulations in question[15] (i.e. the current Articles 107(1) and 108 TFEU).

That line of case-law has been established in the following cases: Kirsammer-Hack[16], Viscido[17], Ecotrade[18] and PreussenElektra[19]. The factor determining the fulfilment of that characteristic is the criterion of control, in terms of the possibility of influencing, in one way or another, the management of resources. The lack of control (influence) by the Member State on the management of specific resources is a factor that prevents this feature from being fulfilled (a determinant of non-fulfilment)[20]. Both the benefits that granted directly through State resources and those granted by public or private entities established or designated by the State fall within the concept of State resources within the meaning of Article 107(1) TFEU[21]. In that sense, this provision covers any funds through which public authorities may actually support undertakings, irrespective of whether those funds are fixed assets of the public sector[22].

> The condition of selectivity is fulfilled in the case of any measure which does not apply to all the undertakings concerned in a Member State

1.1.4 SELECTIVE ADVANTAGE

The CJEU case-law covers the feature of selective advantage in extremely broad terms. The condition of selectivity is fulfilled in the case of any measure which does not apply to all the undertakings concerned in a Member State[23]. For the application of Article 107(1) TFEU, it is necessary to determine whether a State measure favors certain undertakings or the production of certain goods in comparison with others which, in the light of the objectives of the system, are in a comparable factual and legal situation[24].

14 See the judgment of the CJEU on 82/77, Openbaar Ministerie of Netherlands v Van Tiggele, Court Reports 1978, page 25, points 23-25.
15 See the judgment of the CJEU in combined cases C-72/91 and C-73/91, Sloman Neptun Schiffahrts AG v Seebetriebstrat Bodo Ziesmer der Sloman Neptun Schiffahrts AG, Court Reports 1993, pages I-887, point 19.
16 See the judgment of the CJEU on C-189/91, Petra Kirsammer-Hack v. Nurhan Sidal, Court Reports 1993, pages I-6185, point 16.
17 See the judgment of the CJEU in combined cases C-52/97, C-53/97 and C-54/97, Epifanio Viscido et. al. v Ente Poste Italiane, Court Reports 1998, pages I-2629, point 13.
18 See the judgment of the CJEU on C-200/97, Ecotrade, Court Reports 1998, pages I-7907, point 35.
19 See the judgment of the CJEU on C-379/98, PreussenElektra AG v Schleswag AG, Court Reports 2001, pages I-02099, point 58.
20 See in more detail in: M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 93-141.
21 See the judgment of the CJEU on 76/78 Steinike and Weiling v Germany, 1997, page 595, point 21; C-379/98, op. cit., point 58; and C-262/12, Vent de Colere, ECLI:EU:C:2013:851, points 19, 20, 21, 25, 33 and 37.
22 See the judgment of the CJEU on C-677/11, Doux Elevage, ECLI:EU:C:2013:348, point 34; and judgment of the General Court on T-139/09, France v Commission, point 36.
23 See the judgments of the CJEU on C-66/02, Italy v Commission, Court Reports 2005, pages I-10901, point 99; and C-222/04, Minister dell' Economia e delle Finanse v Cassa di Risparmio di Firenze SpA, Court Reports 2006, pages I-289, point 135.
24 See the judgments of the CJEU on C-143/99, Adria-Wien Pipeline, Court Reports 1999, pages I-8365, point 41; C-409/00, Spain v Commission, Court Reports 2003, pages I-1487, point 47; C-126/01, Ministre de l'Economie v GEMO, Court Reports 2003, pages I-13769, point 35; C-308/01, GIL Insurance Ltd. V Commissioners of Customs and Excise, Court Reports 2004, pages I-4777, point 68; C-172/03, Heiser v Finanzamt Innsbruck, Court Reports 2005, pages I-1627, point 40; C-182/03 and C-217/03, Belgium and Forum 187 ASBL v Commission, Court Reports 2006, pages I-5479, point 119; C-88/03, Portugal v Commission, Court Reports 2006, pages I-7115, point 119; C-428/06 to C-434/06, UGT-Roja et.al. V Juntas Generales del Territorio Historico de Vizacya et. al., Court Reports 2008, pages I-6747, point 46; C-487/06 P, British Aggregates Association v Commission, Court Reports 2008, pages I-10505, point 82; and judgments of the General Court on T-233/04, Netherlands v Commission, Court Reports 2008, pages I-591, point 86; T-211/04 and T-215/04, Government of Gibraltar v Commission, Court Reports 2008, pages II-03745, point 78; and T-461/12, Lubeck Airport, point 46 and point 55.

As D. Grespan and S. Santamato point out, any measure of State interference which has the effect of improving the financial standing of an undertaking, constitutes an economic advantage for it[25].

The same applies where State interference does not improve the financial standing of an undertaking but deteriorates it, although the standing of other undertakings has also deteriorated.

The criterion of selective economic advantage has been quite thoroughly analyzed in the relevant references[26]. The feature of a selective economic advantage has also been recognized on several occasions in the case of aid measures addressed to energy undertakings[27]. A failure to comply with this feature in respect of measures introduced by Member States for energy undertakings may take place only in specific circumstances, i.e., in particular: (i) where energy undertakings are compensated for the costs of providing a service of general economic interest (hereinafter also referred to as: "SGEIs"), subject to the so-called Altmark conditions; and (ii) in the case of transfers of State resources taking into account the market economy investor principle or private law liability[28] rules.

> It is only in exceptional cases that measures addressed to the power sector may not fulfil the features of a threat of distortion of competition and the effect on trade

1.1.5 DISTORTION OF COMPETITION AND EFFECT ON TRADE BETWEEN MEMBER STATES

The relevant references emphasize that the case-law indicates that the conditions relating to distortion of competition are intrinsically and mutually linked[29]. The General Court found in the judgment on Alzetta that "the conditions under which trade between Member States is affected and competition is distorted are, in principle, inseparable"[30].

In CJEU case-law and EC decision-making practice, the condition of distortion or threat of distortion of competition is understood very broadly. According to the CJEU, competition is distorted or threatened to be distorted when a State measure strengthens the position of the recipient of the aid in relation to other entrepreneurs competing with it in trade in the internal market. The CJEU in the case of Philip Morris stated that: "Where State financial aid strengthens the position of an undertaking as compared with other undertakings competing in intra-Community trade, those other undertakings must be regarded as falling within the scope of that aid"[31].

In order to consider a selective measure granted to an undertaking which is involved in trade in the internal market, as satisfying the condition of distorting or threatening competition, it is sufficient that, in the circumstances of the giv-

25 See D. Grespan, S. Santamato, Favoring certain undertakings or the production of certain goods: Advantage (in:) EU Competition Law, t IV, State aid, Leuven 2008, page 273.

26 See, e.g., L. Hancher, T. Ottervanger, P.J. Slot, EC State Aids, London 2006, pages 52-68; R. Plender, Definition of Aid (in:) A. Biondi, P. Eeckhout, J. Flynn (ed.), The Law of State Aid in the European Union, Oxford 2005, pages 20-30; C. Quigley, European State Aid Law and Policy, Second Edition, Hart Publishing 2009, pages 41-51; D. Grespan, S. Santamato, Favoring certain undertakings, op. cit.; S. Santamato, Advantage in the context of services of general economic interest under Altmark (in:) EU Competition Law, op. cit., vol. IV, pages 273-388; and M. Ebner, E. Gambaro, The Notion of Aid (in:) A. Santa Maria (ed.), Competition and State aid. An Analysis of the EC Practice, Kluwer Law International 2007, pages 23-30.

27 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 176-264 and the CJEU case-law analyzed therein.

28 See D. Grespan, S. Santamato, Favoring certain undertakings, op. cit., pages 303-306 and 339; P. Anestis, S. Mavroghenis, The Market Investor Test (in:) M. Sánchez-Rydelski (ed.), The EC State Aid Regime. Distortive Effects of State Aid on Competition and Trade, London 2006, pages 109-127.

29 M. Ebner, E. Gambaro, The Notion of Aid, op. cit., page 30.

30 See the judgment of the General Court in the following combined cases: T-298/97, T-312/97, T-313/97, T-315/97, T-600-607/97, T-1/98, T-3-6/98, T-23/98, Alzetta Mauro et. al. v Commission, Court Reports 2000, pages II-2319, point 81.

31 Cases: 730/79, op. cit., point 11; 295/85, France v Commission, Court Reports 1987, page 4393, point 24; C-53/00, Ferring, Court Reports 2001, pages I-9067, point 21; C-372/97, Italy v Commission, Court Reports 2004, pages I-3679, point 52.

en case, the possibility of distortion of competition cannot be ruled out. On the other hand, the effect on trade between Member States is understood in CJEU case-law as "an effect on trade or only the possibility of such an effect"[32]. The EU electricity market is liberalized and energy undertakings engage in trade and, in principle, are subject to competition rules.

It is only in exceptional cases that measures addressed to the power sector do not fulfil the features of distortion or a threat of distortion of competition and the effect on trade between the Member States.

It is only in exceptional cases that measures addressed to the power sector do not fulfil the features of distortion or a threat of distortion of competition and the effect on trade between the Member States

1.1.6 SUMMARY REMARKS

In this document, State aid is understood as aid in legal terms. When analyzing whether a mechanism constitutes or does not constitute State aid, it is examined whether the abovementioned conditions under Article 107(1) TFEU are fulfilled, i.e.:

- Is the support granted to undertakings?
- Is the support granted by the Member State and through State resources?
- Does the support provide a selective advantage?
- Does the support distort or threaten to distort competition? And can the support affect trade between EU Member States?[33]

If any of the above conditions is not met, the given intervention in the energy market does not constitute State aid.

1.2 POSSIBILITY OF GRANTING AID TO ENERGY UNDERTAKINGS

1.2.1 INTRODUCTORY REMARKS

According to Article 107(1) TFEU, State aid is, in principle, incompatible with the EU internal market. In practice, this means that it is legally prohibited if it has not been notified and accepted or deemed accepted by the Commission or the Council[34]. As it results from the wording of Article 107(1) TFEU, which indicates the prohibition "subject to other provisions laid down in the Treaties", that prohibition is neither absolute nor unconditional[35]. The TFEU contains derogations (exemptions) from this general prohibition. Where a measure constitutes State aid within the meaning of Article 107(1) TFEU, it is necessary to determine the extent to which the exemptions apply to it, whereas the burden of proving that the conditions for a particular exemption are met is borne by the Member State[36] concerned. When State aid is exempted, it is in principle incompatible from the beginning with the common market and can only be con-

32 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 323-370.
33 In theory and practice of the State aid law it is presumed that if previous conditions are fulfilled, the measure may automatically affect trade between Member States. See more details ibidem, pages 336-337.
34 See the judgment of the General Court on T-384/04, SIDE v Commission, Court Reports 2008, pages I-nyr, point 58.
35 See the judgments of the CJEU on 78/75, op. cit., point 8; C-301-87, Commission v France, Court Reports I-307, point 15; and C-39/94, SFEI v La Poste, Court Reports 1996, pages I-3547, point 36.
36 See the judgment of the General Court on T-68/03 Olympiaki Aeroporia Ypiresies AE v Commission, Court Reports 2007, pages II-2911, point 34.

sidered compatible with it if it fulfils all the exemption criteria[37]. Exceptions to the general principle of the incompatibility of State aid with the internal market must be interpreted restrictively[38].

> Exceptions to the general principle of the incompatibility of State aid with the internal market must be interpreted restrictively

1.2.2 LEGAL BASIS FOR THE COMPATIBILITY OF STATE AID TO ENERGY UNDERTAKINGS WITH THE INTERNAL MARKET

State aid may be compatible with the internal market on different legal bases. There are four types of legal bases for exemption from the general prohibition on State aid. The first covers Article 107(2) TFEU, which refers to aid classified as "compatible with the internal market". The second covers Article 107(3)(a)-(d) TFEU, which provides for aid "which may be considered" by the Commission to be compatible with the internal market. The third basis for the derogation covers Article 107(3)(e) TFEU, which provides for aid "which may be considered" to be compatible with the internal market by the Council, at a request of the Commission. The fourth legal basis for the exemption from the principle of the incompatibility of aid with the internal market covers Article 108(2) TFEU. In that provision, the Treaty refers to aid "deemed compatible with the internal market" by unanimous decision of the Council, at the request of a Member State, where exceptional circumstances justify such a decision. The general application of these exemptions to aid to energy undertakings is presented below.

State aid compatible with the internal market ex lege

Article 107(2) TFEU lays down categories of State aid compatible with the internal market ex lege. This Article defines three categories of aid that are compatible with the internal market. These categories include:

- aid of a social character granted to individual consumers, provided that it is granted without discrimination based on the origin of the products;
- aid to redress the damage caused by natural disasters or exceptional occurrences; and
- aid granted to the economy of certain regions of the Federal Republic of Germany affected by the division of Germany, in so far as it is necessary to compensate for the economic disadvantages caused by that division[39].

The Commission has no discretion as regards the application of those exceptions. Its task is to ensure that the conditions for their application are met[40]. These exemptions are not of major importance from the point of view of State aid to energy undertakings. In particular, the derogation for aid granted to the economy of certain regions of the Federal Republic of Germany affected by the

37 See the judgments of the CJEU on C-356/90 and C-180/91, Belgium v Commission, Court Reports 1993, pages I-2323, points 30 and 33; C-400/92, Germany v Commission, Court Reports 1994, pages I-4701, point 15; C-36/00, Spain v Commission, Court Reports 2002, pages I-3243, point 47; and C-71/04, Administración del Estado v Xunta de Galicia, Court Reports 2005, pages I-7419, point 34.

38 See the judgments of the General Court on T-318/00, Freistaat Thüringen v Commission, Court Reports 2005, II-4179, point 176; and T-384/04, op. cit., point 62. See also L. Hancher, T. Ottervanger, P.J. Slot, EC State Aids, London 2006, page 104.

39 See C. Quigley, European State Aid Law, op. cit., pages 127-132; L. Hancher, T. Ottervanger, P.J. Slot, EC State AIDS, op. cit., page 104; Postuła, I., A. Werner, Pomoc publiczna [Public aid], Warsaw 2006, pages 122-125; A. Verner Przepisy Komisji Europejskiej dotyczące pomocy publicize i ich transpozycja do regulacji polskich [European Commission regulations on State aid and their transposition to Polish law], PUG 2/2002, pages 4-5; and P. Marquardt, Pomoc publiczna dla małych i średnich przedsiębiorców [State aid to small and medium-sized enterprises], Warsaw 2007, pages 80-84.

40 See L. Hancher, F. Salerno, The application of EU State aid law to the Energy sector (in:) Ch. Jones (ed.), EU Energy Law, Volume II, EU Competition Law and Energy Markets, Claeys & Casteels 2016 , page 727.

division of Germany cannot apply to aid to energy undertakings (operating in Germany)[41]. The German division aid has not been authorized for many years[42]. As regards aid of a social character granted to individual consumers, it should be noted that it must not result in discrimination on the basis of the origin of the goods. In the case of aid of a social character to individual consumers for the installation of smart meters, facilitating the change of electricity supplier if consumers can purchase meters only from local sellers or installers, Article 107(2)(a) would not apply[43].

State aid which may be declared compatible with the internal market by the Commission

The derogations from the general prohibition on State aid laid down in Article 107(3)(a)-(c) TFEU are essential for aid to energy undertakings. It is worth quoting them in extenso:

"The following may be declared compatible with the internal market:

- aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment, and of the regions referred to in Article 349, in view of their structural, economic and social situation;
- aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;
- aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest (...)".

In these very general categories, there is no direct reference to the objectives related to the activities of energy undertakings and to the European energy policy. However, in the context of such general objectives as "to promote the economic development of areas " or "to facilitate the development of certain economic activities", the Commission finds content relating to the protection of the environment, to the security of energy supply or to the development of the internal energy market, which is directly correlated with the activities of energy undertakings. The indicated grounds for derogation will be analyzed in detail below.

On the other hand, the ground for exemption laid down in Article 107(3)(d) TFEU, according to which "aid to promote culture and heritage conservation" may be considered compatible with the common market, is irrelevant for aid in the power sector.

The general characteristics of the category of aid which the Commission may declare compatible with the internal market are presented in the relevant references[44].

41 See B. Kurcz, Commentary to Articles 87-89 of the TEC (in:) A. Wróbel (ed.), Traktat ustanawiający Wspólnotę Europejską [Treaty establishing the European Community], Volume II, Warsaw 2009, page 561.

42 See P. Nikolaides, M. Kekelekis, P. Buyskes, State Aid Policy in the European Community: A Guide for Practitioners, Haga 2005, page 33. See also the judgment of the CJEU on C-57/00 and C-61/100, Freistaat and Volkswagen v Commission, Court Reports 2003, pages I-9975.

43 See L. Hancher, F. Salerno, The application of EU State aid law, op. cit., page 727. Those authors refer to the judgment of the General Court in Combined Cases T-116/01 and T-118/01 P–O Ferries (Vizcaya) v Commission, Court Reports 2003, pages II-2957, point 163.

44 See, e.g. L. Hancher, T. Ottervanger, P.J. Slot, EC State Aids, op. cit., pages 109-121; C. Quigley, European State Aid Law, op. cit., pages 133-144; P. Vesterdorf, M. Uhd Nielsen, State aid law of the European Union, Sweet & Maxwell 2008, pages 30-38; A. Santa Maria (ed.), Competition and State Aid, An Analysis of the EC Practice, Kluwer Law International 2007, pages 50-87; I. Postuła, A. Werner, Pomoc publiczna [State aid], op. cit., pages 115-186; B. Kurcz, Commentary to Articles 87-89 of the TEC, op. cit., pages 561-568.

These categories of aid objectives are interpreted by the EC, which, on the basis of its decision-making practice in this area, issues guidelines, frameworks and other soft law acts. Such acts, which may be relevant for the assessment of the compatibility of aid to energy undertakings with the internal market, include:

- Communication from the Commission — Environmental and Energy Aid Guidelines 2014-2020 (hereinafter: "EEAG")[45];
- Communication from the Commission, Criteria for assessing the compatibility with the internal market of State aid to promote the execution of important projects of common European interest[46];
- Communication from the Commission, Guidelines on certain State aid measures in the context of the scheme for greenhouse gas emission allowance trading after 2012[47];
- Communication from the Commission on the methodology for analyzing State aid related to stranded costs[48];
- Communication from the Commission, Guidelines on regional aid for 2014-2020[49];
- Communication from the Commission, Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty[50];
- Communication from the Commission - Framework for State aid for research and development and innovation[51].

State aid which may be declared compatible with the internal market by the Council

Article 107(3)(e) and Article 108(2) TFEU confer competence on the Council to define categories of aid other than those listed in Article 107(3)(a)-(d) as aid compatible with the internal market. However, these are very different rules of competence and have been used differently by the Council.

Article 107(3)(e) TFEU stipulates that categories of aid other than those referred to in (3)(a)-(d) of that Article may be declared compatible with the internal market by virtue of a Council decision made at the request of the EC. That rule confers on the Council the competence to declare abstract categories of aid compatible with the internal market. It does not relieve the Commission of assessing whether certain aid falls within the categories defined by the Council[52]. On this basis, the Council adopted, e.g. in 2010, a decision on State aid to facilitate the closure of uncompetitive coal mines (hereinafter also referred to as: "coal decision")[53].

The situation is different in the case of the competence laid down in Article 108(2) TFEU. That rule forms the basis for the Council competence to decide, due to exceptional circumstances, whether State aid which a Member State grants or intends to grant is compatible with the internal market. It is im-

45 OJ EU C 200 of 2014, page 1, as amended. They are now subject to revision.
46 OJ EU C 188 of 2014, page 4.
47 OJ EU C 158 of 2012, page 4. They are now subject to revision.
48 Communication from the Commission on the methodology for analyzing State aid related to stranded costs of July 26, 2001: https://ec.europa.eu/competition/state_aid/legislation/stranded_costs_en.pdf (accessed on November 29, 2019).
49 OJ EU C 209 of 2013, page 1.
50 OJ EU C 249 of 2014, page 1.
51 OJ EU C 198 of 2014, page 1.
52 See the judgment on C-400/92, op. cit.; and the opinion of Advocate General Darmon on this matter.
53 OJ EU L 336 of 2010, page 24.

portant that the Council may make such a decision only at the request of the Member State. The initiative is not open to the Commission in this case. There is a need for unanimity in the Council.

Attention should also be paid to the Council competence conferred by Article 109 TFEU to adopt, at the request of the Commission and after consulting the European Parliament, regulations for the application of Articles 107 and 108 and, in particular, to determine the conditions for the application of Article 108(3) (notification of aid) and the category of aid exempted from that procedure. This Council competence is linked to the Commission implementing competence specified in Article 108(4) TFEU. According to that standard, the Commission may adopt regulations concerning categories of State aid in respect of which the Council has decided, in accordance with Article 109, that they may be exempted from the notification procedure. Council Regulation 994/98[54] as amended by Council Regulation 733/2013[55] empowers the Commission to recognize that the following categories may be exempted from notification under certain conditions:

- for small and medium-sized enterprises;
- aid for research and development activity;
- aid for environmental protection;
- training and employment aid;
- aid compliant with the regional aid map approved by the Commission for each Member State; aid to redress the damage caused by certain natural disasters;
- social aid for transport for the residents of the outermost regions;
- aid for broadband infrastructure;
- aid for innovation;
- aid to promote culture and heritage conservation;
- aid for sport infrastructure and multifunctional recreational infrastructure.

On the basis of that authorization, i.a. Commission Regulation 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (hereinafter: "GBER" - General Block Exemption Regulation), was adopted.[56] This Regulation is relevant for aid to energy undertakings, in particular for the regulation of environmental aid which, in addition to classical forms of aid for renewable energy sources (RES), energy efficiency or early compliance with EU environmental protection standards, also includes aid for energy infrastructure and investments in high-efficiency cogeneration systems[57].

State aid in the form of public service compensation

The specific competence to exempt the general prohibition on State aid is that laid down in Article 106(2) TFEU[58]. This Article concerns the application of the provisions of the Treaties, including State aid rules, in relation to public undertakings and undertakings to which special or exclusive rights have been

54 Regulation of May 7, 1998 on the application of Articles 92 and 93 of the Treaty establishing the European Community to certain categories of horizontal State aid (OJ EU L 142 of 1998, page 1).
55 OJ EU L 204 of 2013, page 11.
56 Regulation of June 17, 2014 (OJ EU L 187 of 2014, page 1, as amended)
57 See Articles 36-49 of the GBER.
58 See L. Hancher (in:) EC State Aids, op. cit., page 103.

granted, including for the management of services of general economic interest. Compensation for energy undertakings entrusted with the management of SGEIs (including public service obligations) to a certain extent constitutes State aid within the meaning of Article 107(1) TFEU[59]. Where public service compensation constitutes State aid, the Commission must assess its compatibility with the internal market on the basis of Article 107(2) or (3) TFEU. If it is not possible to determine the compatibility of the aid with the internal market on the basis of the abovementioned Treaty standards, the Commission will assess the compatibility of the aid in application of Article 106(2) TFEU[60].

With regard to this scope, the Commission has adopted a number of legal acts concerning compatibility requirements and procedural issues related to this category of aid, i.e.:

- Decision on the application of Article 106(2) TFEU to State aid in the form of public service compensation granted to undertakings entrusted with the operation of services of general economic interest[61];
- Communication from the Commission on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest[62];
- Communication from the Commission, European Union framework for State aid in the form of public service compensation[63];
- Commission Regulation 360/2012 on the application of Articles 107 and 108 TFEU to de minimis aid granted to undertakings providing services of general economic interest[64].

1.2.3 COMPATIBILITY OF STATE AID TO ENERGY UNDERTAKINGS WITH THE INTERNAL MARKET

The concept of "compatibility of the aid with the internal market"

The Treaty does not expressly prohibit State aid, but indicates in Article 107(1) TFEU that it is "incompatible with the internal market"[65]. However, the CJEU interprets Article 107(1) TFEU as meaning that the incompatibility of aid with the internal market implies that it is inadmissible[66]. A simple a contrario reasoning therefore indicates that the compatibility of the aid with the internal market entails, as a necessary consequence, its admissibility[67].

Application of the concept of "compatibility of aid with the internal market" to energy undertakings

Apart from the case referred to in Article 107(2) TFEU, which defines cases of "aid compatible with the internal market", other standards refer to the "possibility of declaring" or "declaring" aid compatible with that market. Article

59 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 204-231.
60 In particular L. Hancher, F. Salerno, The application of EU State aid law, op. cit., page 774.
61 OJ EU L 7 of 2012, page 3.
62 OJ EU C 8 of 2012, page 4.
63 OJ EU C 8 of 2012, page 15.
64 OJ EU L 114 of 2012, page 8.
65 See A. Sinnaeve, State Aid Control: Objectives and Procedures (in:) S. Bilal, P. Nicolaides (ed.) Understanding State Aid Policy in the European Community. Perspectives on Rules and Practice, Kluwer Law International, Hagen 1999, page 15.
66 See the judgments of the CJEU on 74/76, Ianelli and Volpi, Court Reports 1977, page 557; 78/76, op. cit.; and C-17/91, Lornoy, Court Reports 1992, I-6523.
67 C. Quigley, European State Aid Law, op. cit., page 124.

107(2) TFEU is of no major relevance from the point of view of State aid to energy undertakings. This means that it is crucial for the eligibility of State aid to energy undertakings that the EC exercises its competence to "declare" aid compatible with the internal market. In principle it may therefore[68] be concluded that State aid to energy undertakings compatible with the internal market and therefore permissible is the aid which has been declared compatible with the internal market by the Commission.

The Commission uses its competence to assess State aid in three types of acts. Firstly, the Commission assesses the compatibility of aid in the assessment of individual State aid cases (individual aid and aid schemes) by adopting decisions on the basis of Article 108 TFEU. Secondly, the Commission exercises that competence by adopting guidelines, frameworks and other soft law acts which lay down the conditions under which certain aid is to be declared compatible with the internal market. Thirdly, the Commission sets out the conditions for compatibility of the aid with the internal market in the regulations on the application of Articles 107 and 108 TFEU. An example of the use of EC recognition in regulations is Article 3 of the GBER. That provision stipulates that aid schemes, individual aid granted under aid schemes and ad hoc aid are compatible with the internal market within the meaning of Article 107(2) or (3) TFEU and exempt from notification if the aid in question fulfils all the conditions laid down in that regulation.

> The incompatibility of the aid with the internal Eu market means that it is inadmissible

1.2.4 COMPETENCE OF THE EUROPEAN COMMISSION TO DECLARE STATE AID COMPATIBLE WITH THE INTERNAL MARKET

The scope of Commission discretion

The assessment of the compatibility of aid with the internal market falls within the exclusive competence of the EC[69]. Even the CJEU, when reviewing the legality of exercising that power, cannot substitute its own assessment for that of the Commission, but can only examine whether that assessment is vitiated by a manifest error or is a misuse of powers[70]. National authorities do not have competence to review EC decisions. Nor is it possible for the national courts to review the Commission's decisions, even when examining whether there has been a manifest error or misuse of powers[71].

The Commission competence to assess State aid results from the literal wording of Article 107(3) TFEU, which indicates that aid "may be declared compatible with the internal market", and the broad scope of that power results directly from the extremely general wording of that aid category[72]. The term "may be declared" indicates the Commission discretion[73]. According to settled case-law of the CJEU, this is a "broad discretion"[74]. In the context of this assessment, the EC is empowered to take into account all relevant social

68 Subject to the above-mentioned competences of the Council.
69 See the judgment of the CJEU on C-368/04, Transalpine Ölleitung in Österreich, Court Reports 2006, pages I-9957, point 38.
70 See the judgment of the CJEU on C-456/00, France v Commission, Court Reports 2002, pages I-11949, point 41.
71 See B. Kurcz, Commentary on Articles 87-89 of the ECT, op. cit., page 566.
72 Similarly, A. Sinnaeve, State aid Control, op. cit., page 15.
73 L. Hancher (in:) EC State Aids, op. cit., page 109.
74 See the judgment of the CJEU on 730/79, Philip Morris v Commission, Court Reports 1980, page 2671, point 17; judgment in combined cases 62 and 72/87 Exécutif régional Walloon v Commission, Court Reports 1980, page 1573, point 21; judgment of the General Court on T-152/99, Hijos de Andrés Molina SA v Commission, Court Reports 2002, page II-3049, point 48; and judgments of the CJEU on C-142/87, Belgium v Commission, Court Reports 1990, page I-950, point 56; C-39/94, op. cit., point 36; 78/76, op. cit., point 8; C-156/98, Germany v Commission, Court Reports 2000, pages I-6857, point 67; and judgment on C-303/88, Italy v Commission, Court Reports 1991, pages I-1433, point 34.

and economic circumstances, but has to assess them in a Community (EU) context [75].

Legal nature of soft law acts of the Commission

While the discretion of the EC in the assessment of State aid is broad, it is not unlimited. As stated above, the limits on the Commission discretion are a misuse of powers and a manifest error[76]. As a misuse of powers on the part of the EC, the CJEU considers the adoption by the Commission of a decision declaring aid compatible with the internal market where any of the conditions of that aid is contrary to other provisions of the TFEU[77].

The discretion of the EC also includes the determination of the conditions for compatibility of aid with the internal market in the guidelines and other soft law[78] acts. In those acts, the Commission limits its discretion to the assessment of aid as compatible with the internal market by referring to the criteria which it takes into account in that assessment. Such Commission documents are not legal grounds for the compatibility of State aid with the internal market. They are documents in which the EC specifies the criteria according to which it "declares" State aid compatible with the internal market. The CJEU confirmed that the EC can adopt detailed guidelines specifying how it will exercise its discretion in assessing the compatibility of aid with the internal market, but they must not deviate from the Treaty rules[79]. The guidelines and framework rules have no legal basis either in the TFEU or in acts adopted on its basis[80].

The guidelines are not binding on the Court. They are, in principle, binding on the Commission. Where the Commission has adopted guidelines designed to clarify its discretion, the guidelines indicate that it has a self-limitation of powers consisting in the fact that it must comply with the rules which it has imposed on itself[81]. It is worth noting, however, that State aid falling outside the scope of the guidelines can be approved by the Commission if it fulfils the conditions of Article 107(3) TFEU[82].

1.2.5 THE PRINCIPLE OF COMPENSATORY JUSTIFICATION AND STATE AID TO ENERGY UNDERTAKINGS

Principle of compensatory justification

One of the most general and most important imperatives set out by the CJEU, which concern the discretion of the EC in State aid control cases, covers the finding included in the judgment on Philip Morris. In that judgment, the Court found that "the Commission has the power to decide at its discretion and the economic and social situation must be assessed in a Community context"[83].

75 See the judgment of the CJEU on C-261/89, Germany v Commission, Court Reports 1991, pages I-1437, point 20.
76 See the judgment of the CJEU on C-456/00, op. cit., point 41.
77 See the judgment of the CJEU in combined cases C-134/91 and C-135/91, Kerafina, Court Reports 1991, pages I-5721, point 20; and judgments on C-156/98, op. cit., point 78; C-204/97, Portugal v Commission, Court Reports 2001, pages I-3175, point 41; and C-113/00, Spain v Commission, Court Reports 2002, pages I-7601, point 78.
78 See in more detail in: P. Vesterdorf, M. Uhd Nielsen, State aid law, op. cit., pages 305-306.
79 See the judgments of the CJEU on 310/85, Deufil v Commission, Court Reports 1987, page 901, point 22; C-351/98, Spain v Commission, Court Reports 2002, pages I-8031, point 53; C-182/03 and C-217/03, Belgium and Forum 187 v Commission, Court Reports 2006, pages I-5479, point 72; and judgments of the General Court on T-17/03, Schmitz-Gotha Fahrzeugwerke GmbH v Commission, Court Reports 2006, pages II-1139, point 42.
80 See B. Kurcz, Commentary on Articles 87-89 of the ECT, op. cit., page 566.
81 See the judgments of the General Court on T-27/02, Kronofrance v Commission, Court Reports 2004, pages II-4177, point 79; and T-349/03, Corsica Ferries France v Commission, Court Reports 2005, pages II-2197, point 79.
82 See the judgment of the General Court on T-137/02 Pollymeier Malchow GmbH v Commission, Court Reports 2004, pages II-3541, point 63.
83 See the judgment of the CJEU on 730/79, op. cit., point 24.

By that judgment, the CJEU dismissed the action brought against the Commission's decision on the planned aid from the Dutch Government to increase the production capacity of Philip Morris Holland.[84] In that decision, the Commission first applied the compensatory justification test.[85] The decision stated that "aid may be granted only if the Commission establishes that it will contribute to the achievement of the objectives set out in the exemption which the beneficiary would not have been able to achieve under normal market conditions by its own actions"[86].

This rule, developed since the 1970s, means that the EC will not raise objections to the proposed aid, provided that the aid has a compensatory justification. This means that the beneficiary of the aid, through the State support received, contributes to the achievement of the EU objectives set out in Article 107(3) TFEU to a greater extent than it would result from normal market forces[87].

State aid may have compensatory justification where: (i) it increases the operation of the market mechanism or (ii) supplements or (iii) replaces the operation of the market where the market (itself) is not able to achieve a specific EU objective (market failure). L. Hancher considers that the aid must have compensatory justification in the form of a contribution by the beneficiary in excess of normal market forces to the achievement of the EU objectives[88].

The principle of compensatory justification is implemented in practice by a test consisting of three criteria to be met by the aid, including:

- the interest of the EU as a whole;
- necessity; and
- proportionality[89].

According to the Commission, the acceptance of an aid measure depends on the following criteria:

- the aid promotes development which is in the interest of the EU as a whole;
- the aid is necessary to achieve this objective, i.e. in other words: the recipient of the aid is unable to achieve certain results under normal market conditions;
- the conditions for granting aid, such as intensity, duration, risk of transferring problems from one Member State, scale of distortion of competition, etc., are justified in relation to this objective[90].

Objective of common interest

The most important element of the compensatory justification principle is the objective which, owing to the aid, compensates for the distortion of competition in the internal market. At present, the EU objectives are set out in Article 3

84 EC Decision 79/743/ECC of July 27, 1979 on the planned aid to the Dutch Government to increase the production capacity of Philip Morris Holland, OJ EU L 217 of 1979, page 17.
85 See K. Mortelmans, The Compensatory Justification Criterion in the Practice of the Commission in Decisions on State Aids, CMLRev 1984, vol. 21, page 406.
86 See the above-mentioned decision 79/743/EEC.
87 See S. Dudzik, Pomoc państwa dla przedsiębiorstw publicznych w prawie Wspólnoty Europejskiej [State aid to public undertakings under European Community law]. Między neutralnością a zaangażowaniem [Between neutrality and involvement], Cracow 2002, page 57.
88 L. Hancher, The application of EC State aid law to the energy sector (in:) Ch. Jones (ed.) EU Energy Law. Volume II. EU Competition Law and Energy Markets, Claeys & Casteels, September 2007, page 627.
89 A. Sinnaeve, State Aid Control, op. cit., page 16.
90 Twelfth Report on Competition Policy, s. 110-111, point 160. See also L. Hancher (in:) EC State Aids, page 110.

of the Treaty on European Union[91]. When analyzing whether the aid pursues an objective of common interest, the Commission refines the objectives set out in the bases of the derogation by reference to the general EU objectives as well as to the objectives of the individual EU policies (including environmental and energy policy).

The key basis for the derogation from the general prohibition on State aid in the case of aid to energy undertakings covers Article 107(3) TFEU. This derogation is directly applicable as it is in particular the basis for granting aid to certain economic regions, certain economic activities and important projects of common EU interest. However, this derogation is also the starting point for determining the conditions for the compatibility of State aid with the internal market in soft law acts relevant for aid to the energy sector. References to Article 107(3) TFEU as the basis for exempting the prohibition on aid include, in particular, the following:

- EEAG;
- Criteria for assessing the compatibility with the internal market of State aid to promote the execution of important projects of common EU interest;[92]
- Guidelines on certain State aid measures in the context of the scheme for greenhouse gas emission allowance trading after 2012[93];
- Methodology for analyzing State aid related to stranded costs[94];
- Guidelines on regional aid for 2014-2020[95]; Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty[96]; and
- Framework for State aid for research and development and innovation[97].

Reference is also made to Article 107(2) and (3) TFEU in the GBER. The Council Decision on State aid to facilitate the closure of uncompetitive coal mines is also based on such a derogation. That decision was adopted by the Council at the request of the EC on the basis of Article 107(3)(e) TFEU and it introduces the general principle that aid to the coal industry "may be declared" compatible with the proper operation of the internal market if it complies with its provisions.

The wording of Article 107(3) TFEU, in particular to the extent that it may be applicable to the assessment of aid to energy undertakings (i.e. Article 107(3)(b), (c) and (e)), sets out very generally the objectives justifying the derogation. In particular, the categories "facilitating the development of certain economic activities or of certain economic regions" or "important project" have a very broad and undefined meaning. Such phrases in the Treaty are intended to provide the Commission with wide discretion.

The question therefore arises as to the limits of that discretion with respect to the assessment of the specific objectives justifying the derogation. Beyond

91 OJ of 2004, No. 90, item 864/30, as amended.
92 OJ EU C 188 of 2014, page 4, points 6-8.
93 OJ EU C 158 of 2012, page 4, point 3.
94 Communication from the Commission on the methodology for analyzing State aid related to stranded costs, op. cit., point 4, file No. 5.
95 OJ EU C 209 of 2013, page 1, points 1-2 and 4-5.
96 OJ EU C 249 of 2014, page 1, points 1 and 36.
97 OJ EU C 198 of 2014, page 1, point 5.

the limits of the discretion referred to above, such as misuse of powers or manifest error, those limits are contained in Article 107(3) of the Treaty itself. The TFEU stipulates the promotion of important projects of "common European interest" (Article 107(3)(b)) and that aid must not adversely affect trading conditions "to an extent contrary to the common interest" (Article 107(3)(c)). The limit of the Commission's discretion to choose (assess) the specific objectives to which the aid is intended to contribute in order to compensate for distortions of competition covers "common interest". These are therefore intended to be "objectives of common interest". In the Commission's view, "an objective of common interest is an objective declared by the EU as being of common interest to the Member States"[98]. The Commission now requires that this objective of common interest be "clearly defined"[99].

It is important to distinguish between a "common interest" and an individual interest of individual Member States or undertakings. The CJEU has repeatedly stated that the interest of a Member State or the advantages achieved by recipients of aid in support of national interest do not justify the acceptance by the EC of aid within its discretionary power[100]. The Commission has repeatedly believed in its decision-making practice that the derogations laid down in Article 107(3) TFEU specify the common interest and not the interests of individual recipients of aid, certain regions or certain sectors of the national economy[101].

Both the justification for the eligibility of aid to energy undertakings under the derogation laid down in Article 107(3) TFEU and one of the limits of the EU discretionary power is to contribute to the achievement of an objective of common interest.

> State aid can only be accepted if there are no other effective instruments capable of pursuing an objective of common interest

Need for assistance

The criterion of necessity of aid for the achievement of an objective of common interest distinguishes between the criteria of appropriate instrument, incentive effect and proportionality sensu stricto. In order for the criterion to be met, the aid must be necessary to achieve an objective of common interest. In other words, if that objective can be achieved by the normal operation of the market, the aid cannot be accepted[102].

State aid can only be accepted if there are no other sufficiently effective instruments capable of achieving an objective of common interest.

The aid should also have an incentive effect. The purpose of this criterion is to avoid the granting of aid for measures which an undertaking would have taken in any event to the same extent, even without the aid. The incentive effect criterion is operationalized in detail in a number of soft law acts[103].

Proportionality of the aid

Aid may be accepted only if the aid measure is proportionate (proportionality sensu stricto). The Commission considers the aid to be proportionate only if

98 EC decision No. K(2010)1718, point 47.
99 Ibidem, point 46. See also the Community Guidelines on State aid for rescuing and restructuring firms in difficulty (OJ EU C 244, 2004, page 2, point 16).
100 See the judgments of the CJEU on 730/79, op. cit., point 17; 310/85, op. cit., point 18; Case C-400/92 op. cit., point 21; and C-390/06, Nuova Agricast Srl v Ministero delle Attivita Produttive, Court Reports 2008, pages I-2577, point 68.
101 See K. Mortelmans, The Compensatory Justification Criterion, op. cit., page 428; and L. Hancher (in:) EC State Aids, op. cit., page 110.
102 See the judgment of the CJEU on 323/82, SA Intermills v Commission, Court Reports 1984, page 3809, point 39; and EC decision No. C(2001)4512fin, point 48.
103 See, e.g., the Guidelines on regional aid for 2014-2020, points 60-63.

the same result could not be achieved with less aid. The proportionality of the measure is assessed by reference to the amounts of funding, the aid intensity and the category of eligible costs. The essence of the proportionality of the measure is to ensure that the beneficiary does not obtain an undue advantage in relation to the objective pursued. The proportionality criterion is operationalized in detail by the Commission in a number of soft law acts[104].

The criterion of proportionality sensu largo refers to the relationship between the objective pursued by the aid and the distortion of competition and the effect on trade[105]. The aid measure should distort competition and trade to the smallest extent possible, provided that the objective is to be achieved. The negative effects should be offset by identifiable positive effects of the aid. In order to minimize the negative effects of the aid on competition and trade, conditions are applied, depending on the type of aid and the sector to which the beneficiary belongs.

> In Poland transparency of the transfer of state resources to the power sector leaves much to be desired

1.2.6 SUMMARY REMARKS

In general, aid to energy undertakings can be considered compatible with the internal market (permissible) if it fulfils the compensatory justification test. This test for aid to energy undertakings will be met if the aid:

- contributes to the EU interest for energy policy;
- is necessary for pursuing that interest;
- complies with the proportionality feature.

Taking into account Article 194(1) TFEU and the documents of the Commission, the European Parliament and the Council, it can be concluded to some extent that the EU energy policy is based on the following pillars:

- preserving and improving the environment;
- ensuring security of supply; and
- ensuring the functioning of the energy market.

The specific objectives of this policy are best reflected in secondary legislation adopted for its implementation. However, the detailed conditions for fulfilling the compensatory justification test are laid down in EU soft law acts.

1.3 TRANSPARENCY OF GRANTING AID IN POLAND

Public money should be spent as transparently as possible. Unfortunately, in Poland the transparency of the transfer of state resources to the power sector leaves much to be desired. This applies to both the conventional power sector (including mining) and the renewable power sector. Examples from the Western Europe show that information on similar support schemes can be presented to the public in a much clearer way.

By way of example, in the case of a flag State aid mechanism for the power sector, the capacity market, it is difficult to determine clearly, on the basis of publicly available data, for which specific power units support is to be

104 See, e.g., EEAG on aid intensity and the definition of eligible costs, which must be limited, e.g., to the additional investment costs necessary to achieve a certain level of environmental protection (e.g. points 27(e) and 77-80); and the Communication from the Commission on the methodology for analyzing State aid related to stranded costs for the detailed definition of the categories of costs that can be covered under this aid (point 3).

105 See, e.g. decision K(2010)1718, points 70-75 (distortion of competition and balancing test); EC decision No. K(2009)5500 final version, points 48-52; and EC Decision No. K(2009)5075 final version, points 47-52.

granted[106]. By way of comparison, in the case of the British equivalent of the Polish mechanism, the local power system operator, National Grid, publishes a detailed report already several hours after the auction conclusion, covering also those entities which submitted proposals higher than the clearing price of the tender and did not receive support[107].

The situation is even worse in the case of RES support schemes: e.g. in relation to the new auction mechanism[108], the statutory obligation of the Energy Regulatory Office (hereinafter: "ERO") means only the publication of the names of the generators, the number of successful proposals, the maximum and minimum price of the energy sold and aggregated data on the volume and value of the energy sold[109]. Greater transparency in this area is justified, even in view of the possibility of cumulation of different sources of aid and the need for greater public control to prevent possible overcompensation. Moreover, in the public versions of the EC decisions on aid for the closure of hard coal mines, the Polish authorities did not agree to the publication of specific figures for individual aid[110] beneficiaries (similar practices are also followed by other Member States in this respect)[111].

Information on public assets, including in particular State aid, constitutes public information within the meaning of the Polish Act on Access to Public Information[112]. However, the right to obtain public information is subject to a number of restrictions, of which, in the context of State aid, in particular the business secret must be mentioned[113]. In practice, this often makes it impossible to learn the detailed rules for the functioning of the individual mechanisms, in particular where state funding providers believe that support is granted on market-based rules.

Minimum requirements for transparency of energy and environmental aid schemes are laid down in the EEAG[114]. However, they concern only the already approved schemes which constitute State aid beyond any doubt.

1.4 AMENDMENT OF THE RULES FOR GRANTING AID TO THE POWER SECTOR AFTER 2020

Environmental protection and energy are the sectors with the highest levels of State aid granted in the EU[115]. The EEAG have been very widely used by the EC since mid-2014, which since then has not adopted nearly any negative decision on the aid covered by these guidelines. This proves the usefulness of the EEAG as a tool on the basis of which aid can be granted to the power sec-

106 In the published results of the capacity market auction, the power units are not precisely signed and the contracted capacity volume is adjusted with an appropriate availability factor that is different (lower) than the nominal installed capacity, which makes it difficult to unambiguously identify the winning units. See, e.g. information of the President of ERO 99/2018 on publishing the final results of the main auction for the 2021 delivery year: https://www.ure.gov.pl/pl/urzad/informacje-ogolne/komunikaty-prezesa-ure/7899Jnformacja-nr-992018.html (accessed on November 29, 2019).

107 See, e.g. https://www.emrdeliverybody.com/Capacity%20Markets%20Document%20Library/Final%20T-4%20Results%20(Delivery%20Year%2021-22)%2020.02.2018.pdf (accessed on November 29, 2019).

108 See in more detail in point 2.5.1 below.

109 See, e.g. information of the President of ERO No. 96/2018 on publishing the results of ordinary auction No. AZ/9/2018: https://www.ure.gov.pl/pl/urzad/informacje-ogolne/komunikaty-prezesa-ure/7892,Informacja-nr-962018.html (accessed on November 29, 2019).

110 See in particular the latest EC Decision C (2019) 5395 final.

111 See, e.g. EC Decision C (2016) 3029 final for Spain.

112 OJ of 2019, item 1429. See Article 6(1), point 5(g) of the Act.

113 See Article 5(2) of the Act.

114 See section 3.2.7 of the EEAG.

115 See State aid scoreboard 2018: https://ec.europa.eu/competition/state_aid/scoreboard/index_en.html (accessed on November 29, 2019).

tor. However, not all State aid measures to the power sector contributed to the achievement of the EU climate and energy targets for 2020. In addition, in their current form, the EEAG are not able to help Member States achieve the new 2030 targets resulting from the "Clean Energy for All Europeans" package (hereinafter: "Clean Energy Package" or "CEP")[116] nor to achieve the greater ambitions of the EU Green Deal[117].

From May 2019, the EEAG and the relevant provisions of the GBER, together with other EU State aid rules, are being reviewed in terms of their adequacy, the existing practice and changes to be made in the future. The first public consultation in this respect, inviting comments from both Member States and other stakeholders (including NGOs), ended on July 19, 2019. The EC announced that it would publish its comments, together with its own working document, in the course of 2020. Subsequently, further public consultations should be held on the draft amendment of the EEAG itself.

In the meantime, the current EEAG will continue to apply. Although formally expiring on December 31, 2020, the EC presented its intention to extend their validity without any substantial changes, justifying it with the time needed to develop legal changes for the next version[118]. The Communications on the European Green Deal and Sustainable Europe Investment Plan[119] reshuffled the cards to some extent and aim at a revision "by 2021" while encouraging the Member States to make use of the "flexibility" offered under the EEAG (and the new policy objectives) until then to deploy clean energy solutions further. In particular, the Commission welcomes increased investment in renewable energy sources and efficiency measures, supports innovative technologies and business models (such as Energy performance contracts), while announcing an objective to phase out subsidies to fossil fuels "in particular those that are the most polluting". How far-reaching will the revised EEAG be remains to be seen. In any case, a thorough revision of some sections of the EEAG seems both desirable and necessary in view of the significant changes in the power sector and its regulatory environment since 2014.

Both the new State aid rules and the application of the current EEAG are directly affected by the CEP, which contains a number of provisions relevant to the acceptable shape of aid measures in the power sector. The interpretation of the EEAG must not only be consistent with the provisions of the package, but also actually implement them.

This is particularly important in the case of aid to ensure generation adequacy (in the form of capacity mechanisms)[120], the principles of maintaining support for renewable energy sources and the confirmation that separate auctions for different RES technologies may be organized, the development of energy efficiency measures and the proper implementation of the energy efficiency first rule, i.e. the recognition of energy efficiency improvement measures as mechanisms contributing to security of supply and of key importance for the achievement of the EU climate and energy targets for 2030. The re-

> The new EEAG must no longer provide for the possibility of granting aid to the coal power sector

116 See in more detail: https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans (accessed on November 29, 2019).

117 Communication from the Commission, "The European Green Deal" of 11 December 2019, COM(2019) 640 final

118 The consultation process is available at: https://ec.europa.eu/competition/consultations/2019_gber_deminimis/index_en.html; the comments submitted by ClientEarth are available at: https://www.documents.clientearth.org/library/download-info/clientearths-response-to-the-targeted-consultation-for-the-evaluation-of-the-guidelines-on-state-aid-for-environmental-protection-and-energy-2014-2020/ (accessed on November 29, 2019).

119 Communication from the Commission, "Sustainable Europe Investment Plan" of 14 January 2020, COM(2020) 21 final, p. 12

120 The EC undertakes to ensure that capacity mechanisms which will be notified to it before the entry into force of the new IEM regulation (see below) are already in conformity with its requirements. This is the case, e.g., for planned capacity mechanisms in Greece and Belgium.

vised guidelines should also take into account the fact that the CEP sets the consumer at the heart of the energy transition, providing for a simplified legal framework allowing for a wider development of prosumer sector and local energy communities[121].

The growing phasing-out of coal power generation and the related just transition process also have important implications from the point of view of the State aid. It can be expected that the new guidelines will no longer provide for the possibility of granting aid for the coal power generation sector, in particular because the EC supports a strategy to reduce energy generation in the existing coal-fired and other solid fossil fuel-fired units and to reduce production capacity "using all available means" as referred to in the revised EU Regulation 2019/943 on the internal electricity market (hereinafter: "IEM regulation")[122]. This is also a stated objective of the Sustainable Europe Investment Plan. The prohibition on granting operating aid to the coal sector could be a very important change. However, it is not clear whether the EC will opt for such a far-reaching regulatory approach, given the right of Member States to choose their energy mix as guaranteed by the TFEU[123].

On the other hand, at least some Member States can be expected to try to compensate (or even overcompensate) the coal industry for financial losses resulting from the costs of decommissioning of plants, disposing of unprofitable assets, payments to employees, etc. According to ClientEarth, a clear and transparent legal framework at EU level is needed in this respect[124].

Sector coupling assuming gradual electrification of transport, district heating and cooling, is beginning to be another clear trend, which the new guidelines should address and facilitate the implementation of the relevant technological solutions properly. It would also be helpful to develop new technologies by adding to the EEAG sections dedicated to supporting the construction and adaptation of energy infrastructure (networks and charging stations) to the anticipated market reality. The subsequent guidelines should therefore be consistent not only with the legal framework of the CEP but also with a broader vision of the development of energy transition in the EU.

121 There are many options, in particular separate auctions for projects involving citizens or raising the upper capacity threshold for projects understood as small scale projects for such investments.

122 OJ EU L of 2019, item 158, page 54. See Article 4 of that Regulation.

123 See Article 194 TFEU.

124 ClientEarth opts for rules allowing State aid to be granted to operators of coal-fired power plants (in the case of lignite-fired plants - including associated mines), provided that they undertake to decommission their plants before January 1, 2030. Such a regulation could be in the form of a Council decision based on Article 107(3)(e) TFEU and could be inspired by the provisions of Decision 2010/787 on State aid to facilitate the decommissioning of uncompetitive coal mines. Such aid should be allowed only in respect of the costs related to decommissioning of plants and the requirements of just transition, which would have to be strictly defined in the wording of the decision (such as early retirement pensions, retraining of employees, reclamation of off-site areas).

2 POWER SECTOR SUPPORT SCHEMES IN POLAND

The main mechanisms of public support for the domestic power sector are analyzed below. It was focused on measures addressed at the commercial power sector, which were or have been in operation since Poland entered the EU. In some cases, however, it was necessary to present the situation before the accession (this applies in particular to the so-called long-term contracts). The already contracted support that will be paid in the future (in particular as part of the capacity market and RES auctions) was also taken into account. The overall assessment of the legality and effectiveness of the following forms of government involvement in the power sector is presented in the fourth chapter of the report (see points 4.1 and 4.3 of the publication).

2.1 AID UNDER THE EU ETS

2.1.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

Power plants and combined heat and power plants in the EU and EFTA States participate in the EU ETS (Emissions Trading Scheme), regulated by Directive 2003/87 establishing a scheme for greenhouse gas emission allowance trad-

ing (hereinafter: "ETS Directive")[125]. Since 2013, i.e. the beginning of the third EU ETS phase, the principle is that operators of plants covered by the scheme buy European Emission Allowances (EUA) through auctions. The price of one allowance, corresponding to the emission of one ton of carbon dioxide, is determined by a combination of supply and demand (within the framework set by the ETS Directive)[126].

However, for poorer EU Member States, including Poland, the ETS Directive, in Article 10c, allows, on an exceptional basis, for some EUAs to be allocated free of charge to power plants and combined heat and power plants. The purpose of this derogation is to modernize the power sector towards low-emission. The Polish authorities have used the derogation from Article 10c of the ETS Directive and grant domestic power plants the EUAs without the auctioning rules.

Plants included in the list referred to in Article 41 of the Polish Act on greenhouse gas emission allowance trading scheme (hereinafter: "ETS Act") qualify for the free allocation of EUAs for the power sector in the third EU ETS phase (2013-2020)[127]. Free allowances are granted in exchange for the implementation of the planned projects indicated in the national investment plan, referred to in Article 30 of the ETS Act. The national investment plan includes a list of 347 investment tasks[128]. Approx. 70% of these tasks include construction or modernization of infrastructure related to the coal power sector[129]. However, nearly half of the tasks covered by the national investment plan are not being implemented[130].

As the existing rules for the functioning of this derogation have not fulfilled their role[131] well, the EU legislator, by amending the ETS Directive in 2018[132], has very tightened the rules for Member States to grant support under Article 10c. The aided investments must, in principle, be selected through competitive tenders, in which coal capacities are excluded.

The Polish authorities decided not to continue to apply Article 10c after 2020. According to the Government Communication[133], all relevant allowances are to be auctioned and revenues from their sale are to feed the new national special fund for the modernization of the power sector, managed by the Minister responsible for energy[134]. Therefore, it is most likely that all available measures under this derogation for the period 2021-2030 will apply to the power sector, but in a different form (i.e. no more allowances, but e.g. direct subsidies).

125 OJ EU L 275 of 2003, page 32, as amended.
126 E.g., at the beginning of August 2019, the market price of allowances was just under EUR 30. Current quotations are available e.g. on the website: https://ember-climate.org/carbon-price-viewer/
127 OJ of 2018, item 1201, as amended.
128 See Official Gazette of the Republic of Poland (Monitor Polski) of 2016, item 167.
129 See in more detail in: M. Stoczkiewicz, A. Warso-Buchanan (ed.), Derogations from a transition. Free EU ETS allowances for the electricity sector in Poland, ClientEarth 2015, page 37.
130 See in more detail in: M. Gałczyński, H. Koenig, W. Kukuła, F. Piasecki, J. Schiele, M. Stoczkiewicz, R. Zajdler, Reforma EU ETS: Jak nie zmarnować kolejnej szansy na dekarbonizację polskiej gospodarki [Reform of the EU ETS: How to avoid wasting another chance for decarbonization of the Polish economy], ClientEarth 2019, pages 11-13.
131 See in more detail in point 4.1.4 below.
132 OJ EU L 76 of 2018, page 3.
133 See https://www.premier.gov.pl/wydarzenia/decyzje-rzadu/dokument-system-eu-ets-po-2020-r-rekomendacje.html (accessed on November 29, 2019).
134 At the moment, it is not clear who would manage such a fund: Ministry of State Property or Ministry of Climate.

2.1.2 DOES THE SUPPORT CONSTITUTE STATE AID?

> 2019 is the last year for which Poland will issue free emission allowances to power plants

The mechanism for allocating free EUAs during the third EU ETS phase constitutes State aid within the meaning of the TFEU[135]. The aid scheme in question was notified to the EC by the Polish authorities and, following certain modifications (e.g. in respect of plants eligible for allocation of allowances), was finally approved by the Commission decision as aid compatible with the EU internal market at the beginning of 2014[136]. This mechanism is now coming to an end – it is already decided that 2019 is the last year for which Poland will issue free EUAs to power plants.

It should be noted at this point that the EC decision approving the State aid referred to in Article 10c of the ETS Directive was not adopted unconditionally. The Commission did not object to this aid, in particular in view of the explanations provided by the Polish authorities concerning:

- decrease in the installed capacity level in coal-fired power plants by 2020 (from 31,375 MW at that time to 28,854 MW)[137]; and
- deconsolidation of the domestic electricity generation market, in particular by "seeking to ensure that the market shares of the main electricity generator, the PGE group, will not increase or even slightly decline from 37.7% (2011) to 33.4% (2020)"[138].

The Polish authorities do not implement the above mentioned elements of the EC Decision[139]. Recent data show that at the end of 2019 the volume of installed capacity in domestic coal-fired power plants was even higher than at the time of the Commission's approval of State aid under Article 10c of the ETS Directive. In addition, in the Polish power market we are confronted with progressive consolidation and strengthening of the market position of the main beneficiaries of the free allowance allocation mechanism, and this market is currently operating under actual oligopoly conditions, with the dominant position of the PGE Group. In particular, as a result of the acquisition of the assets of the French EDF Group – in 2011 it was the third largest electricity generator in Poland – in 2018 PGE's share in the domestic electricity generation market increased year-on-year by 6 percentage points (hereinafter: "p.p.") and amounted to 43%, and the group 2020 target resulting from the PGE strategy is "over 40%"[140]. Although there is no risk of revoking the EC decision or returning the State aid granted, this situation will certainly have a negative impact on the future negotiations between the Polish authorities and the Commission in the area of climate and energy.

After 2020, the distribution rules for Poland's funds under the EU ETS will change. However, detailed provisions in this respect are not yet known. If, as previously announced, a national special fund for the modernization of the energy sector is set up, it should be presumed that the support granted from it

135 See in more detail in: M. Stoczkiewicz, Free emission allowances for the Polish energy sector in the light of regulations on State aid (in:) Derogations from a transition, op. cit., page 38 et seq.
136 C(2013) 6648 final.
137 Ibidem, point 40.
138 Ibidem, point 37.
139 See in more detail in: EU ETS reform: Jak nie zmarnować kolejnej szansy [How to avoid wasting another chance], op. cit., pages 17-19.
140 See Polska Grupa Energetyczna, Sprawozdanie Zarządu z działalności PGE S.A. oraz Grupy Kapitałowej PGE w 2018 [Report of the Management Board on the activities of PGE S.A. and PGE Capital Group in 2018], page 13.

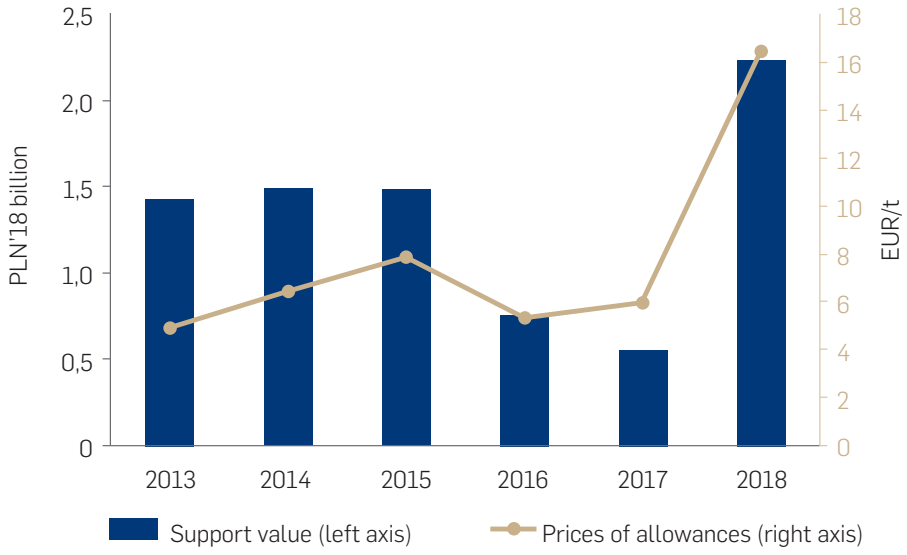
will constitute State aid. The other (in this case obligatory) fund distribution stream established by the ETS Directive itself, the Modernization Fund, does not seem to constitute State aid within the meaning of the TFEU, given the nature of the involvement of supranational institutions in the decision-making process and, therefore, the failure to fulfil the condition for State support or through State resources[141].

2.1.3 ESTIMATION OF SUPPORT VALUE

The value of the support under the mechanism provided for in Article 10c was derived, on the one hand, from the number of allowances allocated and, on the other hand, from their price. Between 2013 and 2015, the gradual decrease in the number of allowances allocated was offset by an increase in their price, which resulted in maintaining the support value in the range of PLN 1.4-1.5 billion (in 2018 prices). A significant decrease in the price of allowances in 2016 and a further reduction in the allocation of allowances resulted in a fall in the value of support to around PLN 760 million in 2016 and slightly more than PLN 550 million in 2017. Almost threefold increase in the average price of allowances in 2018, which took place after the adoption of the EU ETS reform, was the main factor that increased the value of support for the Polish energy sector in 2018. The increase in the allocation of allowances in relation to 2017 also played an important role (see Figure 2 in the next section). In total, Poland's energy sector received almost PLN 8 billion in the period 2013-2018 under the derogation mechanism.

> In the Polish energy market we are confronted with increasing consolidation and strengthening of the position of the main beneficiaries of free allowances

Figure 1. *Value of the Polish power sector support under free EUAs in 2013-2018 in real terms (PLN '18 billion)*



Source: *Own study based on data from the European Environment Agency (EEA), NBP, Eurostat and the National Center of Emission Balancing and Management*

141 See in more detail in: EU ETS reform: Jak nie zmarnować kolejnej szansy [How to avoid wasting another chance], op. cit., pages 33-35.

2.1.4 ASSESSMENT OF SUPPORT EFFECTIVENESS

Since 2013, free allowances are granted to energy entities provided that they prove to have incurred financial expenses to carry out the investment tasks reported in the National Investment Plan ("KPI"). Therefore, the effectiveness of the power sector support under the EU ETS can be assessed by comparing the investments planned in the KPI with their actual implementation (entities performing investment tasks are obliged to submit annual reports on their implementation). Investments are carried out in five areas: infrastructure retrofit, infrastructure modernization, clean technologies, diversification of the energy structure and diversification of supply sources.

> The improvement of the efficiency of coal-fired power units will not ensure the achievement of climate objectives by Poland

Table 1. *Investment tasks assumed in the National Investment Plan (KPI) in relation to their execution (number of tasks)*

Type of investment	Assumptions of the National Investment Plan	Execution of investments between 2014 and 2017	Percentage of completed investments (%)
Modernization of infrastructure (e.g. power units)	214	111	51,9%
Retrofit of infrastructure (e.g. construction of new coal- or gas-fired power plants)	42	13	31,0%
Retrofit of infrastructure/diversification of the energy structure	46	12	26,1%
Diversification of the energy structure (e.g. modernization of biomass-fired boilers, construction of biomass feeding systems)	35	3	8,6%
Clean technologies (development of smart grids)	1	1	100,0%
Diversification of supply sources (e.g. construction or extension of compressor stations)	7	1	14,3%
Retrofit/modernization of infrastructure	2	0	0,0%
IN TOTAL	347	141	40,6%

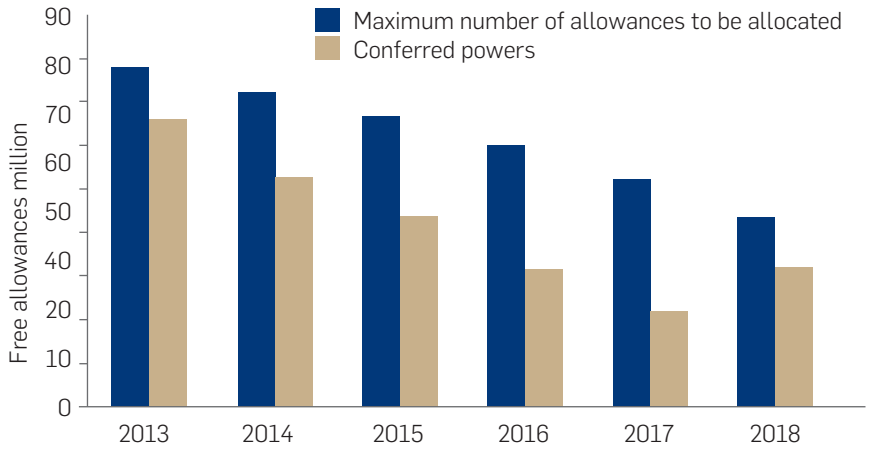
Source: *Own study based on the National Center of Emission Balancing and Management data*

As shown in the reports on the implementation of investment tasks included in the KPI, the scale of the implemented investment activities is small compared to the original assumptions. Between 2014 and 2017, power entities submitted reports on approx. 40% of the investment projects assumed in the KPI. In each subsequent year, the number of implemented investment projects was decreasing – in the last report, the entities indicated that they already performed only 69 tasks (i.e. 20% of the original plan). This is a direct result of low prices of EUAs (lower value of support translates into lower investment capacity of energy entities).

From the point of view of adaptation of the Polish power sector to the framework of the European energy and climate policy, the investments included in the KPI are inefficient. The vast majority of the projects concerned the modernization or retrofit of the existing coal-fired power units and only one project task concerned clean technologies. Increasing the efficiency of coal-fired power units does not ensure that Poland achieves long-term climate objectives, and the coal-fired power plants will in any case have to incur the costs of CO_2 emission.

The unfavorable market environment and the long-term risk for investments in emission capacity recorded in the KPI translated into the withdrawal of some entities from the planned projects. For this reason, the actual allocation of free allowances was much lower than the maximum limit provided for in the EU regulations, which additionally confirms the low efficiency of this solution as a tool for modernization of the Polish power sector.

Figure 2. *Maximum number of free allowances to be allocated to Poland in accordance with Article 10c and actual allocation in 2013-2018*



Source: *Own study based on data of the European Commission*

2.2 LONG-TERM CONTRACTS AND STRANDED COSTS

2.2.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

In the 1990s, in the countries of Central and Eastern Europe, including Poland, there were large investment needs in the scope of modernization of the power sector, while at the same time there was insufficient capital to implement the necessary investments on the part of energy undertakings[142]. This situation resulted in conclusion of long-term power purchase agreements (the

142 See in more detail in: M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 154 et seq.

so-called long-term contracts) with the power plant and combined heat and power plant operators at a fixed price (in practice higher than average market prices)[143]. In Poland, the long-term contracts were concluded with the State-owned Transmission System Operator – Polskie Sieci Elektroenergetyczne (hereinafter: "PSE").

The long-term contracts were to enable the producers to raise the necessary investment funds. Future receivables of power undertakings towards PSE, resulting from the long-term contracts were used to secure the repayment of the debt incurred for the implementation of investment projects. The long-term contracts were concluded between 1994 and 1998 with most of the then national power undertakings for a period of up to 21 years. Depending on the undertaking, the long-term contracts were to expire between 2005 and 2027[144]. The scale of the long-term contracts was enormous: at the end of 1990s these contracts constituted about 75% of the domestic energy market, and in 2005 – only approx. 45%[145].

> The scale of the long-term contracts was enormous: at the end of 1990s these contracts constituted about 75% of the domestic energy market

Poland had to adapt to EU competition and energy regulations when joining the EU in 2005. Since the long-term contracts raised serious doubts as to the compatibility with the liberalized internal electricity market, the Polish authorities prepared and notified to the EC a draft act on the rules for covering the costs incurred by the generators as a result of the early termination of long-term contracts[146], which included a proposal for a compensation mechanism intended to cover undertakings which have previously concluded long-term contracts with PSE in good faith.

The termination of the long-term contracts would involve the generation of the so-called stranded costs, i.e. costs which the companies incurred prior to the amendment to law and which cannot be recovered due to the effects of the amendment. Finally, the long-term contracts were terminated on April 1, 2008 and the Act on long-term contracts adopted in 2007 provides for a special transitional fee, which is one of the components on the electricity bill of each final customer in Poland. The revenues from that fee are largely used to cover the stranded costs incurred by the generators[147]. The Act also contains specific provisions concerning the so-called gas costs, i.e. costs resulting from the termination of long-term contracts for the supply of natural gas with undertakings generating energy using this fuel[148].

The compensation scheme under the Act on long-term contracts eventually included twelve generators[149] (part of the long-term contracts had already expired). The scheme is handled in terms of financing by a State-owned company – Zarządca Rozliczeń, specially appointed for this purpose under the Act on long-term contracts. Since the beginning of 2019, the transitional fee has been of minor importance – its rates for all consumers have been reduced by approx. 95% (year-on-year)[150]. However, this was possible due to the earlier significant (in the case of typical households – more than twofold) increase in

143 See https://www.zrsa.pl/kdt/historia/ (accessed on November 29, 2019).
144 See M. Stoczkiewicz, Ryzyka prawne związane z rynkiem mocy w Polsce [Legal risks related to the capacity market in Poland], ClientEarth 2017, page 13.
145 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., page 155.
146 OJ of 2018, item 1571, as amended.
147 See Article 2(8) of the Act on long-term contracts.
148 See Article 44 et seq. of the Act on long-term contracts.
149 See Appendix 1 to the Act on long-term contracts.
150 See https://www.gov.pl/web/aktywa-panstwowe/ceny-energii-elektrycznej-w-2019-r-nie-wzrosna-ustawa-przyjeta-przez-parlament-rp (accessed on November 29, 2019).

the fee rates for 2017-2018, pursuant to the amendment to the Act on long-term contracts of mid-2016[151].

The said amendment also added to the Act a doubtful mechanism enabling Zarządca Rozliczeń to allocate funds from the transitional fee to investment certificates of State-owned investment funds, which certificates may then be replaced with shares of energy undertakings (not necessarily those State-owned). In the next step, these shares may be transferred free of charge to the State Treasury[152].

Zarządca Rozliczeń has already allocated funds to the aforementioned investment certificates. However, neither the company nor the Polish authorities make public which specific State fund/funds were recapitalized in this way, referring to trade secrets and business secrets[153]. The lack of transparency in this respect is very doubtful, given that both parties to such a transaction are State-owned entities and the transitional fee funds are public resources from electricity customers.

> The Commission has declared the long-term contracts unlawful and incompatible with the internal market

2.2.2 DOES THE SUPPORT CONSTITUTE STATE AID?

Both the long-term contracts and the compensation mechanism for their termination were formally examined by the EC. Finally, in its decision of September 2007[154], the Commission declared the long-term contracts unlawful and incompatible with the internal market[155]. Consequently, the EC ordered the termination of all other long-term contracts by April 1, 2008 at the latest[156]. However, the Commission did not rule on the reimbursement of the support granted under the long-term contracts. On the other hand, the compensation scheme adopted in return was approved by the EC as State aid compatible with the internal market[157].

In the context of State aid, the amended Act on long-term contracts raises doubts as to the above mechanism, which includes the possibility of:

- allocation by Zarządca Rozliczeń of funds to investment certificates of State funds; and
- exchange of these certificates for shares of energy undertakings.

In practice, ultimately, it is nothing else than the recapitalization of energy undertakings. However, according to the latest information, Zarządca Rozliczeń has not yet exchanged any investment certificates for shares in such undertakings[158]. In theory, the structure of that mechanism is capable of fulfilling the conditions for State aid laid down in Article 107(1) TFEU, since:

- the funds are to be granted to energy undertakings;
- these funds come from and can only be granted by State-owned entities and the redistribution mechanism in question was introduced by law;

151 Journal of Laws of 2016, item 925.
152 See Articles 54(3)-(5) of the Act on long-term contracts.
153 See http://orka2.sejm.gov.pl/INT8.nsf/klucz/ATTB75JTP/%24FILE/i26917-o1.pdf (accessed on November 29, 2019).
154 K (2007) 4319 final.
155 See Article 1(2) of that decision.
156 See Article 2(2) of that decision.
157 See Article 4(2) of that decision. See in more detail in: M. Stoczkiewicz, Koszty osierocone w energetyce a pomoc państwa [Stranded costs in the power sector and State aid] (in:) Przegląd Prawa Publicznego [Public law review], No. 6/2008, page 27.
158 Information provided to ClientEarth by Zarządca Rozliczeń on November 19, 2019.

- mechanism provides a selective advantage, as only energy undertakings can be its target beneficiaries; and therefore, this mechanism is likely to distort competition and affect trade between EU Member States.

The amendment to the Act on long-term contracts in question should therefore have been notified to the EC in order to obtain legal certainty as to the status and legality of the introduction of such a redistribution mechanism for funds at the disposal of the State-owned Zarządca Rozliczeń.

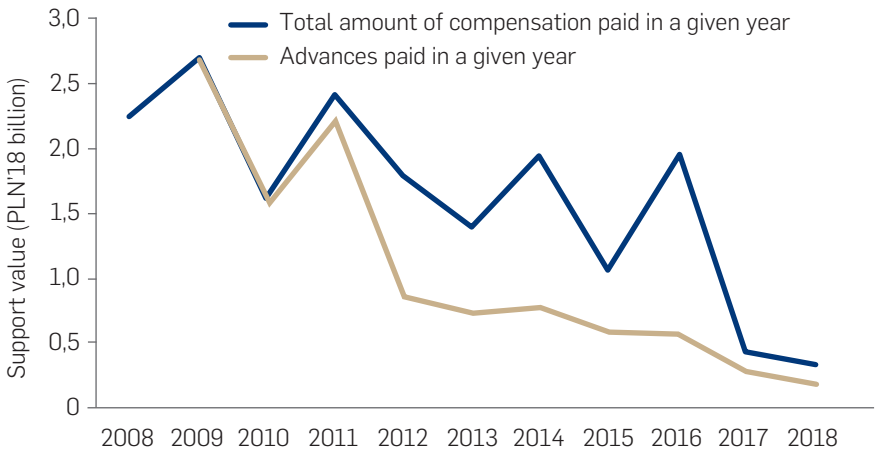
In practice, the allocation of resources to investment funds does not fall within the scope of this document, since energy undertakings cannot be the mechanism beneficiaries, at least direct, (the statutory criteria in this regard seem to be met, for example, by investment funds operating within the PFR group – see point 2.9 below in more detail). The list of specific beneficiaries of these funds is not publicly available.

> The structure of the contracts had a number of defects from the point of view of cost effectiveness

2.2.3 ESTIMATION OF SUPPORT VALUE

According to the reports of the Office of Competition and Consumer Protection (hereinafter: "OCCP"), the compensation for termination of long-term contracts was in the period 2008-2016 an expense of approx. PLN 1.0-2.5 billion per year. Its amount is determined annually by the President of ERO, whereas since 2012 the final value of the support has been regularly much higher than the advance payments made to the companies by Zarządca Rozliczeń. Each year by the end of July, the President of ERO presents information concerning the adjustments to the compensation amount, however, the final settlement of the support takes place only on August 31 of the next year. This causes the OCCP to publish the final value of the compensation with a delay of about two years, as the Authority only gives the value of the advances paid by Zarządca Rozliczeń in a given year, while adjusting the values of the previous year. Therefore, the final amount of support granted to the power sector in 2017 will be known only at the end of 2019.

Figure 3. *Value of support for the Polish power sector as part of compensation payments for termination of long-term contracts in 2008-2018 in real terms*



Source: *Own study based on OCCP data for 2008-2016 and ERO for 2017-2018*

Nevertheless, on the basis of the available information on the maximum level of support and historical disbursements, it can be concluded that the vast majority of funds under the compensation scheme have already been transferred to energy companies. For example, according to the activity report of the President of ERO in 2017, by December 2016, total funds corresponding to 98% of the maximum compensation amount were paid to PGE Górnictwo i Energetyka Konwencjonalna S.A.[159] (and its legal predecessors). For this reason, in 2017-2025 compensation will play a much more limited role than in 2008-2016.

> The key doubt concerns the possibility of recapitalizing power companies from surplus revenues of Zarządca Rozliczeń

2.2.4 ASSESSMENT OF SUPPORT EFFECTIVENESS

The effectiveness of the current compensation mechanism should be assessed as a whole, taking into account the context in which it was introduced. The long-term contracts appeared in 1990s, prior to the liberalization of the energy market, and served to ensure financing of investment projects in modernization of the power infrastructure (power plants), in particular in the scope of reduction of pollutant emissions. This objective was achieved, but the very structure of the contracts had a number of defects from the point of view of cost effectiveness: very long operation period, no reduction in the intensity of support and link not only to external parameters, but also to internal costs of the undertaking. This has resulted in a reduction in the possibility of developing cheaper alternative sources in the energy mix due to the guarantee of energy receipt, non-transparent pricing in the market and lack of sufficient incentives to improve the effectiveness.

All this made the liquidation of long-term contracts necessary, as their structure was incompatible with the assumptions of liberalization of the energy market. Therefore, the termination of long-term contracts had a pro-effectiveness effect by opening up the power sector to changes by forcing all energy generators to take into account the market environment, introducing incentives for continuous improvement of effectiveness and lack of guarantee of maintaining the status quo in the power system. It should be noted that the negative features of long-term contracts were systemic solutions, covering most of the energy production in Poland, unlike, for example, RES support schemes which are addressed to new technologies with limited market share and which, in principle, are designed to accelerate their development at the initial stage of market expansion.

However, it should be emphasized that at the time of the implementation of long-term contracts it was not possible to implement an alternative solution without a thorough reform of the entire power sector management system in the market direction, i.e., e.g., resignation from support and consent for the price increase caused by exclusion of a part of the power output from the system to allow for repayment of new investments in the power sector. In this context, the long-term contracts allowing for financing modernization projects have achieved the intended effect, including the environmental effect, while there are many inefficiencies resulting from the then approach to regulation of the power sector. From this point of view, the granting of compensation for the termination of long-term contracts can be assessed as a compromise which

159 Hereinafter: PGE GiEK.

has allowed the necessary market reform to be carried out while maintaining business confidence in the regulatory environment in the power sector, in line with the pacta sunt servanda principle.

However, the key doubt concerns the mechanism which occurred in 2016, i.e. the recapitalization of companies from the surplus revenues of Zarządca Rozliczeń, resulting from the increase in the substitution fee. This mechanism operates de facto as tax for the purchase of energy assets by the public sector. Its functioning raises a number of doubts, which include, first of all, the regressive nature of this mechanism, the separation of the energy price from the actual costs of its production (for comparison, the compensation itself may be linked to the repayment of capital investments from the past years) and the legitimacy of financing by electricity customers of further consolidation of the power sector around the State Treasury companies.

> Public support to capacity providers constitutes State aid which poses a risk of distorting competition in the EU internal market

2.3 EXISTING CAPACITY MECHANISMS: OPERATIONAL CAPACITY RESERVE AND COLD CONTINGENCY RESERVE

2.3.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

There are currently several capacity mechanisms in Poland. Such mechanisms are aimed at ensuring energy security by guaranteeing an appropriate volume of dispatchable capacity reserves in case of a hazard to correct operation of the power system[160]. The introduction of capacity mechanisms has become more and more common along with the increase in the capacity installed in weather-dependent RES sources. The EU institutions emphasize that public support to capacity providers constitutes State aid which poses a risk of distorting competition in the internal electricity market[161]. The possibility for Member States to adopt capacity mechanisms has been regulated by the EEAG since 2014 – a separate chapter 3.9 of the Guidelines was devoted to them.

The most important capacity mechanisms of those operating (i.e. those where we are already dealing with physical power supply to the power system) comprise the Operational Capacity Reserve and Cold Contingency Reserve, which are mainly dedicated to conventional power units (pumped storage power plants may also participate in the Operational Capacity Reserve[162]). Moreover, since 2017, in Poland there has been a system of tenders dedicated to electricity customers for the provision of services for the demand side response (DSR) at the request of the transmission system operator – PSE[163]. The capacity mechanism is also made up of the service provided for PSE – operational reserve, which is provided mainly by the pumped storage power plants[164]. In accordance with the EC decision approving the Polish ca-

160 For more details on such mechanisms, see in: L. Hancher, A. De Hauteclocque, M. Sadowska, Capacity Mechanisms in the EU Energy Market. Law, Policy and Economics, Oxford 2015.
161 See EC Report on the Sector Inquiry on Capacity Mechanisms: https://ec.europa.eu/energy/sites/ener/files/documents/com2016752.en_.pdf (accessed on March 16, 2020).
162 I.e. hydroenergy storage facilities.
163 More information on DSR programs on the PSE website: https://www.pse.pl/uslugi-dsr-informacje-ogolne (accessed on November 29, 2019).
164 This service may also be provided by gas-fired power units. See point 2.1.11.3 of the TNC.

pacity market (this mechanism is referred to in more detail in point 2.4 below), all the above mentioned mechanisms must be repealed by the end of 2020[165] at the latest and they will be replaced by the capacity market as of 2021.

Both the Operational Capacity Reserve and Cold Contingency Reserve mechanisms (as well as the other above-mentioned programs) were not adopted directly under an act, but under the Polish Grid Code (hereinafter: "Grid Code")[166], being a technical document adopted by PSE and approved by the President of ERO[167]. However, the material scope of the Grid Code is determined by Article 9g of the Energy Law[168]. These mechanisms have been amended during their period of validity: this document refers to their latest versions.

The Operational Capacity Reserve is a form of the so-called targeted capacity payments which cover a limited part of the energy market. In accordance with the Grid Code, Operational Capacity Reserves are active generating units which at a given moment operate or are in standstill, constituting the excess capacity available to PSE in excess of the demand for electricity covered on general principles of the energy market (including in the balancing market)[169]. PSE obligatorily purchases this reserve on business days between 7 AM and 10 PM. The Operational Capacity Reserve is regarded in the Grid Code as the basic ancillary service aimed at supporting the balancing of the power system. The settlement price for the provision of the Operational Capacity Reserve service in a given hour is determined for all units in the same manner, on the basis of the template included in the Grid Code[170].

The Cold Contingency Reserve is also defined in the Grid Code as an ancillary service, but of an extraordinary nature. Unlike the Operational Capacity Reserve, the Cold Contingency Reserve is an optional mechanism: The Grid Code leaves the decision on contracting or not this additional reserve at the discretion of PSE[171]. The Cold Contingency Reserve is the form of a strategic reserve covering conventional power units that do not meet the emission requirements of the EU Industrial Emissions Directive (IED)[172] and benefit from the limited lifetime derogation referred to in Article 33 of that Directive[173,174]. The entities providing the Cold Contingency Reserve operate outside the market and are at the sole disposal of PSE[175]. As part of the project, PSE has been in possession of 5 power units with a total capacity of 830 MW since 2016[176]. All these units are expected to be permanently shut down by the end of 2019[177].

The Cold Contingency Reserve may be used only in the situation of expected problems with balancing of the power system. In accordance with the Grid Code, PSE may include in their plans the power units covered by the Cold Con-

> The Cold Contingency Reserve resembles strategic reserves operating in other EU countries

165 See point 16(g) of decision C(2018) 601 final.
166 The applicable Grid Code is available on the PSE website: https://www.pse.pl/dokumenty (accessed on November 29, 2019).
167 See in more detail in: R. Gawin, K. Smagiel, R. Trypens, Commentary to Article 9g (in:) Z. Muras, M. Swora (ed.), Energy Law, Volume II, Commentary to Articles 12-72, Warsaw 2016, pages 693 et seq.
168 Journal of Laws of 2019, item 755, as amended.
169 See point 2.1.10.1 of the Grid Code.
170 See point 5.3.2.1.3 (1) of the Grid Code.
171 See point 2.1.11.1 of the Grid Code.
172 OJ EU L 334 of 2010, page 17.
173 In principle, the derogation enables operation for a maximum of 17,500 hours during the period from January 1, 2016 to December 31, 2023 at the latest.
174 See 2.1.11.3 of the Grid Code.
175 See point 2.1.11.5 (1) of the Grid Code.
176 Two in Dolna Odra Power Plant, two in Siersza Power Plant and one in Stalowa Wola Power Plant.
177 See https://www.pse.pl/dokumenty?safeargs=666f6c64657249643d3333393139 (accessed on November 29, 2019).

tingency Reserve only if without these units it is not possible to balance the power demand[178]. Detailed conditions of managing by PSE of the power units providing the Cold Contingency Reserve service are specified in the contract between PSE and the power unit operator[179]. As part of the Grid Code, the support is provided in the pay-as-bid formula, i.e. each unit participating in the mechanism receives individual remuneration for the provision of the said service, in the amount presented in the proposal submitted to PSE[180]. Similarly as in the case of the currently implemented capacity market, as part of the Cold Contingency Reserve, PSE purchases two services, i.e. readiness to provide contingency power generation and physical supply of electricity to the system at the request of the operator[181].

The contracting of entities providing all ancillary services (including Operational Capacity Reserve and Cold Contingency Reserve) shall take place in accordance with the provisions on public procurement[182]. In the case of the Cold Contingency Reserve, PSE has the right to conclude long-term contracts (which has been used in practice)[183]. PSE makes payments for the system services on the basis of invoices submitted by the operators of the units providing them[184]. The costs of purchase by PSE of all ancillary services are covered by the transmission fee (according to the quality rate)[185], which is a component of the electricity bill of each final customer in Poland (in the part concerning energy distribution). Under the same rules, the costs of maintaining the required power reserves in the Polish Power System are covered[186]. Electricity related to the provision of all ancillary services is settled on the balancing market[187].

2.3.2 DOES THE SUPPORT CONSTITUTE STATE AID?

Under the Grid Code, both the Operational Capacity Reserve and the Cold Contingency Reserve are classified as ancillary services and have so far not been formally examined for compliance with the conditions regarding State aid under Article 107(1) of the TFEU. It is clear that both these services are capacity mechanisms: both the Operational Capacity Reserve and the Cold Contingency Reserve have been thus classified by the EC in the course of its sector inquiry into the electricity capacity mechanisms used in the EU[188]. As indicated in point 2.3.1 above, such mechanisms always create a risk of distorting the competition in the electricity market and may involve granting of State aid. If a capacity mechanism fulfills the conditions of Article 107(1) of the TFEU, the EEAG (in particular Section 3.9 thereof) are the benchmark for its compliance with the EU State aid law from 2014 onwards. It should be noted that both the Operational Capacity Reserve and the Cold Contingency Reserve became operational after the entry into force of these guidelines (i.e. in 2015 and 2016 respectively).

178 See point 4.1.4.6 of the Grid Code.
179 See point 2.1.11.7 of the Grid Code.
180 See CE, Commission Staff Working Document, SWD(2016) 119 final, pages 95-96: https://ec.europa.eu/competition/sectors/energy/capacity_mechanisms_swd_en.pdf (accessed on March 16, 2020).
181 See point 2.1.11.6 of the Grid Code.
182 See point 2.2.2.3 of the Grid Code.
183 Ibidem.
184 See points 5.4.3.1-5.4.3.2 of the Grid Code.
185 See point 2.2.2.5 of the Grid Code.
186 See point 4.1.4.4.4.5 of the Grid Code.
187 See point 5.3.2.4.1 of the Grid Code.
188 See SWD (2016) 119 final.

The Cold Contingency Reserve mechanism is structurally very similar to strategic reserves functioning in other EU Member States, in particular the German capacity reserve[189] and the Belgian strategic reserve. Both mechanisms were considered by the EC to be State aid compatible with the internal market[190]. Importantly, the German authorities initially argued before the EC that the proposed capacity reserve does not constitute State aid but a service of general economic interest (SGEI)[191], but the Commission did not share this view[192].

From the point of view of the State aid law, significant differences between the Polish Cold Contingency Reserve and the aforementioned reserves from western Europe are generally only as follows[193]:

- the fact that the Cold Contingency Reserve is not introduced directly by a common regulation, such a legal act, but only on its basis, i.e. under the Grid Code (it should be noted that detailed rules for the functioning of the Belgian reserve are also regulated only in a document adopted by a local transmission system operator and approved by the national regulatory authority)[194];
- lack of involvement of the Polish authorities in the process of determining detailed parameters of the Cold Contingency Reserve mechanism functioning (e.g. in Belgium, the level of contracted capacity volume is determined by the minister of energy)[195];
- contracting the Cold Contingency Reserve on the basis of public procurement regulations and not through a dedicated auction mechanism; and
- optionality of the Cold Contingency Reserve – contracting this service is not obligatory, but it depends on the decision of PSE.

Despite the fact that the costs of the Cold Contingency Reserve and the Operational Capacity Reserve are not covered from a separate fee (as in the case of the capacity levy or RES fee), they are transferred to all final customers of electricity in Poland, in the distribution part of the electricity bill. However, the costs of operating these capacity mechanisms in Germany and Belgium are also transferred through a general grid fee[196]. The lack of a dedicated fee is also applicable in the case of national support schemes in the form of color certificates (for RES, cogeneration), the purchase costs of which are included by electricity sellers in the price of electricity sold to the consumers of electricity.

In the opinion of PSE, the Cold Contingency Reserve, due to its characteristics, has no impact on the functioning of the primary power market[197]. The same is true, however, for the aforementioned German and Belgian reserves, which the EC classified as State aid. However, the Operational Capacity Reserve may have an impact on the electricity volumes generated by individual

189 For more details on this mechanism, see section 5.1 below.
190 See the Commission Decisions C (2018) 612 final and C (2018) 589 final respectively.
191 For more details on SGEIs, see point 2.10 below, concerning the so-called Energy Prices Act.
192 See points 88 and 97 of Decision C (2018) 612 final.
193 Prepared on the basis of the above-mentioned Commission Decision.
194 See point 4 of Decision C (2018) 589 final.
195 Ibidem, point 37.
196 See point 22 of Decision C (2018) 612 final and point 79 of Decision C (2018) 589 final respectively.
197 See https://www.pse.pl/-/komunikat-osp-dot-wykorzystywania-przez-osp-zrodel-wytworczych-swiadczacych-usluge-interwencyjna-rezerwa-zimna-irz-?safeargs=696e6865726974526564697265637 43d74727565 (accessed on March 16, 2020).

units on the power market: PSE explicitly includes in its plans the limitations resulting from the necessity to ensure the required Operational Capacity Reserve volume at the generating units planned for operation[198]. In other words, unlike the Cold Contingency Reserve, the Operational Capacity Reserve is a mechanism operating as part of a broadly understood energy market and not outside it.

When comparing the Cold Contingency Reserve with the EEAG, doubts must be raised in particular by the fact that the Grid Code significantly limits the possibility of participation in this capacity mechanism – only thermal generation units (in practice coal-fired generation units) using the above-mentioned emission derogation under the Industrial Emissions Directive are eligible for participation in the Cold Contingency Reserve[199]. In comparison, DSR units may eventually also participate in the German capacity reserve.

The Cold Contingency Reserve mechanism can be considered as State aid within the meaning of Article 107(1) of the TFEU as the remuneration for the provision of the service in question:

- is undoubtedly granted to energy undertakings;
- is granted by a widely understood state or through state resources since:
  - this mechanism was adopted on the basis of a statutory mandate by PSE as an entity wholly controlled by the state200,
  - the funds to cover the costs of its operation come from the transmission fee paid by all electricity consumers, and
  - the aforementioned funds are controlled by PSE;
- offers a selective advantage, in particular in view of a very limited number of potential beneficiaries limited to operators of old coal-fired power units qualifying for emission derogation under the Industrial Emissions Directive;
- poses a risk of distorting the competition, since the Cold Contingency Reserve is not a natural element of the electricity market and only a part of the competitors present on the market receive remuneration for the provision of this service; and
- it affects trade between EU Member States as electricity is traded on the internal market.

Similar basic structural elements define the Operational Capacity Reserve. However, a much larger number of service providers may participate in this mechanism.

The point that the Cold Contingency Reserve or the Operational Capacity Reserve constitute State aid, can be obviously counterargued. It is raised, for instance, that a tendering procedure which complies with EU public procurement rules and is, therefore, leading to the possibility of achieving a market price gives rise to a presumption that there is no economic benefit[201] and thus prevents fulfillment of the condition of a "selective advantage" laid down in Article 107(1) of the TFEU. On the other hand, the products delivered as part of

> Cold Contingency Reserve can be considered State aid

198 See point 4.1.4.4.1.2 (3) of the Grid Code.
199 See point 2.1.11.3 (2.1) of the Grid Code.
200 See Article 9 k of the Energy Law.
201 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., page 197 and the case-law referred therein.

the Cold Contingency Reserve and the Operational Capacity Reserve services have been designed by the state-controlled entity (namely PSE) and, as such, would not exist on a fully liberalized electricity market.

Moreover, the fact that the Cold Contingency Reserve or the Operational Capacity Reserve fulfill all the fundamental features of State aid does not mean that these mechanisms would be considered by the EC to be incompatible with the EU internal market (given, in particular, that the Commission has already approved very similar mechanisms after relatively small adjustments).

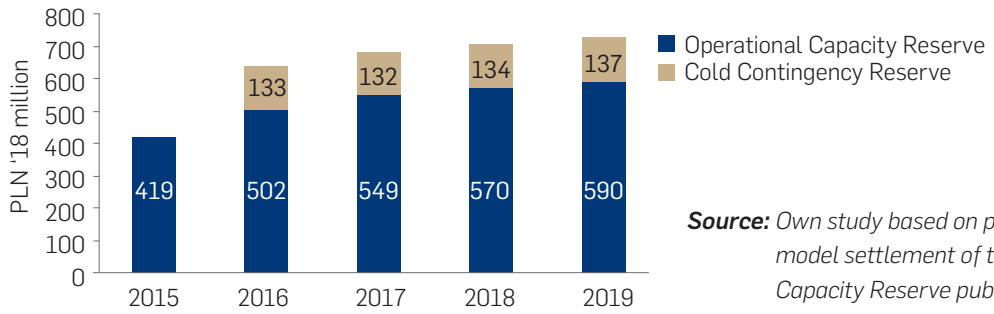
The doubts discussed in this section show that introduction of the capacity mechanisms such as the Cold Contingency Reserve or the Operational Capacity Reserve should be each time preceded by a notification of their assumptions to the EC in order to gain legal certainty as to the compatibility of the planned measures with EU law. This also applies to capacity mechanisms dedicated to DSR units: a support scheme very similar in structural terms to Polish tenders for this market segment, which is being implemented in Germany, has recently been considered by the EC as State aid (compatible with the internal market)[202]. This is particularly important in view of the very beneficiaries of such regulations, especially since a mechanism which is no longer applicable may also be examined by the EC. In June 2019, the Commission has opened an in-depth investigation procedure in relation to the Lithuanian strategic capacity reserve which was operational between 2013 and 2018 and has never been officially notified to the EC[203].

> The EC may also examine a mechanism that is no longer applicable

2.3.3 ESTIMATION OF SUPPORT VALUE

Due to the fact that more generating units are covered by the Operational Capacity Reserve mechanism, it supports the electricity sector to a greater extent than the Cold Contingency Reserve. In 2019, this support will amount almost to PLN 600 million, i.e. almost 50% more than in the first year of operation of this mechanism (2015). Whereas with the Operational Capacity Reserve operational in 2015-2019, the total support granted came to over PLN 2.6 billion. At the same time, as part of the Cold Contingency Reserve, the power sector received approx. PLN 536 million in 2016-2019. In 2019 alone, the value of support will amount to almost PLN 140 million, i.e. almost four times less compared to the funds resulting from the Operational Capacity Reserve.

Figure 4. *Value of support for the Polish power sector under the Operational Capacity Reserve and the Cold Contingency Reserve in PLN million*



Source: *Own study based on parameters of the model settlement of the Operational Capacity Reserve published by PSE*

202 See in more detail in point 5.1 below.
203 See the Commission Decision C (2019) 3949 final.

Both in the case of the Operational Capacity Reserve and the Cold Contingency Reserve, the value of the support is increasing year after year. The total value for both the support mechanisms will amount to approx. PLN 730 million in 2019. However, the total support for the power sector in 2015-2019 due to operation of the Operational Capacity Reserve and Cold Contingency Reserve mechanisms can be estimated at more than PLN 3.6 billion.

> Total support in 2015–2019 from the Operating Capacity Reserve and the Cold Contingency Reserve mechanisms can be estimated at more than PLN 3.6 billion

2.3.4 ASSESSMENT OF THE SUPPORT EFFECTIVENESS

Already in 2015, that is at the time of introduction of the capacity mechanism, the Operational Capacity Reserve was put to a test. Due to a heat wave in August, the Polish power network and the generating facilities operated under worse conditions, which in turn resulted in limitations of electricity supply to industrial consumers (the so-called twentieth power supply level). The Operational Capacity Reserve did not solve the problem of power shortage since the reserve receives only the surplus of electrical power generated by power units. Difficult weather conditions (high temperature) first resulted in a lack of spare capacity, so the power generators could not bring any capacity into the Operational Capacity Reserve scheme. That mechanism did not require the generators to guarantee that the contracted resources would be made available. Consequently, the funds spent on the Operational Capacity Reserve did not ensure an improved functioning of the Polish power system.

The main problem both for the Operational Capacity Reserve and the Cold Contingency Reserve is that they worsen the situation of the generating units not covered by the support scheme. This is related to the risk of weakening the price signals which are used to structurally address the problem of power shortage in the system (high prices in case of shortage). Solving this problem is possible with appropriate adjustment of the operating parameters of the Cold Contingency Reserve activated only in situations of very steep prices, corresponding to the costs of failure to supply electricity (currently this mechanism operates without considering the market price level). The factors limiting the effectiveness of operation of both the mechanisms in Poland undoubtedly include the lack of consideration of both the demand side and foreign units.

There are also significant differences between the Operational Capacity Reserve and the Cold Contingency Reserve in favor of the latter, which include in particular: 1) price fixing as a result of a tender and not an administrative decision; and 2) no direct impact on the electricity market. The aforesaid factors made the European Commission consider instruments such as the Operational Capacity Reserve (i.e. the targeted capacity payments) the least efficient capacity mechanisms[204]. On the other hand, strategic reserves, such as the Cold Contingency Reserve, were considered a solution generally allowing a temporary solution to the problem of security of supplies during implementation of reforms aimed at eliminating the so-called missing money problem (a structural shortage of revenues from a single-commodity energy market preventing maintenance of generating capacities ensuring stable operation of the power system). However, it is worth noting that the strategic reserve may constitute a durable element of the energy market as a relatively effective mechanism, which makes it possible to increase the reserves in the

204 See SWD (2016) 119 final.

system above the level indicated by the energy market. This may be desirable for non-economic reasons, for example due to occurrence of high non-financial costs of loss of power supply or the lack of possibility to cover the costs of maintaining the network stability by sensitive consumers.

2.4 CAPACITY MARKET

2.4.1 DESCRIPTION AND JUSTIFICATION OF THE SUPPORT

The capacity market is a form of a capacity mechanism. The Polish capacity market, adopted in the form of a dedicated act of December 2017[205], is a market-wide, volume-based capacity mechanism. The set capacity volume is commissioned in centralized auctions conducted by the Polish transmission system operator, PSE. The official justification for the act is to ensure medium- and long-term security of electricity supply to the final customers in a cost-effective, non-discriminatory and sustainable manner[206].

The winners of the auction are obligated to provide the service by being ready to supply electricity to the power system and to supply this power during periods of system stress. In return, the capacity provider receives remuneration for the fulfillment of the capacity obligation. The remuneration per kW of offered capacity is the same for each supplier and is determined based on pay-as-clear model. The capacity obligation may be traded on the secondary market. Non-fulfillment of the obligation is subject to civil law penalties.

Participation in the capacity market cannot be combined with the use of the RES and cogeneration support scheme or participation in any other capacity mechanism (including abroad). The Capacity Market Act also requires that in the case of a new or retrofitted power unit, the remuneration for performance of the capacity obligation is reduced by the amount of "investment" State aid for its construction or retrofit[207] (granted e.g. in the form of free EUAs under the EU ETS)[208].

The capacity market will be financed by a special capacity fee which from October 2020 will constitute a new item on the electricity bill of each final customer in Poland. Delivery of capacity under the new mechanism will start on January 1, 2021 and the remaining existing capacity mechanisms must cease to exist in Poland by that date at the latest[209]. Despite the fact that not only power plants but also active electricity customers (the DSR units) and directly foreign units may participate in the Polish capacity market, in practice the mechanism supports mainly the existing coal-fired power units[210], although on paper it prefers low-emission suppliers[211].

205 Journal of Laws of 2018, item 9, as amended.
206 See Article 1(2) of the Capacity Market Act.
207 See Article 62(1) of the Capacity Market Act.
208 See footnote 36 on page 37 of the Commission Decision C (2018) 601 final.
209 See point 16(g) of the Commission Decision C(2018) 601 final.
210 See in more detail in point 2.4.3 below.
211 As far as the form of the Polish capacity market is concerned, see in more detail in: W. Kukuła, M. Stoczkiewicz, Poland Introduces a Market-wide Capacity Remuneration Mechanism, EStAL 1/2018, pages 133-135.

2.4.2 DOES THE SUPPORT CONSTITUTE STATE AID?

> In practice, the capacity market supports mainly the existing coal-fired power units

The Polish capacity market was developed based on a UK model which was the first capacity mechanism approved by the EC pursuant to the EEAG[212]. The UK capacity market was successfully challenged before the General Court of the European Union (for formal reasons related mainly to discrimination of DSR units)[213], as a result of which the mechanism was suspended by the UK authorities (there was no legal basis available to make capacity payments)[214]. However, it was re-approved by the EC in October 2019[215]. Although the Polish power market has modified its British original in many aspects[216], there were no doubts from the beginning that it constitutes State aid.

The Polish mechanism meets all the conditions under Article 107(1) of the TFEU as the remuneration for fulfillment of the capacity obligation:

- is granted to capacity providers which are energy undertakings;
- it is granted by the state or through state resources since the funds come from a capacity levy imposed on electricity consumers and these funds are controlled by the state Zarządca Rozliczeń[217] and the redistribution mechanism is regulated through an act;
- it offers a selective advantage, for example in view of the 2 MW threshold to claim eligibility for the aid;
- distorts or threatens to distort competition, since the capacity market constitutes a state-created "overlay" for the basic energy market and only a part of the competitors on this market receive remuneration for fulfillment of the capacity obligation; and
- it may affect trade between EU Member States as electricity is traded on the internal market[218].

Poland notified the EC the capacity market as a mechanism constituting State aid and the EC, in its decision of February 2018, declared it compatible with the internal market[219]. The Polish capacity market was also challenged before the General Court of the European Union by the same undertaking and on the basis of similar complaints as in the case of the UK mechanism[220]. The complaint is currently pending. Poland continues to implement the capacity market as approved by the applicable Commission Decision[221]. However, from 2020 onwards, Poland will have to modify the scope of this mechanism due to the provisions of the new EU IEM Regulation, in principle preventing capacity payments after June 30, 2025 to units emitting 550 or more grams of CO_2 per kWh of generated electricity[222], which in practice excludes coal-fired power plants from the capacity market.

212 See the Commission Decision C (2014) 5083 final (accessed on November 29, 2019).
213 See the judgment of the General Court in case T-793/14.
214 The current status of the mechanism is available at: https://www.gov.uk/government/collections/electricity-market-reform-capacity-market (accessed on November 29, 2019).
215 Commission Decision C (2019) 7610 final.
216 See in more detail in: W. Kukuła, Assessment of the Polish Act on the Capacity Market, ClientEarth 2018.
217 See https://www.zrsa.pl/ (accessed on November 29, 2019).
218 See in more detail in: W. Kukuła, M. Stoczkiewicz, The Polish Draft Act on the Capacity Market in light of EU law, ClientEarth 2016.
219 Decision C(2018) 601 final.
220 Case T-167/19.
221 The latest information in this respect is available at: https://www.pse.pl/aktualnosci-rynku-mocy.
222 See Article 22(4) of the Regulation 2019/943. Within the Polish capacity market, the main auctions are conducted five years before the delivery period, i.e. the auction for supply of capacity in 2025 will take place in 2020.

2.4.3 ESTIMATION OF THE SUPPORT VALUE

The first auctions took place in 2018 and covered the period from 2021 to 2023. In 2019-2025, subsequent auctions are to be organized each year in 2024-2030 respectively. The units that won the auctions were divided into the following: the existing capacity market units, new capacity market units (prospective units), retrofitted capacity market units and demand side response units (DSR). On the auctions these entities may contract the available capacity for a year or for a longer period.

Table 2. *Total capacity obligation of the units that won the main auction for the supply period from 2021 to 2023, broken down by the type of investment (MW)*

	2021	2022	2023
Existing units	10274	10614	9903
New units	4022	4022	4875
Retrofitted units	7516	7636	7636
Demand side response units (DSR)	615	766	801
IN TOTAL	22427	23039	23215

Source: *Own study based on the Energy Regulatory Office data*

The number of units that won auctions decreases annually because already during the first auction (for 2021) as many as 60 capacity units concluded contracts for longer than one year. Within the capacity market, approx. 160-180 generating units are to remain ready to deliver or reduce power each year, of which the largest share is attributable to the existing units and the smallest to the new ones.

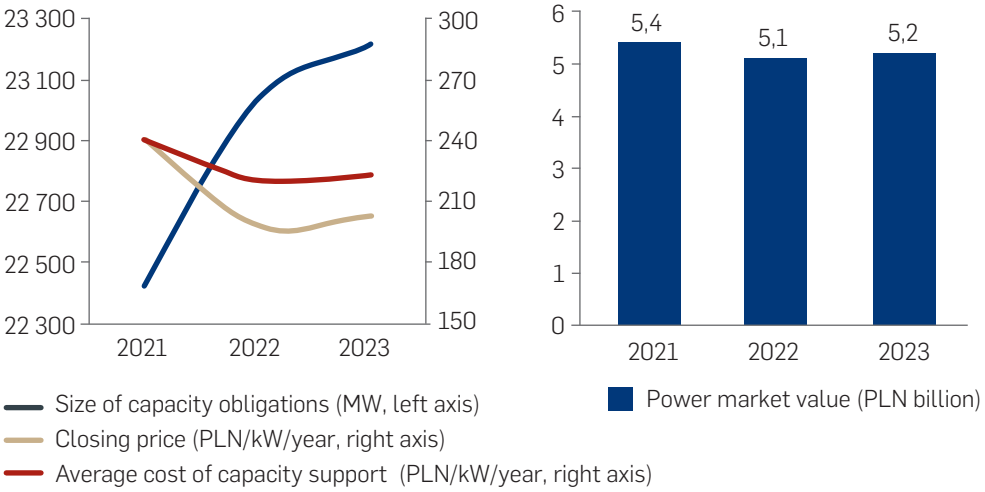
Table 3. *Capacity obligation per capacity unit which undertook to maintain the capacity obligation in 2021-2023 (MW/unit)*

	2021	2022	2023
Existing units	122	107	138
New units	366	366	406
Retrofitted units	160	80	80
Demand side response units (DSR)	34	35	33
IN TOTAL	160	180	156

Source: *Own study based on the Energy Regulatory Office data*

The total volume of capacity obligations in individual years amounted to approx. 22-23 thousand MW. With the price per kW of PLN 200-240, the total value of the Polish capacity market resulting from the main auctions conducted so far[223] will be approx. PLN 5.4 billion in 2021, approx. PLN 4.6 billion in 2022 and approx. PLN 4.7 billion in 2023. The Polish capacity market will be much more expensive than its British or French equivalent, where at a similar cost the contracted capacity volume is two times, three times or even four times higher[224].

Figure 5. *Capacity market size in 2021-2023 (main auctions only)*



Source: *Own study based on the Energy Regulatory Office data*

2.4.4 ASSESSMENT OF THE SUPPORT EFFECTIVENESS

While assessing the effectiveness of the capacity market, two elements of the assessment should be distinguished, namely an assessment covering the rules of operation of the capacity market itself and an assessment of its adjustment to the needs of the power system transformation in Poland.

In the case of the rules of operation of the capacity market, it is first of all necessary to emphasize the far-reaching changes which occurred at the stage of consultation with the European Commission and which increased the competitiveness of this mechanism[225]. These include the abandonment of separate so-called auction baskets (inability to control the auction result by determining the preferred distribution of baskets and competition between new and existing units) and the inclusion of the demand side and foreign units. Significant changes from the point of view of dynamic effectiveness of the capacity market also covered introduction of preferences for low-emission sources and – pursuant to European regulations – withdrawal of an option to support high-emission coal-fired power units from mid-2025.

> The Polish capacity market will be much more expensive than the UK or French market

223 In the years directly preceding the delivery period, PSE will still conduct supplementary auctions on which an additional capacity volume missing to cover the predicted peak demand will be contracted.
224 See W. Kukuła, Assessment of the Polish Act, op. cit., page 3.
225 Ibidem.

From the point of view of economic efficiency, a doubtful feature of the Polish power market, in turn, is classification as "new" units of the already commissioned units (new Power Unit No. B11 in Kozienice Power Plant) or units being at an advanced stage of an investment project (e.g. new power units in Opole Power Plant) at the time of organizing the auction. Given that the 15-year period of the contract for new units is intended to provide an incentive for investors, the award of such a contract to projects regarding which a decision has been already made is not justified considering creation of an incentive effect. In this case, it would be advisable to adapt the contracts to the actual remaining cost of the investment project implementation. Therefore, most of the "new" power units could expect annual or 5-year contracts. In other words, the support scheme should not take into account the so-called sunk costs resulting from decisions of energy undertakings taken before introduction of new solutions into the scheme.

From the point of view of the actual implementation of the capacity market mechanism and its adaptation to the needs of the energy transformation in Poland, two significant problems should be pointed out. The first one is the relatively high cost of functioning of the mechanism due to insufficient supply of new, cost-competitive projects. In combination with the lack of auction baskets (resulting from the requirements of the EU EEAG), this translates into a high overall cost of the capacity market functioning. At this point, it is worth noting that this does not necessarily indicate that the lack of use of auction baskets is ineffective. An intermittent higher cost of this solution can be offset by improving the long-term efficiency of how the funds are used, i.e. by avoiding overinvestment in new sources while oversizing the corresponding baskets.

The second problem is the functioning of the capacity market after 2025 considering withdrawal of the support for most coal-fired power plants remaining in the scheme[226]. It is not clear how this market will operate in the new situation, i.e. whether the volume of contracted capacities will be reduced (considering uncertainty regarding maintenance of adequate reserves in the form of coal-fired power plants in the absence of mechanisms ensuring their maintenance in the system) or whether the volume of power obtained from coal-fired sources will be quickly withdrawn from the system and the support will be rapidly shifted towards sources generating smaller emissions, mainly in the form of gas-fired power plants.

In the first case, the capacity mechanism will no longer guarantee the stability of supplies in the longer term, at high costs until 2025. In the second case, there is a risk of over-supporting new gas-fired power plants by concluding long-term contracts for new capacities in the system. An alternative solution would be to withdraw the capacity market after 2025, with a possible restoration of the strategic reserve mechanism. This option ensures a maximum flexibility of the process of replacing controllable generating capacities under conditions of fast technological changes and possible implementation of a strategic reserve allows to ensure security of electricity supplies above the levels supplied by market signals. Ultimately, it should be expected that such a reserve will include mainly coal-fired power units which at high prices of emission allowances and fast development

226 See A. Glikowska-Fyk, Rynek mocy do przeglądu [Capacity market for review]. Analysis of the results of three auctions, Energy Forum 2019.

of low-emission energy sources will be excluded from the energy market already at the end of 2030s[227].

2.5 RES SUPPORT SCHEMES

2.5.1 DESCRIPTION AND JUSTIFICATION OF THE SUPPORT

In Poland, there are currently several large operational (i.e. aimed at covering the costs of operation of the plant) RES support schemes. All of them are currently regulated by the Act on Renewable Energy Sources (hereinafter: "RES Act")[228]. In addition, in Poland there are many decentralized investment support schemes (covering some part of the costs of construction of a plant), which, in principle, are not regulated by law and are of minor importance. This section focuses on the operational support. Furthermore, support schemes for large-scale power plants using RES are presented below, with the exception of operational support dedicated to prosumers, i.e. electricity consumers installing additional power sources behind-the-meter[229].

The most important operational RES support schemes are as follows:

The scheme of certificates of origin commonly referred to as "green certificates"[230]

This scheme has been in use since 2005[231] and is in force for RES plants that started to generate electricity before July 1, 2016. Currently, the green certificate scheme is gradually replaced by an auction scheme (see below). Today, the main beneficiaries of the scheme are onshore wind farms, although for a long time the scheme supported mainly co-firing of biomass in coal-fired power units[232]. At present, 0.5 certificates are available for such plants per 1 MWh of electricity generated from biomass[233]. In addition, a new EU Directive 2018/2001 on the promotion of the use of electricity from renewable sources (hereinafter the "RES Directive")[234] greatly restricts the possibility of granting support for co-firing plants[235].

The essence of the scheme is that for each MWh of electricity from RES, the generator becomes entitled to a green certificate which has a financial value determined by the market and is an additional source of revenue (apart from revenues from the sales of the electricity itself)[236]. The demand for green certificates is regulated by the provisions of the RES Act – each electricity supplier is obligated to hold an appropriate level of certificates, and the costs of

227 See I. Tatarewicz, M. Lewarski, S. Skwierz, Scenariusze niskoemisyjnego sektora energii w Polsce i UE w perspektywie roku 2050 [Scenarios for the low-emission energy sector in Poland and the EU until 2050]. Summary, Climate and Energy Analysis Center (CAKE), the National Center of Emission Balancing and Management (KOBiZE), Institute of Environmental Protection - National Research Institute (IOS-PIB), Warsaw 2019.
228 Journal of Laws of 2018, item 2389, as amended.
229 The most important scheme of this type is net-metering referred to in Article 4 of the RES Act.
230 See Article 44 et seq. of the RES Act.
231 During the first decade in use, the green certificate scheme was regulated by the provisions of the Energy Law.
232 See the Report on the activities of the President of the Energy Regulatory Office in 2018, Warsaw, April 2019, page 151 et seq.
233 See Article 194 of the RES Act.
234 Official Journal of the European Union, L 328, 2018, page 1.
235 See Article 29(11) of the RES Directive.
236 Green certificate quotations are available at: https://tge.pl/prawa-majatkowe-rpm (accessed on November 29, 2019).

their purchase are included in the price sold to electricity customers. The support is granted for a period of 15 years.

Since the mid-2016, a submarket of dedicated certificates of electricity generated from agricultural biogas (the so-called blue certificates)[237], which is one of the more expensive electricity generation technologies, has been separated from the scheme. However, some of the existing biogas plants have decided to shift to new support schemes, i.e. the auctioning or tariff support (see below).

> Since the mid-2016, the green certificate scheme has been gradually replaced by a new auction scheme

The auction scheme[238]

Since the mid-2016, the green certificate scheme has been gradually replaced with a new auction scheme for the sale of electricity from RES. The auctions (tenders) are organized on behalf of the state by the Energy Regulatory Office. The auctions are carried out in several separate technological "baskets" (one of these baskets includes onshore wind farms and photovoltaics (PV)). The participants who submit the lowest bids win the auctions.

The winners of the auctions receive support in the form of a so-called contract for difference guaranteeing a fixed selling price for each 1 MWh of electricity, indexed with an inflation index[239], in principle for a period of 15 years. Each winner is offered an individual price it has specified in the auction (pay-as-bid model). If the current wholesale electricity price is lower than the one specified by the auction participant, the state pays the price difference to the auction participant, whereas if the market price is higher, the auction winner shall reimburse the difference to the state. The additional payments for the scheme participants are financed from a special RES fee which since the mid-2016 constitutes a separate item in the electricity bill of each electricity consumer in Poland[240].

The current wording of the RES Act stipulates that the last auction under this scheme must be settled by June 30, 2021 at the latest. In other words, unless the authorities decide otherwise, the scheme will already expire in one and a half years.

Additionally, since the mid-2018, the RES Act provides for simplified support schemes for smaller-scale RES plants as an alternative to the auction scheme:

The Feed-in Tariff scheme[241]

Under this scheme a generator is entitled to receive a fixed purchase price of electricity without the need to participate in the auction, also for a period of 15 years. The fixed purchase price is currently 95% of the starting price of the relevant auction (the so-called reference price). The participants sell the electricity outside the market and, therefore, there is no mechanism to reimburse the price difference. The FiT scheme is limited to plants with capacity of up to 500 kW and, in terms of technology, to hydro, biogas and biomass power plants. The scheme is financed from the RES fee.

237 See Article 44 section 1a of the RES Act.
238 See Article 71 et seq. of the RES Act.
239 See Article 92 section 10 of the RES Act.
240 Currently, the RES fee rate amounts to PLN 0/MWh. See https://www.ure.gov.pl/pl/urzad/informacje-ogolne/aktualnosci/7908,Stawka-oplaty-OZE-na-2019-r.html (accessed on March 16, 2020).
241 See Article 70a(1) of the RES Act.

A contract for difference without the need to participate in an auction (the Feed-in Premium scheme)[242]

The scheme is applicable to plants with capacity between 500 kW and 1 MW, using the same technologies as in the case of the FiT scheme. Participants sell electricity on the market, but do not have to take part in an auction. The fixed purchase price amounts to 90% of the reference price for a given technology within the auction scheme. The FiP scheme is also financed from the RES fee.

2.5.2 DOES THE SUPPORT CONSTITUTE STATE AID?

The concept of a support scheme as used in the EU RES Directive[243] is broader than that of a State aid mechanism. In practice, any measure constituting State aid will represent a support scheme within the meaning of the RES Directive, but it is possible to construct the RES support scheme in a way that does not grant State aid. The first Polish renewable energy support scheme (the obligation to purchase electricity from RES[244] introduced in 1999) should be considered such a scheme due to a failure to meet the condition for intervention with the use of state resources[245].

On the other hand, there is no doubt that State aid consists of all the operational support schemes listed above under the RES Act. The EC issued decisions establishing the existence of aid both for the green certificate scheme (in August 2016)[246] and for the auction scheme (in December 2017)[247]. However, the Polish authorities did not initially notify the green certificate scheme to the EC, which initiated the procedure itself after obtaining the relevant market information. However, the auction scheme was notified late only after its adoption. In both cases, the Polish authorities failed to fulfill their obligations under EU law (Article 108(3) TFEU). Despite the fact that in both cases the EC ultimately overlooked the matter and approved the aid schemes as compatible with the internal market, the Commission required the Polish authorities to make certain changes to these schemes.

The market information on the green certificate scheme raised, in particular, the issue of overcompensation for co-firing of biomass with coal. The RES Act adopted in the course of the EC proceedings provides for limitations in the scope of development of this technology (e.g. adjustment of green certificates with a factor of 0.5). The market information in this respect was presented to EC, among others, by ClientEarth[248]. Following the EC's objections, Poland also had to substantially modify the auction scheme, including the rules of cumulation with other aid schemes, ensuring a more competitive price formation process or listing the auction baskets. Poland also committed itself to abolish the discriminatory rules for charging of real property tax in the case of wind farms[249].

242 See Article 70a(2) of the RES Act.
243 Official Journal of the European Union, L 328, 2018, page 1.
244 This scheme was introduced pursuant to the Regulation of the Minister of Economy on the obligation to purchase electricity and heat from non-conventional sources and the scope of this obligation (Journal of Laws of 1999, No. 13, item 119).
245 See the CJEU judgment in the case C-329/15 ENEA vs. President of the Energy Regulatory Office (ECLI:EU:C:2017:671) concerning the obligation to purchase electricity generated in cogeneration. For more details about this judgment, see point 2.6.2 of this report.
246 C(2016) 4944 final.
247 C(2017) 8334 final.
248 See https://www.pl.clientearth.org/ke-system-zielonych-certyfikatow-naruszenie-prawa/ (accessed on November 29, 2019).
249 These amendments were introduced into the Polish law by an amendment of the RES Act of June 2018 (Journal of Laws of 2018, item 1276).

Both schemes were approved based on the EEAG, according to which more competitive auction schemes are the form of RES support preferred by Member States[250]. On the other hand, the FiT and FiP tariff schemes were drawn up based on the provisions of the GBER[251], so that they did not have to be notified to the EC. However, the Commission became aware of the functioning rules of these simplified support schemes and referred to them when making the decision approving the auction scheme without raising any objections as to their design[252].

2.5.3 ESTIMATION OF THE SUPPORT VALUE

2.5.3.1 Green certificates

The green certificate market peaked in 2012. At that time, the renewable energy sector generated in total more than 16 TWh of electricity at the price of green certificates of approx. PLN 250/MWh. As a result, the value of support exceeded PLN 4 billion. In the last analyzed year, the green certificate market declined more than twice, despite exceeding the level of 20 TWh of renewable energy generation. In 2017, its value is estimated at PLN 1.5 billion.

Figure 6. *Volume of electricity generated from RES in 2005-2017 (TWh)*

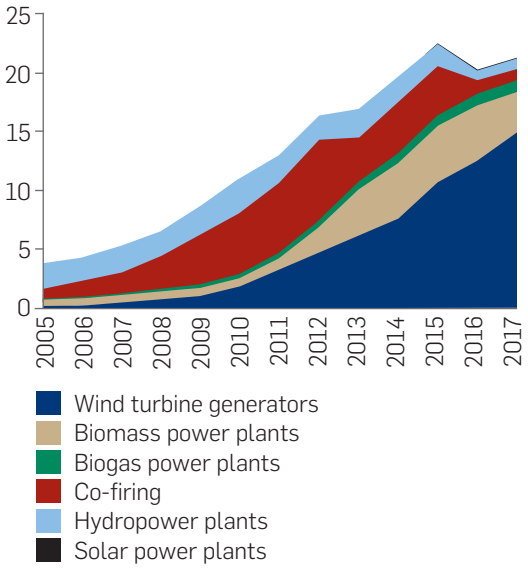
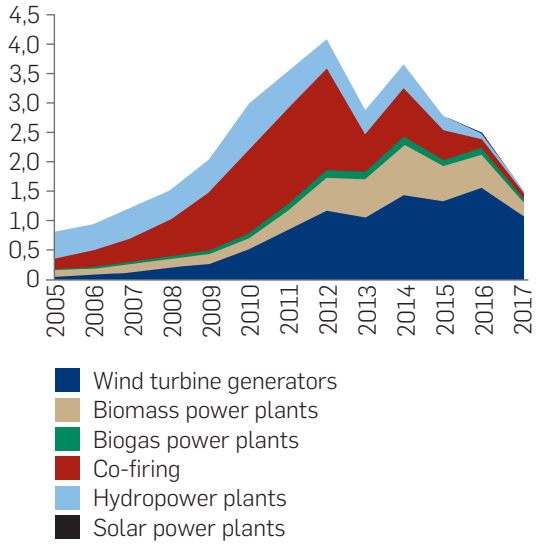


Figure 7. *Value of green certificates issued on the Polish RES market in 2005-2017 in terms of value (PLN billion '18)*



Source: *Own study based on the Energy Regulatory Office, TGE and Eurostat data*

The decrease in the value of support under the green certificate scheme is linked to the oversupply of these instruments since 2012, mainly due to the excess support for the co-firing technology that previously dominated both in terms of the amount of electricity produced and the value of certificates is-

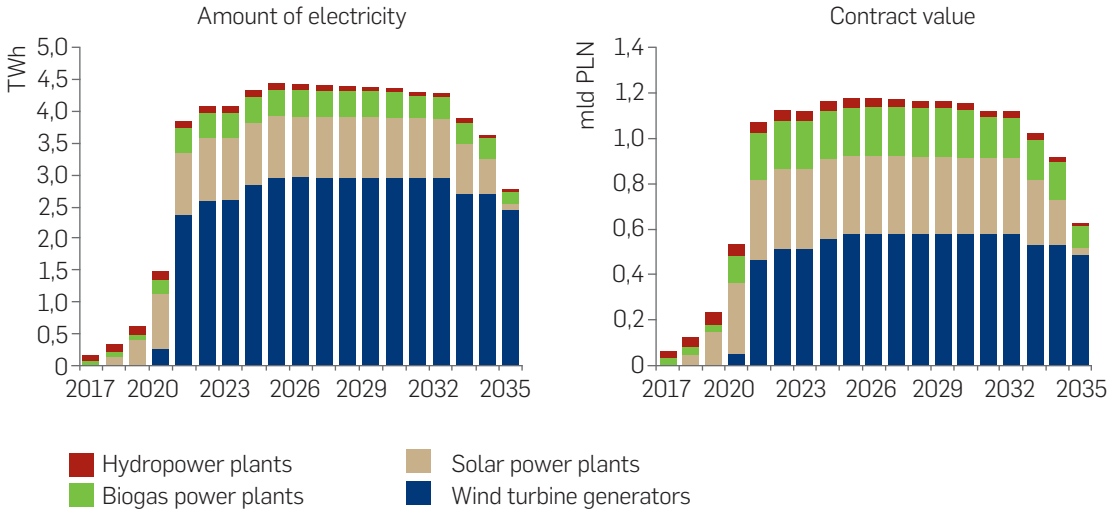
250 See point 124 of the EEAG.
251 See in particular Articles 42 to 43 of the GBER.
252 See https://europa.eu/rapid/press-release_IP-17-5261_en.htm (accessed on November 29, 2019).

sued. The support was then transferred towards wind energy which already contributed with approximately 15 TWh in 2017. Although to a much smaller extent, the share of electricity generation from biomass also increased but its share in the value of certificates issued in recent years has significantly decreased.

2.5.3.2 The auction scheme

In 2016-2018, eleven RES auctions took place, in which the generators submitted a total of 1159 bids. They included generation of more than 64 TWh of electricity in 2017-2035 with a total value of approx. PLN 17.2 billion. The most electricity (both in terms of quantity and the value of contracts) was contracted from the wind energy sector, followed by the photovoltaics, and only then by biogas plants and hydropower plants.

Figure 8. *Quantity and value of electricity contracted in RES auctions in 2016-2018*



Source: *Own study based on the Energy Regulatory Office data*

The net value shows the difference between the electricity sales prices contracted in the RES auction and the predicted electricity price on the wholesale market. By 2035, the average contract for the sale of electricity from wind power plants will bring savings for consumers thanks to low contracted prices. On the other hand, electricity from photovoltaic sources will generate relatively small cost decreasing over time (or savings in case of higher increase in the wholesale electricity prices than expected). By 2035, biogas plants will receive the greatest net support. In general, in the second half of the 2020s, the net savings from contracts under RES auctions will outweigh the costs, translating into lower bills for the final customers of electricity.

Figure 9. *Average prices of electricity contracted in RES auctions in 2016-2018*

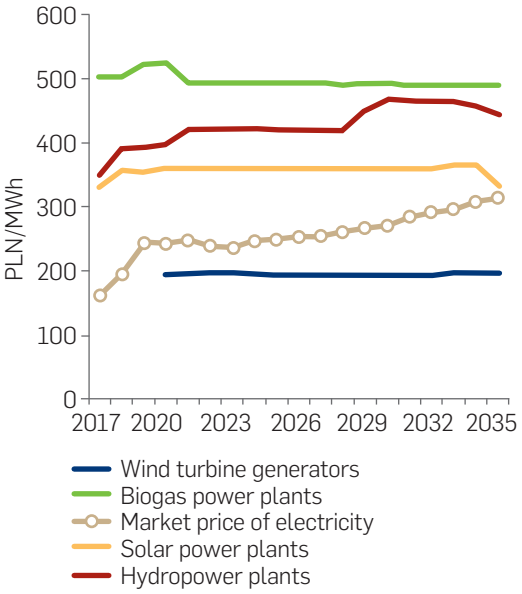
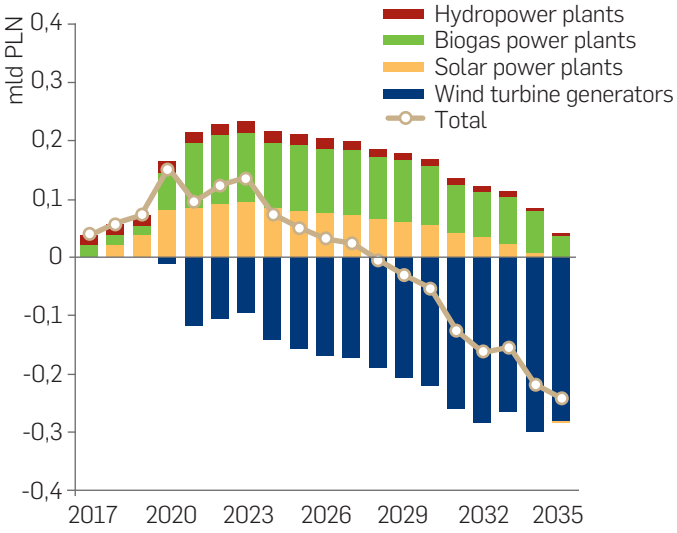


Figure 10. *Net value of support for generation of electricity contracted in RES auctions in 2016-2018*



Note: *Net value calculated as the difference between the price of electricity from the RES auction and the predicted price on the wholesale electricity market. Forecast of electricity prices until 2022 according to TGE forward contracts, for 2023-2035 in accordance with the Draft Energy Policy for Poland 2040 of November 2018. In the case of solar power plants, the market price was adjusted (+11%) to take into account the production profile of photovoltaic systems*

Source: *Own study based on the data from the Energy Regulatory Office, TGE and Ministry of Energy*

> The net savings from contracts under RES auctions will outweigh the costs, translating into a decrease in the bills of electricity consumers

2.5.4 ASSESSMENT OF THE SUPPORT EFFECTIVENESS

The green certificate scheme in Poland was characterized by low effectiveness throughout its lifetime. This was due to both the structural features of this type of support and to the manner in which it was implemented in Poland.

The color certificate schemes are characterized by a high level of uncertainty as to the level of support, resulting both from market changes (affecting the supply of certificates) and political decisions (the demand for certificates is specified in ordinance regulation of the minister competent for energy). Although such a design allows to reduce short-term costs of achieving the assumed RES target, this is done at the expense of increased investment risk and, consequently, also the cost of capital required to implement the investment projects. This leads to a deterioration of competitiveness of capital-intensive technologies, such as wind farms and photovoltaic systems. Ensuring stable support for the RES generators by counteracting oversupply on the certificate market requires imposing very high obligations of their redemption (or continuous adjustment of the obligation level), which in turn worsens the situation of electricity consumers.

In the Polish regulatory environment, all weaknesses of the green certificate scheme were revealed. The lack of a long-term vision of the RES develop-

ment, varying regulations, allowing large volumes of electricity from co-firing of biomass in coal-fired power plants in the support scheme as well as lack of response to the growing problem of oversupply of certificates resulted in the fact that green certificates were not an effective tool for supporting the long-term modernization of the Polish energy sector. The financing of co-firing plants did not lead to a permanent increase of the RES potential in the Polish energy sector. Instead it provided indirect support for operation of old coal-fired power units. In the case of wind power sector, in turn, fluctuations on the certificate market led to an investment boom followed by a collapse and several years of stagnation in the sector.

On the one hand, the RES auctions allow to reduce short-term costs for electricity consumers and, on the other, to maintain competition between generators to ensure long-term investment certainty and to reduce the costs of the investment project financing. Therefore, investors receive a guarantee of stable revenues still before implementation of an investment project but they have to compete with other generators of electricity from plants of the same type. At the same time, the decrease of the technology costs and the reduction of the design risk (and, consequently, the decrease of the investment project financing costs) make the unit cost of electricity contracted as a result of an RES auction relatively low and in many cases lower than the electricity price on the wholesale market, which will translate into savings for the final customers. This is already happening in the case of wind power sector and in the near future – also in the case of photovoltaic systems. This means that the RES auctions increasingly cease to function as a support scheme and become a means of cost-competitive contracting of large volumes of electricity for the needs of Polish consumers.

> Green certificates were not an effective tool to support the long-term modernization of the Polish energy sector

2.6 COGENERATION SUPPORT SCHEMES

2.6.1 DESCRIPTION AND JUSTIFICATION OF THE SUPPORT

Combined Heat and Power (CHP) is a simultaneous generation of heat and electricity. CHP is one of the main methods of improving energy efficiency (from the same value of primary energy we receive more final energy, which translates into lower CO_2 emissions per unit). Indeed, this technology has been promoted by EU (Community) law since the 1990s. The first Polish support scheme for CHP was the obligation imposed on electricity suppliers to purchase electricity generated in cogeneration, which was introduced at the beginning of 2003.

The support was then granted in the form of certificates of origin from cogeneration, commonly known as color certificates. This scheme has been in use since 2007 and operated similarly to the green certificate scheme mentioned above, applicable to electricity generated from RES. Moreover, participation in both schemes could be combined. The scheme divided the certificates depending on the technology or capacity of the plant, into the so-called:

- yellow certificates for gas-fired units and plants with capacity below 1 MW (regardless of the technology);
- violet certificates for units using mine gas or biogas; and
- red certificates for other cogeneration sources (including in particular coal-fired units).

The color certificate scheme was temporarily suspended in 2013 and early 2014 and, after its prolongation, finally expired at the end of 2018. Both the purchase obligation and the certificate scheme were regulated by the provisions of the Energy Law[253]. Since January 2019, Poland has been subject to a new, dedicated act on promoting electricity from high-efficiency cogeneration (hereinafter referred to as the "CHP Act")[254], which provides for a number of new support schemes relating to both new, retrofitted and planned CHP plants[255]. The Act also divides installations by technology and capacity (three "baskets": up to 1 MW, from 1 MW to 50 MW and over 50 MW).

The support under the schemes is, in principle, granted for a period of 15 years and is granted with respect to electricity fed into the grid. The aid is granted only to plants supplying heat to the public district heating network and to entities emitting not more than 450 g of CO_2 per 1 kWh of energy generated (total electricity and heat, and, therefore, coal-fired units may also benefit from the aid)[256]. In the case of existing plants, only units fired with gaseous fuels (not only natural gas) are supported.

The support under the CHP Act is granted in the form of a premium as an additional payment to the price of electricity, which is intended to cover the gap between the actual costs of electricity generation in cogeneration units and the market price. The amount of the premium is, in principle, reduced accordingly by the amount of the previously granted investment aid[257]. In the case of units with capacity over 1 MW, the bonus is conditional on winning in the auction or in the application process organized by the Energy Regulatory Office. As part of the application procedure dedicated to the largest CHP units, the most advantageous location and the lowest emissions from the plant are beneficial.

The support is granted on a pay-as-bid basis with respect to each MWh fed into the grid. The premiums are paid by the state Zarządca Rozliczeń and are financed from a special cogeneration fee which, from 2019 onwards, constitutes a separate item in the electricity bill of each electricity customer in Poland.

At this point, the support under the CHP Act is a matter of the future. The Ministry of Energy issued a set of regulations necessary to implement the statutory regulations as late as September 2019[258], and in 2019 it is planned to conduct only test auctions with a small volume involved. According to the Polish authorities, the CHP Act is to bring approximately 5 GW of new power capacities in the cogeneration segment within the next ten years[259].

> The RES auctions increasingly cease to function as a support scheme and become a means of cost-competitive contracting of large volumes of electricity for the needs of Polish consumers

2.6.2 DOES THE SUPPORT CONSTITUTE STATE AID?

Most of the aforesaid cogeneration support schemes have been considered State aid by the EC. The color certificate scheme, although notified by the Polish authorities with a long delay (the scheme has been operational since 2007

253 Journal of Laws of 2019, item 755, as amended.
254 Journal of Laws of 2019, item 42, as amended.
255 Prepared based on the provisions of the CHP Act and the Commission Decision C (2019) 2790 final.
256 See point 15 of Decision C (2019) 2790.
257 See Article 14(1) of the CHP Act.
258 See https://www.gov.pl/web/energia/rozporzadzenia-ws-parametrow-nowego-mechanizmu-wsparcia-wysokosprawnej-kogeneracji-opublikowane (accessed on November 29, 2019).
259 Ibid., point 28.

and notified only in 2013), has been approved by the EC as an aid scheme compatible with the internal market. However, this did not take place until 2016, i.e. shortly before the mechanism expired by law[260]. The EC approved the new aid mechanisms provided for in the CHP Act much faster. The Polish authorities first notified the preliminary assumptions of the Act to the EC and the regulation was approved in April 2019, within two months as of formal notification[261].

Both the color certificate scheme and the mechanisms under the CHP Act constitute an operating aid. In view of the requirements of the EEAG, an aid scheme for cogeneration units with a capacity exceeding 300 MW must be notified on a case-by-case basis[262]. The aid in the form of yellow certificates granted to the new gas-fired CHP plant in Płock was approved in this way[263].

An exception in this respect is the obligation to purchase electricity generated in cogeneration, which, as a result of the so-called question referred for a preliminary ruling by the Polish Supreme Court, has not been classified as State aid by the CJEU. The Court concluded that mechanism did not satisfy the condition of the "state intervention or through state resources", with the result that the legislation did not fulfill the conditions of Article 107(1) of the TFEU[264]. At this point the CJEU accepted the doubts signaled by the Supreme Court examining the dispute between the Energy Regulatory Office and Enea energy undertaking. On the other hand, the Court did not share the previous position of the European Commission which, in the course of the procedure for examining the color certificate scheme, found that the obligation to purchase electricity from cogeneration, also forming a part of this scheme, represented a state intervention within the meaning of the TFEU[265].

According to the CJEU, the obligation to purchase electricity from cogeneration did not constitute State aid due to the following circumstances:

- electricity suppliers fulfilled this obligation using their own financial resources (often by purchasing electricity generated in cogeneration at a price higher than the retail price, including in the case of tariffs approved by the Energy Regulatory Office); therefore, the costs of purchase of electricity from cogeneration were not entirely transferred onto the final customers; and
- all energy undertakings, both public and private, were obligated to do so. Even the state-owned companies acted as private entities to meet this obligation.

Consequently, the CJEU concluded that the scheme was not financed through state resources. The judgment of the CJEU concerning the obligation to purchase electricity from cogeneration should be considered as a precedent and, at the same time, controversial and to some extent contrary to the previous case law (in particular laid by the EC), which has interpreted the conditions of Article 107(1) of the TFEU in an increasingly extensive manner over the years[266].

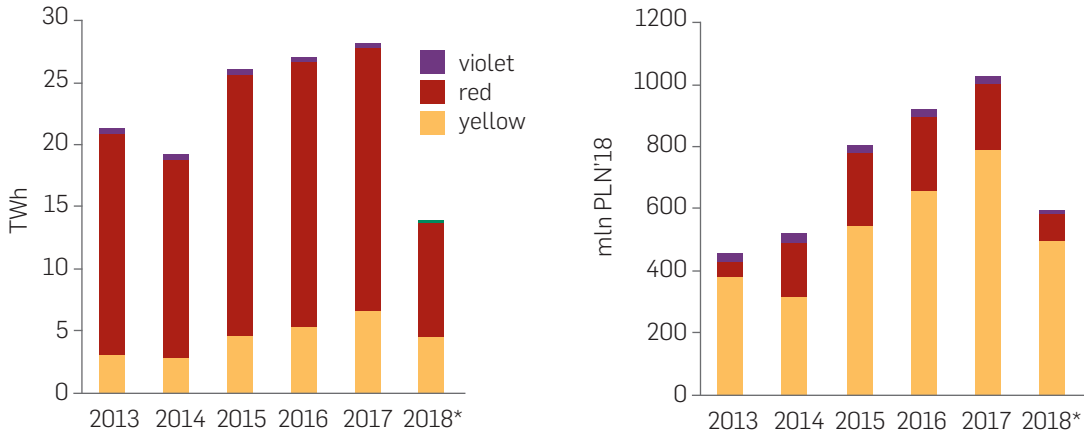
> The purchase obligation itself does not fulfill the condition of the "state intervention or through state resources"

260 See Decision C (2016) 6099 final.
261 See Decision C (2019) 2790 final.
262 See point 20(d) of the EEAG.
263 See the Commission Decision C (2018) 5460 final.
264 See the judgment of the CJEU in the case C-329/15.
265 See P. Ciołkowski, P. Prawda, Obowiązek zakupu energii z kogeneracji to nie pomoc publiczna [The obligation to purchase electricity from cogeneration is not aid]: https://www.cire.pl/item,151333,14,0,0,0,0,0,tsue-obowiazek-zakupu-energii-z-kogeneracji-to-nie-pomoc-publiczna.html (accessed on November 29, 2019).
266 See in particular the CJEU judgements in the case C-206/06 Essent Netwerk (Court Reports 2008, page I-05497) and C-262/12 Vent de Colere, op. cit.

2.6.3 ESTIMATION OF THE SUPPORT VALUE FOR THE COLOR CERTIFICATE SCHEME

Similarly to the situation on the green certificate market, the total value of support under the certificate scheme for cogeneration depends on two factors – the certificate market price (depending, among others, on the statutory amount of the substitute fee) and the volume of electricity generated using the individual technologies. As the Energy Regulatory Office data show, the most electricity from cogeneration is generated in units with a total installed power over 1 MW, fired with fuel other than gaseous fuel and methane (red certificates), i.e. mainly in coal-fired combined heat and power plants. However, due to the higher prices of yellow certificates, they accounted for the largest share of total support for cogeneration under this scheme. In 2017, the total value of the certificate market exceeded PLN 1 billion, out of which more than 70% concerned generation of electricity supported by yellow certificates. At the same time, it should be expected that once the total volume of support for 2018 is reported, its value will be close to 2017.

Figure 11. *The amount of electricity generated from cogeneration with the support of color certificates (left panel) and the value of support in terms of value (right panel) in 2013-2018*



**** Note:*** *only partial results are available for 2018*

Source: *Own study based on data from the reports of the President of the Energy Regulatory Office, TGE and Eurostat*

2.6.4 ASSESSMENT OF THE SUPPORT EFFECTIVENESS

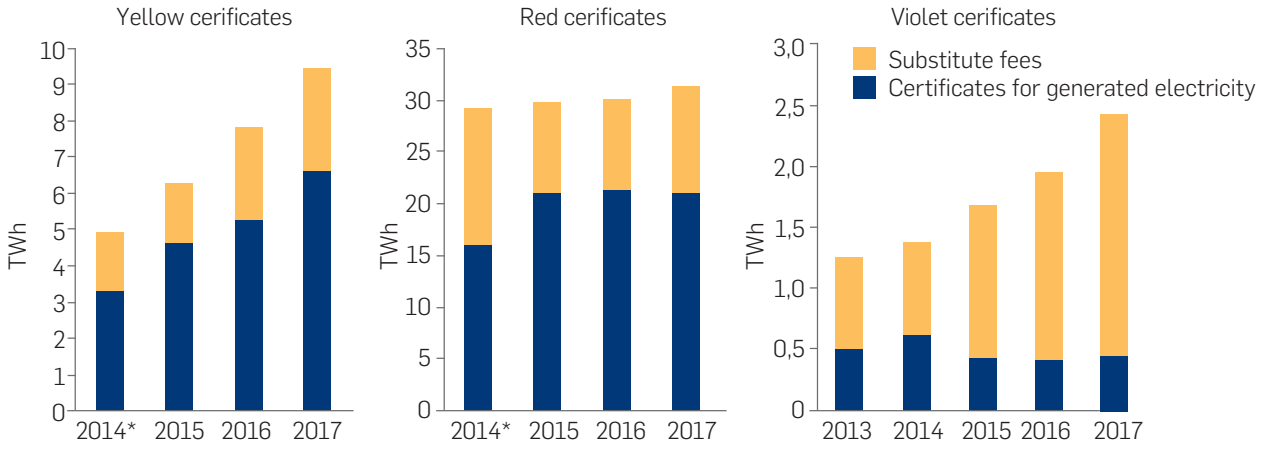
The effectiveness of different types of certificates in stimulating the development of the corresponding technologies varied, as shown by the comparison of changes in the way companies fulfilled their obligation to redeem the color certificates in recent years.

In the case of yellow certificates, the obligation to redeem them increased dynamically, while electricity generation from gas-fired combined heat and power plants increased. Therefore, the larger scale of potential support translated into the actual development of the units covered by yellow certificates. In the case of red certificates, relative stabilization of the electricity generation cov-

> Yellow certificates dedicated to gas-fired units were the most effective ones

ered by this scheme took place. On the other hand, support under violet certificates was the least effective. A significant increase in the redemption obligation only translated into an increase in substitute fee costs but did not lead to a real increase in electricity production from the supported cogeneration technologies.

Figure 12. *Fulfillment of the obligation to redeem the colored certificates in 2013-2017*



Note: *The figures for 2014 were adjusted to take account of a shorter period*

Source: *Own study based on the report of the President of Energy Regulatory Office for 2018*

2.7 SUBSIDIES FROM THE EU FUNDS

2.7.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

Many aid programs for the Polish power sector were financed from EU funds. The aid came from the Cohesion Fund, the European Regional Development Fund or the European Social Fund. Some mechanisms benefited both from European and state funds[267]. The support was granted in the form of subsidies, including interest subsidies on bank loans, or interest-bearing loans and partial redemptions of those loans.

At national law level, such aid schemes were introduced by regulations[268] adopted under a number of acts[269]. Some EU-funded regional aid schemes

267 Regional investment aid for environmental objectives (SA.41730 (2015/X)); Horizontal environmental aid program (SA.44685 (2016/X)).

268 Regulation of the Minister of Economy of January 26, 2009 on granting aid for investment projects in construction or alteration of high efficiency power generating units (Journal of Laws of 2009, No. 21, item 111, as amended); regulation of the Minister of Regional Development of December 7, 2009 on granting aid for investment projects in power sector, telecommunication infrastructure, research and development infrastructure, spa treatment sector as part of regional operational programs (Journal of Laws of 2009, No. 214, item 1661, as amended); regulation of the Minister of Environment of December 21, 2015 on the detailed conditions for granting horizontal aid for environmental protection (Journal of Laws of 2015, item 2250 as amended); regulation of the Council of the Ministers of June 30, 2014 on the determination of the regional aid map for 2014-2020 (Journal of Laws of 2014, item 878, as amended); regulation of the Minister of Environment of March 30, 2015 on the detailed conditions for granting regional investment aid for environmental protection (Journal of Laws of 2015, item 540, as amended);regulation of the Minister of Energy of November 23, 2016 on granting aid for investment projects in construction or alteration of power generating units from renewable energy sources as part of the Operational Program Infrastructure and Environment 2014-2020 (Journal of Laws of 2016, item 1941, as amended);regulation of the Minister of Economy of October 23, 2015 on granting aid for investment projects in construction or alteration of high efficiency combined heat and power units as part of the Operational Programs Infrastructure and Environment 2014-2020 (Journal of Laws of 2015, item 1810, as amended); regulation of the Minister of Infrastructure and Development of September 3, 2015 on granting aid for investment projects in high efficiency combined heat and power units and promoting energy from renewable sources as part of the operational programs for 2014-2020 (Journal of Laws of 2015, item 1420, as amended).

269 Act of December 6, 2006 on principles of development policy (Journal of Laws of 2006, No. 227, item 1658, as amended); Environmental Protection Law; Act of July 11, 2014 on principles of implementation of programs under the cohesion policy financed in the financial perspective 2014-2020 (Journal of Laws of 2014, item 1146, as amended).

were also involved in the power sector[270]. In most cases, the support was provided by a dedicated state institution for environmental protection – the National Fund for Environmental Protection and Water Management (hereinafter: "NFOŚiGW"), independently or jointly with the Voivodship Environmental Protection Funds (hereinafter: "WFOŚiGW"). In several cases, the entities granting the aid were the Marshals of the voivodeships[271].

EU funds are also distributed as part of the Cohesion Policy 2014-2020 (previously also for the period 2007-2013), a key element of which is the Operational Program Infrastructure and Environment 2014-2020 ("POIiŚ"). POIiŚ is a national program that finances projects of national and international importance intended, in particular, to reduce carbon footprint of the economy, protecting the environment, including adaptation to climate change, and enhancing energy security[272].

As regards the power sector, EU funds granted State aid in particular for:

- investment projects in construction or alteration of high efficiency power generating units[273];
- for environmental protection objectives, including, i.a., investment projects to reduce emissions, to generate energy from RES, to adapt to EU environmental protection standards, to increase energy efficiency and to invest in power infrastructure[274];
- as part of POIiŚ for:
  - construction or alteration of units generating energy from RES[275],
  - construction or alteration of cogeneration units[276];
- as part of the regional operational program for the period 2014-2020 for:
  - high efficiency cogeneration systems,
  - promoting energy from renewable sources;
- at the regional level – for broadly understood investment projects in the power sector, including for: construction or alteration of infrastructure and equipment used for generation, distribution or transmission of electricity, including from RES, as well as for purchase and modernization of such equipment[277].

Many of the aforementioned programs are in force and will remain in force until June 30, 2021[278], and the regional public investment aid program until the end of 2020[279]. Two of the programs in question ceased to be in force at the end of 2013[280] and June 30, 2014 respectively[281].

270 SA.41730(2015/X).
271 Regional aid scheme for investment projects in the power sector, telecommunication infrastructure, research and development infrastructure, and spa treatment sector (EC decision C(2009)5363) corr.), adopted by the EC Decision C(2013) 9240 final; aid for high efficiency combined heat and power units and for the promotion of energy from renewable sources under the Regional Operational Programs 2014-2020 (SA.43229 (2015/X)).
272 See more at: https://www.pois.gov.pl/ (accessed on November 29, 2019)
273 Aid for investment projects in construction or alteration of high efficiency power generating units (X328/2009).
274 SA.44685(2016/X).
275 Aid for investment projects for construction or alteration of renewable energy generation units under the Operational Program Infrastructure and Environment 2014-2020 (SA.47030 (2016/X)).
276 Aid for investment projects in construction or alteration of high efficiency cogeneration units under the Operational Program Infrastructure and Environment 2014-2020 (SA.43907(2015/X)).
277 EC Decisions: C(2009)5363) corr. and C(2013) 9240 final.
278 SA.44685(2016/X); SA.47030(2016/X); SA.43907(2015/X); SA.43229 (2015/X).
279 SA.41730(2015/x).
280 X328/2009.
281 EC Decisions: C(2009)5363) corr. and C(2013) 9240 final.

2.7.2 DOES THE SUPPORT CONSTITUTE STATE AID?

All the mechanisms taken into account in point 2.7.1 constitute State aid compatible with internal market. Many aid programs[282] were introduced under a simplified procedure on the basis of EC regulations declaring certain types of aid compatible with the internal market[283]. One of the programs, which was subsequently extended, was approved as authorized State aid under the EC Decision[284].

It should be noted here that support from European funds is also often granted directly from EU funds or through EU institutions (e.g. the European Investment Bank, EIB) without additional involvement of national entities. Such support does not satisfy the condition of being granted "by a Member State or through state resources" and therefore does not constitute State aid within the meaning of the TFEU and is outside the scope of this publication.

> Support granted directly from EU funds does not constitute State aid within the meaning of the EU law

2.7.3 ESTIMATION OF THE TOTAL VALUE OF SUPPORT

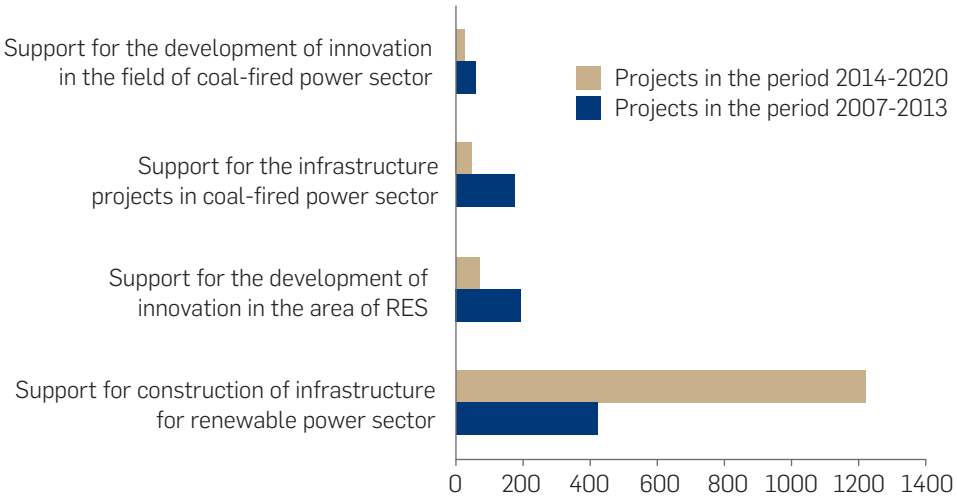
For the purpose of the analysis, the projects implemented with the support of EU funds for the period 2007-2013 and 2014-2020 were reviewed as broken down into four groups:

- support for infrastructural projects in the coal-fired power sector, including mainly retrofit of coal-fired power units, including environmental protection systems (including flue gas desulfurization and denitrification plants, dust emission reduction);
- support for development of innovation in the area of coal-fired power sector;
- support for construction of infrastructure for renewable power sector, distinguishing categories such as wind, biomass, biogas, photovoltaics, photovoltaic systems and heat pumps, hydro-power plants and power systems;
- support for the development of innovation in the area of RES.

When analyzing the structure of EU funds for coal-fired and renewable energy projects, it can be seen that after the change of the programming period not only the number and value of projects has changed, but also the structure of support per category. In 2007-2013, a total of 858 projects with the value of approximately PLN 22 billion were identified, out of which 27% (PLN 5.9 billion) was funded from EU funds. In comparison, more projects were distinguished in 2014-2020, that is 1,314 projects, the total value of which is relatively lower, amounting to over PLN 4 billion, out of which as much as 53% (PLN 2.3 billion) was funded by the EU. The discrepancy between the two periods is mainly caused by the fact that in 2014-2020 no funds were allocated to finance the construction of infrastructure in the coal-fired power sector, whereas the majority of subsidies were transferred to a fragmented number of measures in the field of renewable power sector, in particular to photovoltaics.

282 X328/2009; SA.44685(2016/X); SA.41730(2015/X); SA.47030(2016/X); SA.43907(2015/X); SA.43229 (2015/X).
283 Commission Regulation 800/2008 of August 6, 2008 declaring certain categories of aid compatible with the common market in application of Articles 87 and 88 of the Treaty (OJ EU L 214, 2008, p. 3, as amended); GBER Regulation.
284 EC Decisions: C(2009)5363) corr. and C(2013) 9240 final.

Figure 13. *Number of projects analyzed by category of support for the period 2007-2013 and 2014-2020*



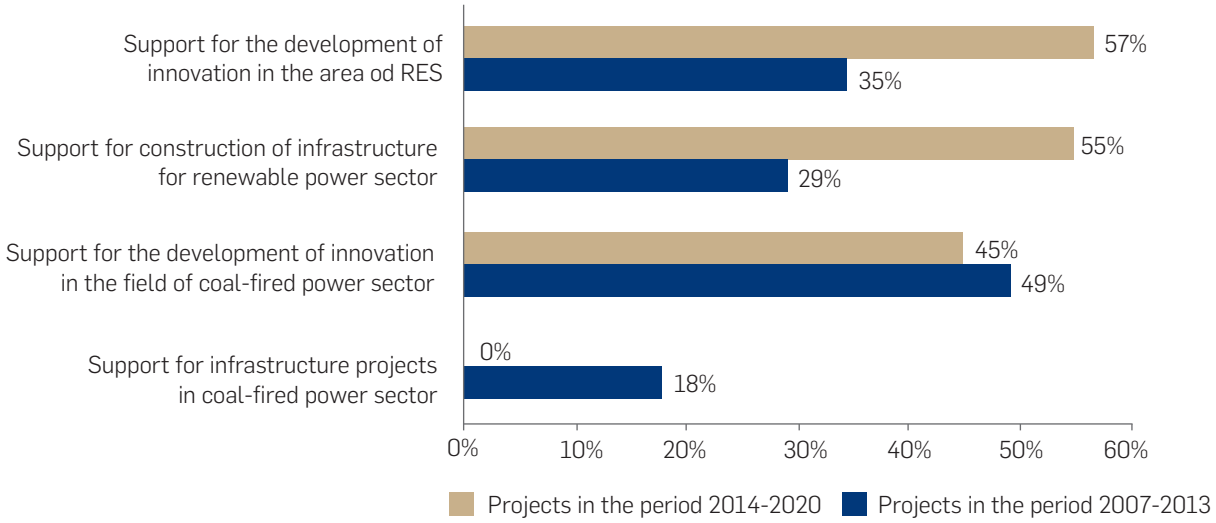
Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

The share of subsidies for coal-fired power sector has consistently decreased over the years. In the period 2007-2013, such infrastructure investment projects accounted for nearly one quarter of the total EU subsidies analyzed, while in the next period no such project was funded. A similar trend occurs in the support of innovation in the high emission area, where the share of funding was 9% and 2% in subsequent years. It is worth noting that the lower intensity of the use of EU funds to support coal-fired projects reflects not only the direction of change, but also the already started process of shifting from high emission energy sources to renewable energy. This shows the important role of EU mechanisms in stimulating energy transition in Poland.

This fact is also confirmed by the figure below, which shows that over the years the average funding for construction of infrastructure and support for innovation in the coal-fired power sector decreased by 18 percentage points and 4 percentage points with an increase in the intensity of the subsidy for RES by more than 20 percentage points. When comparing the intensity of subsidies for particular types of RES technologies, the biggest increase in the share of support in the total value of the projects was noted for power systems (37 percentage points) and biomass (31 percentage points). Overall, photovoltaic systems and heat pumps continue to be proportionally the most subsidized area where the subsidy reaches 66% in 2014-2020, while the average share of subsidies in the total value of projects for wind and hydro-power plants is the lowest in the same period.

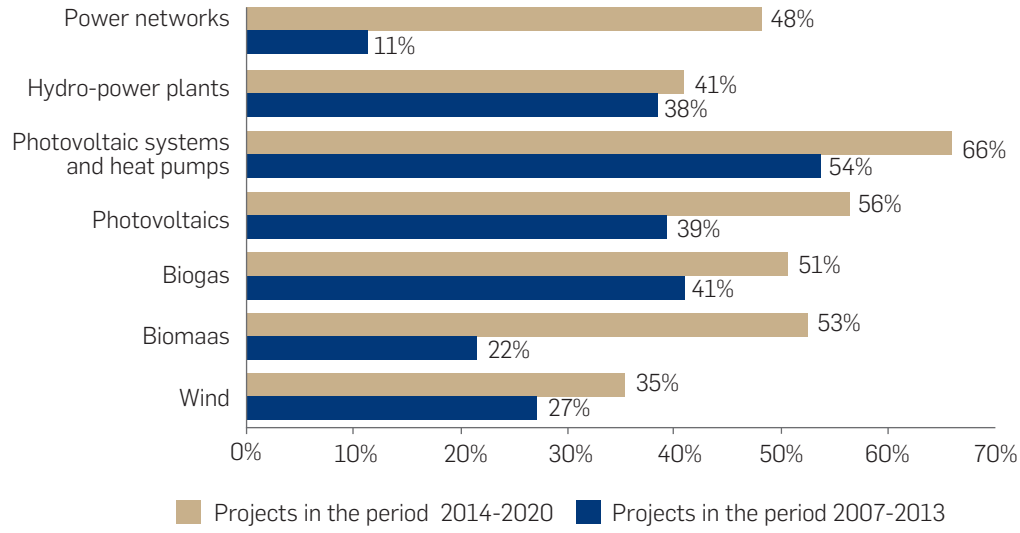
> EU mechanisms play an important role in stimulating energy transition in Poland

Figure 14. *Average percentage of subsidies from EU funds in the total value of projects by category for the period 2007-2013 and 2014-2020*



Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

Figure 15. *Average percentage of subsidies from EU funds in the total value of projects by type of RES technologies for the period 2007-2013 and 2014-2020*

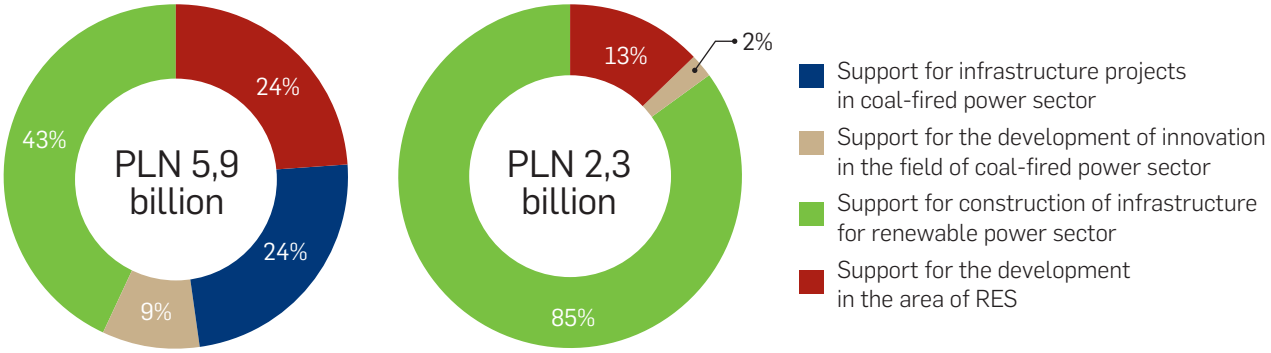


Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

As regards the number of analyzed projects intended to support the construction of infrastructure in the renewable power sector, 424 projects with a total value of PLN 8.7 billion were distinguished in the first period with an average support from EU funds of 29%. In turn, in 2014-2020, there were 1,229 projects worth PLN 3.6 billion, subsidized on average in 55%. This disparity indicates both an increase in the number of eligible applications with a lower unit value and an increase in the average subsidy level, which may affect the efficiency of their distribution. Compared to support for coal-fired power sector, the share of subsidies for RES development in Poland is increasing – in

2007-2013, 67% of the analyzed subsidies were allocated to support the construction of such infrastructure and innovation in the renewable energy sector, whereas in the next period this level increased to 98%.

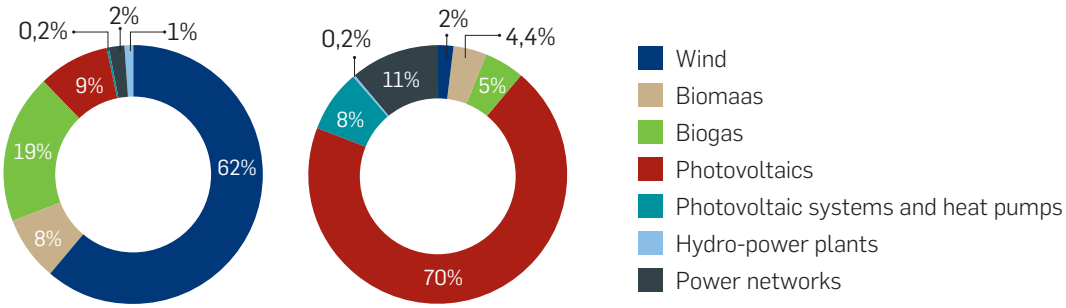
Figure 16. *Subsidy structure by category 2007-2013 (left panel) and 2014-2020 (right panel)*



Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

In the period 2007-2013, PLN 1.6 billion, i.e. 62% of the funds related to the support of infrastructure for renewable energy sector was allocated to wind energy projects, where the largest of them, with a total value of PLN 289 million and with PLN 38 million from EU funding, concerned the construction of the Karwice wind farm with a power output of 40 MW. Secondly, biogas (19%) and photovoltaic (9%) measures were subsidized. In turn, in the period 2014-2020, there is a decrease in the share of subsidies for wind energy related measures (by 60 percentage points) in favor of photovoltaics, the funding of which is estimated at 70% of the funds from the third category (i.e. approx. PLN 1.4 billion). The largest beneficiary in terms of the overall value of the project in this area is the initiative: "Eco-partners for solar energy of Małopolska" with a total value of PLN 111 million. The project assumes an installation of 3,108 photovoltaic systems with a total power output of 15.07 MW, thus absorbing approx. 62% of the project budget. In addition, 2,782 solar collectors are planned to be installed as part of parallel measures. It is worth noting that, unlike the period 2007-2013, subsidies for power systems increased by as much as 10 percentage points, while the support for biogas, biomass and hydro-power plants decreased.

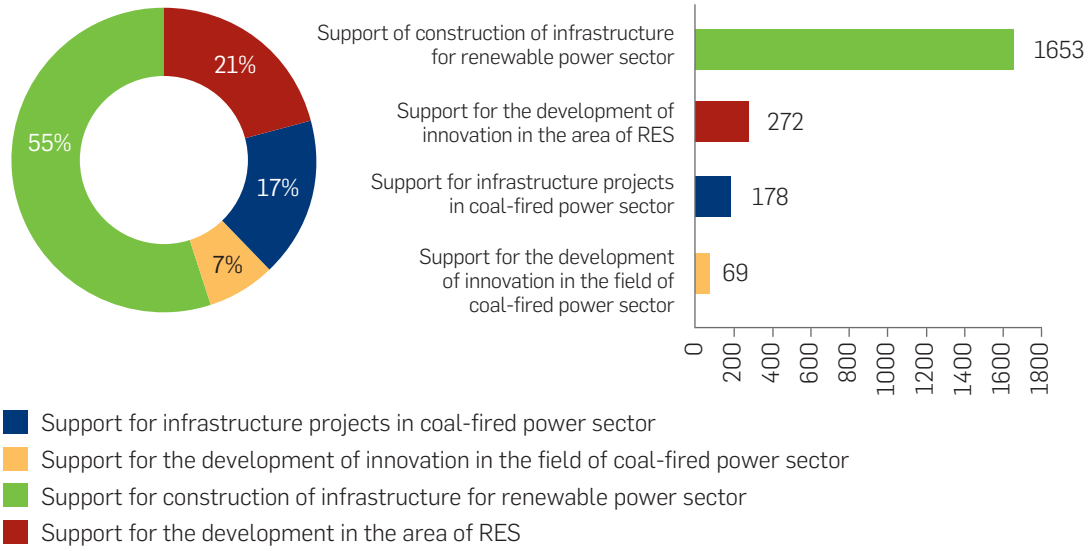
Figure 17. *Subsidy structure to support the construction of infrastructure for renewable power sector in the period 2007-2013 (left panel) and 2014-2020 (right panel)*



Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

As a result, in total, in the period 2007-2020, the largest number, i.e. as many as 1,653 projects supporting construction of infrastructure for renewable power sector (construction and connection of RES plants to the network), in turn, the least number, i.e. 69 projects were included in the scope of support for development of innovation in the field of coal-fired power sector. As a consequence, all EU funds allocated in the period 2007-2020 for the development of renewable energy in Poland can be estimated at approx. PLN 6 billion as compared to PLN 2 billion in the form of subsidies for high emission projects.

Figure 18. *Subsidy structure per category (left panel) and number of projects per category (right panel) for the period 2007-2020*



Source: *WiseEuropa own study based on data from the Ministry of Investment and Economic Development*

2.7.4 ASSESSMENT OF SUPPORT EFFECTIVENESS

In the analyzed period, the scale of use of EU funds for projects related to RES significantly exceeded the funding of coal-fired power sector. In total, the value of considered subsidies is approx. PLN 8.2 billion, out of which the support for infrastructural projects in the first category amounted to PLN 1.4 billion (17% of EU subsidies), while more than half of the subsidies (55%) in total, i.e. almost PLN 4.5 billion were allocated for the same category to support the renewable energy sector. As regards the innovation, both for high and low emission projects, these values are lower and amount to PLN 589 thousand (7% of the subsidy) for coal-fired power sector and PLN 1.7 billion for RES (21% of the subsidy) respectively.

Due to the fact that the largest percentage of support was allocated for construction of infrastructure in low-emission power sector, it is worth looking closer at the subsidy structure of this area. The analysis shows that the photovoltaics and wind power sector are the two most subsidized sub-sectors, receiving in total as much as 38% of the considered EU funds, i.e. over PLN 3 billion. Another item is biogas with 7% support, while the least aid is allocated to biomass projects (4%), power systems (3%), photovoltaic systems and heat pumps (2%) and hydro-power plants (1%).

The impact of the difference in the structure of support for investment projects in power sector in the budget perspective 2007-2013, followed by 2014-2020, is particularly noticeable. After 2014, not only were investments projects in coal-fired power sector abandoned (allowing only a small share of subsidies for innovation in this sector), but also the ratios between support for wind power and photovoltaics (in favor of the latter) were reversed. Although the direction of replacing support for fuels with support for RES was desirable, its effectiveness is questioned due to the existence of other support schemes for RES (e.g. green certificates). In the current perspective, however, the positive effect is an increase in support for the PV systems, which enabled the development of small systems (and opened the way to the development of the prosumer power sector). In the next budget perspective, such a high level of subsidies for PV systems will not be necessary due to the possibility of obtaining a market return on investment as a result of expected increases in energy prices and falling investment costs.

To sum up, the analysis of the structure of the EU funding for Poland shows that over the last decade the flow of financial support has completely changed from support to coal-fired projects towards infrastructure building and, to a lesser extent, innovation related to the renewable energy sector. As regards the RES, the greatest emphasis is consistently placed on the wind power sector and photovoltaic systems, while other technologies play a much smaller role. The extensive support for low-carbon projects and the abandonment of subsidies from high-carbon sectors demonstrate the implementation of low-carbon transition measures, which is mainly due to the tightening EU climate policy, translating into rules on the use of EU funds.

> EU funds allocated for development of the renewable energy sector in Poland in the years 2007-2020 can be estimated at approx. PLN 6 billion

2.8 AID FOR INCREASING THE LEVEL OF ENVIRONMENTAL PROTECTION IN THE POWER SECTOR

2.8.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

Poland had a number of environmental aid schemes in the power sector. The first schemes entered into force as soon as Poland became a Member of the EU and[285] were subsequently extended by another schemes notified to the EC[286].

The legal basis for the validity of the schemes was mainly the Environmental Protection Law act (hereinafter: "Environmental Protection Law")[287] and a number regulations of the Council of Ministers, the Minister of Environment and the Minister of Economy[288]. The aid was granted by NFOŚiGW and WFOŚiGW in the form of:

- subsidy:
- preferential loans granted by NFOŚiGW/WFOŚiGW;
- preferential bank loans granted, for organizational reasons, by banks selected in the tender procedure;
- partial redemption of those preferential loans and credits; and
- interest rate on bank loans negotiated by the beneficiaries with a selected bank.

The aid has been granted for new investments:

- used for the application of technologies ensuring cleaner and energy efficient production and saving of raw materials[289], by:
  - technological changes intended to reduce the demand for energy, water and raw materials, with particular emphasis on the recovery of various types of energy and reduction of the amount of generated waste,
  - application or modernization of the equipment used to eliminate or reduce impacts harmful to the environment,
  - technological changes intended to eliminate or reduce impacts harmful to the environment,
  - saving energy used in civil structures; and
- related to RES[290].

285 Horizontal aid scheme for environmental protection intended for investments in the use of technologies ensuring cleaner and energy-efficient production and saving of raw materials (PL 23/2004); horizontal aid scheme for investments in the promotion of renewable energy sources (PL 10/2004); horizontal aid scheme for investments in adaptation to the requirements of the best available techniques (PL 8/2004).

286 Horizontal aid scheme for environmental protection intended for investments in the use of clean technologies and energy-efficient production and saving of raw materials (EC decision K(2007)4676); horizontal aid scheme for investments to promote renewable energy sources (EC Decision K(2007)4291); horizontal aid scheme for investments aimed at adapting to the requirements of the best available techniques (EC Decision K(2007)3367); horizontal aid scheme for certain environmental objectives (EC Decision C(2014)4024).

287 Journal of Laws of 2019, item 1396, as amended.

288 Regulations of the Council of Ministers of April 27, 2004:
- on the detailed conditions for granting public aid for investments in the use of cleaner technologies and energy efficient production and saving of raw materials (Journal of Laws of 2004, No. 102, item 1069, as amended);
- on the detailed conditions for granting aid for investments in renewable energy sources (Journal of Laws of 2004, No. 98, item 996, as amended);
- on the detailed conditions for granting aid for investments aimed at adapting to the requirements of the best available techniques (Journal of Laws of 2004, No. 98, item 991, as amended); and

Regulation of the Minister of the Environment of July 2, 2014 on the detailed conditions for granting horizontal aid for certain environmental protection measures (Journal of Laws of 2014, item 908, as amended); Regulation of the Minister of the Environment of December 21, 2015 on the detailed conditions for granting horizontal aid for environmental protection measures (Journal of Laws of 2015, item 2250, as amended); Regulation of the Minister of Economy of January 26, 2009 on granting aid for investment projects in construction or alteration of high efficiency power generating units (Journal of Laws of 2009, No. 21, item 111, as amended).

289 EC Decisions: K(2007)4676 and C(2014)4024.

290 EC Decisions: C(2007)4291 and C(2014)4024.

By 2010[291], investments aimed at adapting to the best available techniques (BAT) were also supported in the scope of:

- technological changes used to eliminate harmful impacts and nuisances by preventing emissions to the environment;
- technological changes aimed at reducing the demand for energy, water and raw materials, with particular emphasis on the use of waste heat and reduction of the amount of generated waste;
- technological changes aimed at reducing the emissions of certain substances and energy to the level specified in the national and EU legislation and in the BAT reference documents; and
- investments in the equipment or systems reducing emissions to the environment, the application of which is necessary to meet the tightening emission standards or emission limit values characterizing the best available techniques, when the emission reductions achievable through technological changes and operational measures are not sufficient in this respect.

> Aid provided by NFOŚiGW is shifting towards repayable support

Similar mechanisms were also in place in the case of regional aid, as in the case of an aid scheme for regional public aid for certain investments in environmental[292] protection governed by the Environmental Protection Law and by the regulation of the Council of Ministers[293] which was in force between 2009 and 2013. This scheme concerned projects aimed, among others, at adapting the existing plants to the BAT requirements.

2.8.2 DOES THE SUPPORT CONSTITUTE STATE AID?

All the mechanisms taken into account in point 2.8.1 were notified to the EC, which concluded with relevant decisions that they constituted State aid compatible with the internal market.

It should be noted that in Poland there are also other mechanisms for financing investments in the power sector from national funds (e.g. implemented by NFOŚiGW) which, in the opinion of the support institutions, do not constitute State aid[294].

2.8.3 ESTIMATION OF SUPPORT VALUE

In the annual reports of NFOŚiGW, the projects financed from the Fund's own resources are included together with the projects implemented as co-funded with the participation of European funds (Infrastructure and Environment Program 2014-2020). This makes it very difficult to assess the amount of support from NFOŚiGW's own resources for specific projects in the power sector. For this reason, the data presented below should be treated as an overview, in particular responding to the question: which projects were co-funded, what was

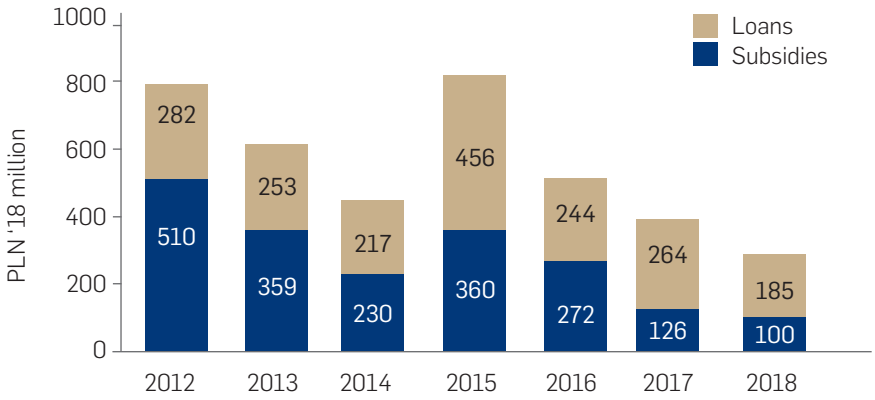
291 First, a horizontal aid scheme for investments aimed at adapting to the requirements of the best available techniques (PL 8/2004), subsequently extended by a horizontal aid program for investments aimed at adapting to the requirements of the best available techniques (EC Decision K(2007)3367).
292 Aid scheme for regional aid for certain investments in environmental protection (XR 18/2007).
293 Regulation of the Council of Ministers of December 22, 2006 on the establishment of an aid scheme in the field of regional aid for certain investments in environmental protection (Journal of Laws of 2006, No. 246, item 1795, as amended).
294 See e.g. http://nfosigw.gov.pl/o-nfosigw/aktualnosci/art,1056,oferta-nfosigw-w-kontekscie-nowych-standardow-bat-trwa-nabor-do-programu-e-kumulator.html (accessed on March 16, 2020).

the scale of total support managed by NFOŚiGW, and what was the effect of allocating these funds to generate electricity.

As reported by NFOŚiGW, support for power generating plants in the activities of the Fund covers the measures in the field of environment and climate protection. Within this area, a number of schemes were implemented, which included mainly projects related to air quality improvement, support for RES, high efficiency cogeneration and thermal upgrading of public utility buildings.

Total funding spent for the environment and climate protection program, without EU funding and without co-financing, amounted to a total of approx. PLN 3.8 billion in 2012-2018 (in 2018 prices), of which slightly more than half was allocated to subsidies and the rest to loans. At the same time, the share of subsidies fell from less than 2/3 in 2012 to 35% in 2018, with the Fund moving towards repayable support.

Figure 19. *Total amount of NFOŚiGW support from own resources (without co-financing of European projects) in the area of environment and climate protection in 2012-2018 (PLN million)*

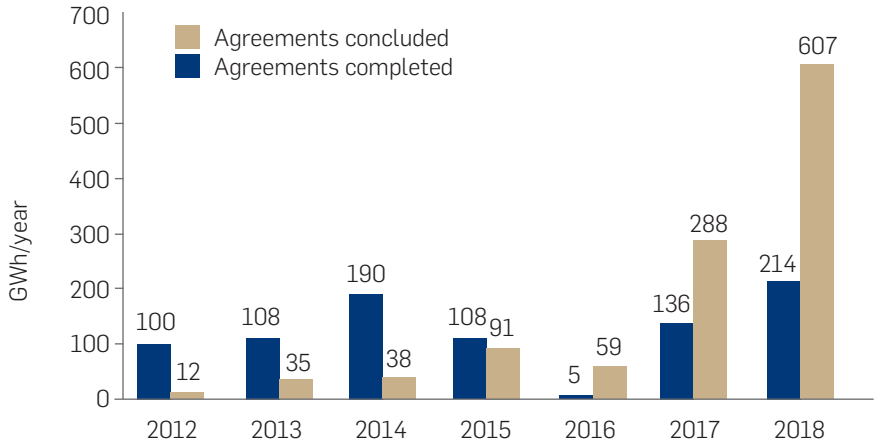


Source: *Own study based on data from annual reports on NFOŚiGW activities*

2.8.4 ASSESSMENT OF SUPPORT EFFECTIVENESS

The analysis of the annual reports of NFOŚiGW does not indicate that the projects implemented exclusively from own resources covered most of the projects related to power generation. On the contrary, the data presented in the report of NFOŚiGW for 2018 suggest that the share of own resources and co-financing is completely different in the assessment of the effects of the support, i.e. the assessment of the total increase of power and heat generation as a result of the implemented programs. In the indicated period, the plants supported by the agreements concluded with NFOŚiGW generated 213.5 thousand MWh, with only 2.5 thousand MWh, i.e. approx. 1% of the generated power came from own resources without EU co-financing. It can be assumed that the share of these measures was also negligible in previous years (compared to co-financing with European funds).

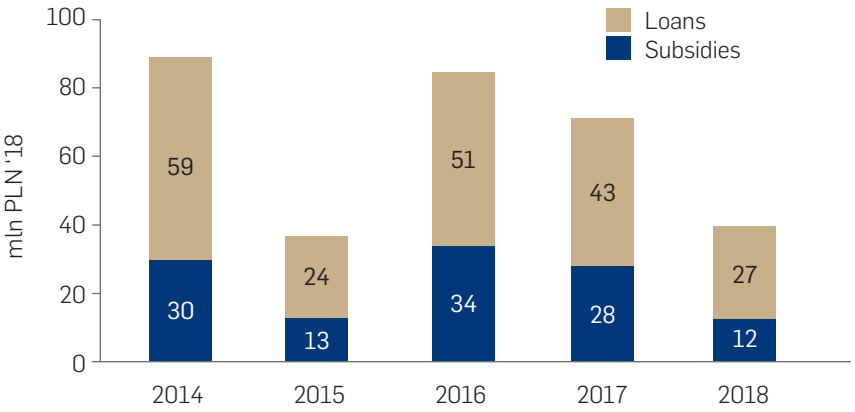
Figure 20. *Increase in power and heat generation[295] under the agreements concluded and completed as an ecological effect of NFOŚiGW support (including co-financing) in 2012-2018 (GWh/year)*



Source: *Own study based on data from annual reports on NFOŚiGW activities*

NFOŚiGW projects in the field of power generation were implemented as part of the implementation of the Fund tasks covering climate and atmosphere protection measures. These include Green Investment Scheme (GIS), under which investments were made in, among others, agricultural biogas plants (in total, almost PLN 82.5 million of subsidies and over PLN 129 million of loans in 2012-2015), combined heat and power plants and biomass-fired combined heat and power plants, as well as in the construction and alteration of power systems to connect wind energy sources. However, the schemes financed from NFOŚiGW's own resources and aimed at the development of renewable energy sources were primarily the "Prosument" and "Bocian" (Stork) schemes. In total, over PLN 110 million of subsidies were allocated to the "Prosument" scheme covering the co-financing line intended for the purchase and installation of RES micro-plants in 2014-2016 and nearly PLN 200 million of loans were granted. In the case of the "Bocian" scheme, the scale of support was smaller – in 2014-2017 it amounted in total to approx. PLN 30 million of subsidies.

Figure 21. *Amount of subsidies and loans under agreements concluded and completed under the "Prosument" scheme (PLN thousand)*



Source: *Own study based on data from annual reports on NFOŚiGW activities*

295 Due to the availability of data in the annual reports of NFOŚiGW, the information for the years 2012-2015 includes an increase in power generation and for the years 2016-2018 the total amount of power and heat.

To sum up, although the total funds allocated by NFOŚiGW to support the power sector allowed in the period 2016-2018 to generate additional over 950 GWh of power and heat per year (over 1,128 GWh per year if we add power generation in the years 2012-2015), this was mainly possible thanks to co-financing with the participation of European funds from the POIiŚ. The priority scheme "Mój Prąd" (My Electricity launched by the Fund in the third quarter of 2019 and the existing Polish-wide advisory support scheme for the public sector, housing sector and enterprises in the scope of energy efficiency and RES indicate that in the scope of power generation, the Fund intends to redirect its own resources towards prosumer power sector and not to support the professional power sector.

2.9 SUPPORT FROM BGK AND PFR

2.9.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

Polski Fundusz Rozwoju ("PFR") and Bank Gospodarstwa Krajowego ("BGK") are two out of six state development institutions within the meaning of the new Act on the system of development institutions[296]. PFR is a State-owned financial group, which invests in sustainable social and economic development of the State by offering so-called development instruments[297]. The detailed scope of PFR's operations is set out in the group's statute[298].

BGK is a state-owned bank belonging to the State Treasury. The primary objective of BGK is to support the economic policies of the Council of Ministers, government social and economic schemes, including surety and guarantee schemes, as well as local self-government and regional development scheme. The scope of operations of BGK is currently governed by the Bank Gospodarstwa Krajowego Act of 2003[299] and the statute issued by the Minister of Development in the form of a regulation[300].

Both PFR and BGK contribute to the financing of energy investments in a number of forms. One of such projects is the construction of a new 910 MW hard coal-fired power unit in Jaworzno Power Plant (hereinafter: "Jaworzno III Power Plant"). The investor in this project is the special purpose vehicle Nowe Jaworzno, operating within the Tauron power group, where the State Treasury holds the most shares (approx. 30%)[301]. The investment project is implemented by the Consortium of Rafako. PFR joined Nowe Jaworzno, and is to ultimately allocate PLN 880 million for the construction of the power plant[302].

According to the signed investment agreement, the two investment funds managed by PFR[303] are to recapitalize Nowe Jaworzno by taking over the

296 Journal of Laws of 2019, item 1572.
297 See in particular: https://pfr.pl/serwis-korporacyjny/ (accessed on November 29, 2019).
298 Appendix to the resolution of the Supervisory Board No. 63/2018 of Polski Fundusz Rozwoju S.A. of July 26, 2018.
299 Journal of Laws of 2003, No. 65, item 594 as amended.
300 Journal of Laws of 2016, item 1527.
301 See Extended consolidated quarterly report of the capital group of TAURON Polska Energia S.A. for the first quarter of 2019, May 2019, p. 29.
302 See Consolidated annual report of the capital group of TAURON Polska Energia S.A. for 2018, April 3, 2019, p. 2 and current report of Tauron No. 11/2018: https://www.tauron.pl/tauron/relacje-inwestorskie/raporty-biezace/raport-biezacy?id=7580176 (accessed on November 29, 2019).
303 Infrastructural Investment fund - Closed Capital Investment Fund for Non-public Assets and Infrastructural Investment Fund - Debt Closed Capital Investment Fund for Non-public Assets.

newly created shares in exchange for cash contributions (PLN 440 million each). In mid-2018, the President of UOKiK approved such concentration[304]. According to the last financial statements of Tauron, all the suspensive conditions required for the accession of the funds to Nowe Jaworzno have been fulfilled[305]. The share of each of the funds in the share capital of the special purpose vehicle should amount to approx. 14% as of the date of handing over the investment project for operation (planned at the beginning of 2020). Importantly, both funds are closed funds, which means that it is not possible for investors in those funds to be entities other than PFR. As of February 2019, one of the investment funds has already recapitalized Nowe Jaworzno in the amount of almost PLN 300 thousand, therefore on that date it held more than 7% of shares in the special purpose vehicle[306].

BGK was also involved in the Jaworzno III Power Plant. This took the form of granting an advance payment bank guarantee up to the amount of PLN 48 million and a good performance bank guarantee for the main contract for construction of the power unit – up to the amount of approx. PLN 126 million[307]. On the same terms and conditions, among others, PKO BP bank and PZU insurance company were also involved in the project. Three years later, BGK reduced the value of the advance payment bank guarantee (by PLN 15 million) and increased the value of the good performance bank guarantee (by PLN 2 million)[308].

Another form of involvement of BGK in energy investments is the granting of loans, as in the case of the Puławy Power Station. In July 2015 BGK, Grupa Azoty Puławy and Puławy Power Station (as a result of a subsequent merger of companies, rights and obligations of the latter in 2018 were taken over by Grupa Azoty Puławy)[309] signed an agreement on financing a new investment project of the company in Puławy – a low-emission and waste-free gas-fired power plant. The value of the agreement exceeded PLN one billion[310]. Subsequently, at the beginning of 2017, a decision was made on the change of plans and instead of the construction of the gas-fired plant, the existing coal-fired combined heat and power plant is to be retrofitted. The new unit is to replace the two existing coal-fired power units and ensure 100 MW of electric power and 300 MW of thermal power[311].

Moreover, in autumn 2014 BGK granted a term loan to Zakłady Azotowe Kędzierzyn S.A. owned by Grupa Azoty up to the amount of PLN 256 million. The company used the funds to co-finance the construction of the new combined heat and power plant[312]. In April 2015 BGK together with the consortium of banks provided financing for the implementation of the investment program included in the strategy of the company until 2020. Initially, the value of the

304 See decision DKK-115/2018.
305 See Tauron, Financial statement for the year ended on December 31, 2018 in accordance with IFRS approved by the EU, p. 84.
306 See Report of the Management Board on the operations of TAURON Polska Energia S.A. and TAURON Capital Group for the financial year 2018, p. 11.
307 See Rafako's current report to the Polish Financial Supervisory Authority No. RB 18/2014: http://www.rafako.com.pl/pub/File/raporty_biezace/2014/RB%2018_2014.pdf (Accessed on November 29, 2019).
308 See the current report to the Polish Financial Supervision Authority No. RB 57/2017, s. 2: https://www.rafako.com.pl/pub/File/raporty_biezace/2017/RB_57_2017_Zmiana_umowy_gwarancji_E003B7_Jaworzn.pdf (Accessed on November 29, 2019).
309 See https://pulawy.naszemiasto.pl/blok-weglowy-zamiast-elektrocieplowni-pulawy-dalszy-los/ar/c3-4978010 (accessed on November 29, 2019).
310 See the annual report pf BGK for 2015: https://www.bgk.pl/files/public/Pliki/O_Banku/Bank_w_liczbach/Raport_roczny/Raport_roczny_BGK_za_2015_r.pdf (accessed on March 16, 2020) p. 33.
311 See https://grupaazoty.com/pl/wydarzenia/ruszyla-budowa-nowego-bloku-energetycznego-w-grupie-azoty-pulawy.html (accessed on March 16, 2020).
312 See https://www.bgk.pl/aktualnosci/bgk-bedzie-wspolfinansowac-nowa-elektrownie-grupy-azoty-w-pulawach-819/ (accessed on November 29, 2019).

loan amounted to PLN 1.5 billion (the total for all banks in the consortium)[313], and in 2018 it was increased to PLN 3 billion[314].

BGK also supports the Enea energy group. The Bank concluded two program agreements with this company concerning the issuance of bonds up to the amount of PLN 1 billion (in May 2014[315]) and PLN 700 million (in December 2015) intended for financing investment needs[316]. The agreements are a form of cooperation under the "Polish Investments" program implemented by BGK. The appropriations covered by the first agreement were fully used before the second agreement was signed[317]. The funds from the bonds issued under those agreements were used by Enea to acquire shares in LW Bogdanka hard coal mine, to acquire the hard coal-fired and partially biomass-fired Połaniec Power Plant from a French energy company – ENGIE, as well as to finance other investments of the Enea Group[318]. In practice, the obtained funds were used by the group to finance investments in coal infrastructure. The bonds are to be redeemed in instalments by September 2027.

A similar agreement was concluded by BGK (together with Alior Bank) in 2013 with "Jastrzębie" energy company (currently: PGNiG Termika Energetyka Przemysłowa SA). This was an agreement for the bond issue program up to the amount of PLN 420 million, of which the share of BGK amounted to PLN 280 million. A significant part of these measures financed the construction of a new multi-fuel, cogeneration unit on the premises of Zofiówka Combined Heat and Power Plant with power output of approx. 100 MW. BGK acted as organizer, guarantor, emission agent, security agent, payment agent and depositary in the transaction and provides financing in the amount of approx. PLN 280 million[319].

In 2015, EDF was also supported by Polskie Inwestycje Rozwojowe (currently PFR) for the construction of the gas-fired combined heat and power plant in Toruń (currently these are PGE assets). The plant replaced the previously operating coal-fired units. The fund managed by PFR invested PLN 275 million in this project[320].

It is worth noting the recent declaration of the President of PFR, Paweł Borys, that PFR could[321] allocate several billion PLN to co-finance the construction of the Polish nuclear power plant.

2.9.2 DOES THE SUPPORT CONSTITUTE STATE AID?

In all the situations outlined above, the State entities, PFR and BGK are involved in financing investments in the power sector. Often the other party to

313 See https://www.bgk.pl/aktualnosci/bgk-bedzie-wspolfinansowac-nowa-elektrownie-grupy-azoty-w-pulawach-819/ (accessed on November 29, 2019).
314 Report of the Management Board on operations of Grupa Azoty S.A. and Grupa Azoty Capital Group for the period of 12 months ended on December 31, 2018, p. 33.
315 See Report of the Management Board on operations of Enea S.A. in 2014: https://ir.enea.pl/informacje-dla-inwestorow/zalacznik/681219 (accessed on March 16, 2020).
316 See https://www.bgk.pl/biuro-prasowe/komunikaty-prasowe-archiwum/enea-skorzystala-z-finansowania-dostarczonego-przez-bank-gospodarstwa-krajowego-przy-nabyciu-elektrowni-polaniec-2024/ (accessed on March 16, 2020).
317 See https://www.bgk.pl/aktualnosci/enea-ma-od-bgk-kolejne-700-milionow-na-swoj-rozwoj-1687/ (accessed on November 29, 2019).
318 See https://www.bgk.pl/biuro-prasowe/komunikaty-prasowe-archiwum/enea-skorzystala-z-finansowania-dostarczonego-przez-bank-gospodarstwa-krajowego-przy-nabyciu-elektrowni-polaniec-2024/ (accessed on March 16, 2020).
319 See https://www.bgk.pl/aktualnosci/archiwum/kolejne-dwie-umowy-w-ramach-programu-inwestycje-polskie-951/ (accessed on November 29, 2019).
320 See https://www.cire.pl/item,112101,1,7,8,0,265884,0,pir-zainwestuje-275-mln-zl-w-budowe-nowej-elektrocieplowni-w-toruniu.html (accessed on March 16, 2020).
321 See https://forsal.pl/artykuly/1114333,borys-pfr-moze-przeznaczyc-kilka-mld-zl-na-finansowanie-budowy-elektrowni-jadrowej.html (accessed on November 29, 2019).

the transaction is also a state-controlled company. It would therefore be appropriate to consider treating such financing of power projects as State aid – as potentially departing from market conditions.

In order to assess such cases in the case-law of the EC and CJEU, a so-called market economy investor principle (MEIP) has been developed to verify whether the principles applied in a given mechanism can be considered market-based or whether there is state interference conferring a selective advantage[322]. State aid can only constitute an economic advantage which cannot be obtained under normal market economy conditions[323].

In these cases, PFR and BGK engaged in private-law relationships with energy undertakings without using specific intervention mechanisms, but on the basis of general market instruments, such as a bank loan or a recapitalization of the company. The State does not change both the terms and conditions of the functioning of the market as such and the rules of private law liability (the economic risk as to the success of the projects in question seems to be left to the main investor)[324].

The decisive factor is whether in the aforementioned cases the conditions for the conclusion and performance of the aforementioned agreements were market-based or different from market conditions (e.g. through preferential interest rate). The essence of the market economy investor principle is to compare a possible difference between the conditions under which a state entity provides its funds to an undertaking and the conditions acceptable to an independent market operator[325]. It is impossible to evaluate these issues without having access to specific financial data and contractual provisions[326]. It is questionable in this respect that the financial involvement in the described coal investments projects was decided not by private entities but by state entities.

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The essence of the market economy investor principle is to compare a possible difference between the conditions under which a State entity provides its funds to an undertaking and the conditions acceptable to an independent market operator

2.9.3 ESTIMATION OF SUPPORT VALUE

Based on publicly available information, the cumulative value of involvement of BGK and the entire PFR group in the power sector in the years 2014-2018 can be estimated at the level of over PLN 4.5 billion. It included investments in conventional power sector, including the vast majority (approximately PLN 4 billion) in coal assets. The exception was participation in the co-financing of the construction of the gas-fired combined heat and power plant under a loan agreement between BGK and Zakłady Azotowe Kędzierzyn (Grupa Azoty) and equity involvement in the construction of the gas-fired combined heat and power plant in Toruń (EDF, currently – Grupa PGE). The identified types of support from Grupa PFR and BGK were equity investments through closed-ended investment funds (through PFR TFI Infrastructural Investment Funds), loans for investments (also through consortia with other financial sector entities), as well as assistance under the bond issuance program.

322 See in more detail in: See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., pages 154 et seq.
323 Ibidem, p. 195.
324 Ibidem, p. 203 and 232.
325 See S. Dudzik, Pomoc państwa dla przedsiębiorstw publicznych [State aid for public undertakings], op. cit., p. 230-231.
326 Such data, even if concluded between state entities, constitute a business secret or a bank secret.

Table 4. *The value of support of BGK and PFR for investments in electricity generation*

Beneficiary	Type of the investment project	Type of support	Amount of support
TAURON (Jaworzno Power Plant)	910 MW hard coal-fired power unit	Equity investment of closed funds of PFR group; guarantees of BGK	Contribution of PLN 880 million in total (2018)
EDF (Toruń Combined Heat and Power Plant)	Combined Heat and Power Plant – power output of 106 MW and thermal power of 358 MW	Equity investment Polskie Inwestycje Rozwojowe (currently PFR)	Contribution of PLN 275 million (2015) covering 50% of the project costs
Grupa Azoty Puławy (Puławy Power Plant)	Retrofit of the combined heat and power plant (hard coal-fired cogeneration unit) – 100 MW of electric power and 300 MW of thermal power	Loan granting by BGK	The value of the agreement in 2015 exceeded PLN 1 billion
Grupa Azoty (Zakłady Azotowe Kędzierzyn)	Gas-fired combined heat and power plant	Loan granting by BGK	Up to the amount of PLN 256 million (2014)
ENEA (LW Bogdanka, Połaniec Power Plant)	Purchase of shares in LW Bogdanka (hard coal producer); purchase of Połaniec Power Plant from ENGIE Energia Polska (coal-fired power units with the possibility of biomass co-firing, one biomass-fired power unit)	Agreements with BGK concerning the bond issue program	Total of PLN 1.7 billion in 2014-2015
PGNiG Termika Energetyka Przemysłowa S.A. (Zofiówka Combined Heat and Power Plant)	Construction of a new 100 MW cogeneration unit fired with coal and other solid fuels (including biomass)	Agreements with BGK for the bond issue program (together with Alior Bank)	Total of PLN 420 million, including PLN 280 million from BGK and PLN 140 million from Alior Bank (2013)

Source: *Current and annual reports and press releases of BGK, Tauron, Grupa Azoty*

2.9.4 ASSESSMENT OF SUPPORT EFFECTIVENESS

The past involvement of BGK and Grupa PFR in investments in the power sector in Poland can be assessed against the objectives of these institutions. These include supporting economic development in areas where the market is not functioning effectively, financing projects with high risk and significant importance for the market economy, and mobilizing private capital[327].

Two projects are of particular concern: involvement in the construction of a new hard coal-fired power unit in Jaworzno Power Plant and financing of Grupa Enea investments in coal assets. In the case of the first investment, the difficulties in obtaining financing and the project risk result not from the market failure but from external costs related to greenhouse gas emissions. In this case, PFR does not mobilize additional capital but replaces the private sector in the absence of private financial institutions interested in financing economically unjustified investments. The involvement of PFR in the coal project

> The involvement of PFR in the coal project involves an alternative cost in the form of limiting the available funding which could be allocated to low-carbon investments

327 See https://www.bgk.pl/o-banku/strategia-2017-2020/ (accessed on November 29, 2019).

also involves an alternative cost in the form of a reduction of available funding which could otherwise be used to support low-carbon investments. On the other hand, the involvement of BGK in the financing of Grupa Enea coal-fired investments (Bogdanka mine and Połaniec power plant) leads to further concentration of the risk of impairment of high-emission assets in companies controlled by the State Treasury due to the EU climatic regulations.

The involvement in investments in combined heat and power plants should be assessed as more effective. They are the least emission conventional technologies that work well with low-emission sources (supplementation of variable power generation from wind farms and photovoltaics). Moreover, in the short term these are key investments in the current lack of alternative technologies to meet the energy demand of industry (Grupa Azoty) and large district heating systems (Toruń).

However, it should be stressed that the need to achieve climate neutrality in the mid-age perspective, directly linked to the elimination of conventional fossil fuel technologies, should translate into a change in the strategy of Grupa PFR. The institution should primarily seek to develop zero-emission technologies and related infrastructure. Thus, the current declarations on involvement in RES projects[328] should be assessed positively, also from the perspective of meeting the long-term objectives of the functioning of BGK and Grupa PFR.

2.10 SUPPORT UNDER THE SO-CALLED ENERGY PRICES ACT

2.10.1 DESCRIPTION AND JUSTIFICATION OF SUPPORT

At the end of 2018, the Polish Parliament adopted the so-called Energy Prices Act[329], which in its original version was to freeze retail electricity prices for all final customers in Poland at the level from mid-2018. The justification to the Act was the "protection of consumers against a sudden increase in energy supply costs"[330] as a consequence of an increase in the prices of EUA allowances and coal, as well as an increasing level of competition on the national energy market.

Since then, the act has been amended four times and its wording has changed. In particular, compensation for the increase in the costs of purchasing electricity for energy-intensive (industrial) customers was included in the separate Act on the compensation scheme for energy-intensive sectors and sub-sectors (hereinafter: "the compensation schemes Act")[331]. The purpose of the latter act is to protect the largest domestic companies so that they can remain competitive in global markets. Also in the case of this regulation, the draft initiator justified the necessity to adopt, first of all, the "exceptionally strong" impact of the increasing prices of EUA allowances on energy prices in the conditions of the Polish energy mix, mainly based on high-emission coal-fired power plants[332].

328 See https://pfr.pl/odnawialne-zrodla-energii.html (accessed on November 29, 2019).
329 Act amending the Excise Duty Act and certain other acts (Journal of Laws of 2018, item 2538, as amended).
330 See explanatory statement to the Act amending the Excise Duty Act and certain other acts (print No. 3112), p. 1.
331 Journal of Laws of 2019, item 1532.
332 See justification to the draft act on compensation schemes (print No. 3572), p. 2.

The Energy Prices Act in its essential part begun to be implemented only after subsequent amendments. In principle, this document refers to the latest versions of regulations compensating national customers for the increase in electricity prices. In its current wording, the Energy Prices Act applies only to 2019. However, it is conceivable that the price freeze may be prolonged for at least the following calendar year[333].

The Energy Prices Act interfered with the retail electricity market in Poland, in particular by:

- reducing the rate of excise duty on electricity from PLN 20 to 5 per MWh (i.e. de facto the minimum value required under the EU law)[334];
- reduction of the transitional fee rates for all groups of customers, e.g. for typical households from PLN 6,50 to PLN 0,33 net per month[335] (for more details on the reasons for this reduction, see point 2.2.1 above); and
- introduction of the obligation for electricity suppliers to apply prices and fee rates in 2019:
- applied on December 31, 2018 – with respect to household customers, for whom the tariff is approved by the President of ERO, and
- not higher than applicable on June 30, 2018 – with respect to customers in other tariff groups[336].

> The Energy Prices Act was supposed to freeze retail electricity prices for all customers in Poland

The obligation to sell energy at 2018 prices raises the most controversial issues. Following the amendments made, the scope of this obligation is different for each half of 2019, and thus:

- electricity sold to all domestic customers, from households to the largest industrial plants, is included in the obligation for the first six months;
- in the second half of the year, the obligation covers the energy sold to customers who are included in the catalog added to the Act, including:
  - households,
  - micro – and small entrepreneurs,
  - hospitals, and
  - various types of state and self-government entities[337]

– the obligation in question therefore no longer applies to energy sold to medium or larger enterprises.

Due to the increase in wholesale prices and the freezing of retail electricity prices, in 2019, we are therefore faced with a situation electricity suppliers may be obliged by law to sell electricity to customers at a price lower than the purchase costs. In order to cover the difference thus created, the Energy Prices Act creates a special compensation scheme specifically granted to suppliers, which also differs structurally according to the six-month period:

333 See the reply of the Ministry of Energy to the parliamentary interrogation: http://orka2.sejm.gov.pl/INT8.nsf/klucz/ATTBGMHT4/$FILE/i33635-o1.pdf (accessed on November 29, 2019).
334 See Article 1 of the Energy Prices Act and p. 2 of the justification to the draft Act.
335 See Article 2 of the Energy Prices Act.
336 See, respectively, Article 5(1) of the Energy Prices Act,
337 See Article 5(1a) of the Energy Prices Act.

- for the first six months of 2019, a supplier is entitled to reimbursement of the "price difference amount"[338];
- for the second six months, a supplier may receive "financial compensation"[339].

In addition, the Energy Prices Act introduced the possibility to apply for:

- covering the aforementioned price difference amount by (in practice, the biggest) final customers purchasing electricity directly on the power exchange in relation to electricity consumed in the first half of 2019[340]; and
- financial support – in the case of final customers not covered by the aforementioned newly added catalog of customers, to whom the obligation to sell energy at 2018 prices applies and who are not at the same time industrial customers (i.e. in practice medium and large undertakings) - in relation to electricity consumed in the second half of 2019[341].

Support under the Energy Prices Act cannot be combined with aid that can be obtained under the Compensation Scheme Act[342].

None of the support instruments provided for in the Energy Prices Act (price difference amount, financial compensation, financial support – hereinafter jointly referred to as: "compensation") is not paid automatically, but at the request of the undertaking concerned[343]. All compensation is paid by the state owned Zarządca Rozliczeń responsible also for settlements concerning the long term contracts (KDT), RES and, in the future, the capacity market. The funds for the payment of the compensation come from a specifically created state fund for the payment of the price difference[344]. The fund is at the disposal of the minister competent for energy, managed by Zarządca Rozliczeń, and its banking services are operated by BGK. The revenues of the Price Difference Payment Fund are mainly funds from the sale of the EUA pool available to Poland, which were not allocated free of charge to the national power sector in the years 2013-2017 and were transferred to auctions in 2019[345]. The detailed rules for calculating the compensation are governed by the Regulation of the Minister of Energy[346].

Compensation on request is also granted under the Compensation Scheme Act[347]. In this case, the authority granting the aid is the President of ERO, and the funds are paid by BGK[348]. The compensation is covered by another state special-purpose fund, the Indirect Emission Compensation Fund, which is at the disposal of the minister competent for the economy[349]. The revenue of that fund is also, first and foremost, the revenue from the sale of EUA allowances[350].

338 See Article 7(1) of the Energy Prices Act.
339 See Article 7(1b) of the Energy Prices Act.
340 See Article 7(1) point 2 of the Energy Prices Act.
341 See Article 7(4b)-(4d) of the Energy Prices Act.
342 See Article 7(7)-(9) of the Energy Prices Act in particular.
343 See Article 7(1) and (4a), and Article 8(5) of that act.
344 See Articles 11 and 13 of the Energy Prices Act.
345 Specifically, 80% of revenues from the sale of 55.8 million allowances are to be assigned to the fund. See Article 12 of the Energy Prices Act.
346 Regulation on the method of calculating the amount of the price difference and financial compensation and the method of determining the reference prices (Journal of Laws of 2019, item 1369).
347 See Article 10 section 1 of the Compensation Scheme Act.
348 See, respectively, Article 11 section 3 and 6 of the Compensation Scheme Act.
349 See Article 21 of the Compensation Scheme Act.
350 See Article 21 of the Compensation Scheme Act.

2.10.2 DOES THE SUPPORT CONSTITUTE STATE AID?

In general terms, both the Energy Prices Act and the Compensation Scheme Act provide for subsidies to national customers for the purchase of electricity.

It is clear that all the support granted to industrial customers under the provisions of the new Compensation Scheme Act constitutes State aid. This already defines the subject of the regulation[351] itself and this is clearly confirmed by the EC decision approving the aid in question as compatible with the internal market[352]. Such aid is permissible because of the risk of "emission leakage" outside the EU and the possibility of granting it is expressly provided for in the EU ETS Directive[353]. Nor does the reduction of excise duties and the transitional fee raise any major doubts as regards State aid[354].

However, the shape of the compensation scheme under the Energy Prices Act is highly controversial. Initially, when it was intended to cover all domestic customers on a uniform basis, the Ministry of Energy argued that the mechanism adopted did not constitute State aid to any economic entity, in particular because it did not fulfill the selectivity criterion[355]. Subsequently, following several months of discussions with the EC and a change in the form of the act, the Ministry took the view that the funding to medium-sized and large enterprises constituted State aid in the form of de minimis aid, whereas the financial compensation mechanism fell within the limits of the service of general economic interest (SGEI) referred to in Article 106(2) of TFEU[356].

Both legal structures constitute exceptions to the general principles of the admissibility of state support for undertakings. De minimis aid is a support which, due to its limited scale (the maximum threshold for such aid is, in principle, EUR 200 thousand per year), does not threaten to distort competition in the EU internal market[357]. De minimis aid is exempted from the obligation to notify the EC.

As regards the second of those exceptions, it is common ground that operations of energy undertakings may constitute an SGEI provision within the meaning of the TFEU[358]. This is, moreover, expressly permitted by EU Directive 2009/72 concerning common rules for the internal market in electricity (hereinafter: "IEM Directive")[359]. Article 3 (2) of that directive provides that an SGEI imposed by the state on an energy undertaking may also refer to price of supplies. However, under that provision, all SGEIs in the energy sector should be clearly defined, transparent, nondiscriminatory, verifiable and should guarantee equality of access for electricity undertakings of the Community to national consumers.

It is clear from the case-law of the European Union courts that an SGEI may be entrusted to all undertakings operating on a given market[360]. Further-

351 See Article 1 of the Compensation Scheme Act.
352 C(2019) 6371 final.
353 See Article 10a(6) of the ETS Directive. The detailed conditions for the eligibility of such aid are laid down in the EC guidelines on certain State aid measures in the context of the scheme for greenhouse gas emission allowance trading after 2012 (OJ EU C 158 of 2012, p. 4).
354 As regards the excise, see: M. Stoczkiewicz, Draft act amending the Excise Duty Act and amending certain other acts in light of State aid: https://www.linkedin.com/pulse/projekt-ustawy-o-zmianie-podatku-akcyzowym-oraz-ustaw-stoczkiewicz/ (accessed on March 16, 2020).
355 See https://www.gov.pl/web/energia/ministerstwo-energii-przygotowuje-rozporzadzenia-do-ustawy-ws-cen-pradu (accessed on November 29, 2019).
356 See https://www.gov.pl/web/energia/dialog-z-komisja-europejska-w-sprawie-cen-energii-elektrycznej-w-2019-trwa-pozytywne-zakonczenie-coraz-blizej (accessed on November 29, 2019).
357 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., page 359.
358 Ibidem, p. 211 and 225.
359 OJ EU L 211 of 2009, page 55, as amended.
360 Ibidem, p. 212.

more, in view of the general wording of Article 106 section 2 of TFEU, it is assumed that the Member States have a wide discretion as regards the definition of an SGEI[361]. On the other hand, however, it should be remembered that the SGEI formula constitutes an exception to the principle that state intervention in the energy market, which entails a potential advantage for its participants, constitutes State aid. As in the case of State aid, it is for the Commission to assess the compatibility of SGEIs implemented by Member States with EU competition law[362].

In practice, the line between State aid and SGEIs was set out in the judgment of CJEU in 2003 in the Altmark Trans case[363]. For the purposes of this document, the judgment in the Altmark case can be summarized as that the advantage does not constitute compensation which does not exceed the minimum costs borne by an undertaking which are necessary for the provision of SGEI. If the compensation granted by the state exceeds those costs, there is State aid[364]. However, the absence of benefits for an undertaking in connection with the operation of an SGEI is an exception and not a rule[365]. In the context of the energy market, it is important that the distinction laid down in the judgment in the Altmark case is also intended to prevent indirect aid, in the form of so-called cross-subsidization (i.e. where compensation for a supplier simultaneously involves an advantage for the energy generation segment within the same capital group), which is by definition incompatible with the internal market of the EU[366].

In its current wording, the Energy Prices Act deals only with the issue of State aid for medium-sized and large enterprises in respect of energy consumed in the second half of 2019. The Act explicitly provides that this funding constitutes de minimis aid within the meaning of the relevant EU law[367]. Thus, if a potential funding beneficiary has recently benefited from other such aid, it may not be entitled to the compensation in question or may receive it in a limited extent.

On the other hand, the Energy Prices Act is silent on State aid in relation to other market participants, i.e. both in terms of subsidizing energy consumption to other groups of customers (both the smaller, subject to the 2018 obligation to apply prices, or the biggest, through the possibility to reimburse the price difference) and in the case of the mechanism of the price difference amount paid to electricity suppliers[368]. The revised formula of the Energy Prices Act treats the subsidization of the costs of purchasing electricity to customers subject to the 2018 price obligation and the corresponding financial compensation to suppliers as an SGEI[369].

However, it should be stressed that the financial compensation mechanism applies to only the second half of 2019. Therefore, from the point of view of the

> The Energy Prices Act makes no reference to the legality of the compensation scheme introduced for the first half of 2019

361 Ibidem, p. 230.
362 See Article 106 section 3 of TFEU.
363 C-280/00, op. cit.
364 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., page 227.
365 Ibidem, p. 229. See also in more detail in: M. Stoczkiewicz, Przedsiębiorstwo energetyczne jako przedsiębiorstwo świadczące usługi w ogólnym interesie gospodarczym a pomoc państwa [An energy undertaking as an undertaking providing services in the general economic interest in light of State aid] (in:) Przegląd Ustawodawstwa Gospodarczego, No. 2 and 3/2010.
366 Ibidem, p. 229. Cross-subsidization is prohibited under the EU IEM Directive.
367 See Article 7(4d) of the Energy Prices Act.
368 However, the Act reserves that all forms of compensation provided for therein do not constitute grants, subsidies or other additional payments of similar nature within the meaning of the Value Added Tax Act (Journal of Laws of 2018, item 2174, as amended). See Article 8 section 11 of the Energy Prices Act.
369 See the justification to the MEP draft act amending the Act amending the excise duty act and certain other acts, the energy efficiency act and the Act on biocomponents and liquid biofuels (print No. 3498), p. 4.

requirements of State aid law, the Energy Prices Act does not refer at all to the legality of the compensation scheme introduced for the first half of 2019, also for all market participants (both suppliers and all customer groups).

The final version of the Energy Prices Act was the subject of an opinion by the Polish parliament's Bureau of Research (BAS)[370] which reviewed, in particular, the compatibility of the Act with EU State aid law (hereinafter: "Opinion"). This Opinion confirms the doubts expressed by energy market experts, stating that regulation "undoubtedly interferes with the functioning of the internal market in electricity"[371]. It goes on to state that there is no doubt that the funding provided for therein constitutes State aid, in the form of de minimis aid[372].

Furthermore, the Opinion states that the financial compensation to electricity suppliers "must be assessed for compatibility with Article 107 section 1 of TFEU (...)" and that, therefore, "as a general rule, it should be notified to the Commission under Article 108 section 3 of TFEU", i.e. as a mechanism constituting, at least potentially, State aid, and that "the proposed aid scheme is not exempted (...) from the obligation to notify the Commission"[373]. ClientEarth presented a similar view in 2018[374]. The Opinion concludes that "in so far as the law provides for the granting of State aid in the form of compensation for the provision of an SGEI, the draft act may be regarded as a project providing for the granting of State aid within the meaning of EU law"[375].

Despite such doubts, none of the mechanisms provided for in the Energy Prices Act was officially notified to the EC, nor followed a formal investigation procedure, nor, all the more, approved by the relevant Commission Decision. It should be noted that in the past, under the formal assessment procedure, the Commission has already challenged the explanations of the Polish authorities that the measure constitutes an SGEI. This was the case for long-term contracts[376] which were ultimately considered to be State aid within the meaning of Article 107 section 1 of TFEU, in addition incompatible with the internal market. This is particularly important in view of the fact that the above considerations relate to the new form of the Act relating to the second half of 2019, whereas the scope of the obligation to sell electricity at 2018 prices combined with the mechanism for payment of the price difference amount did not, at first sight, meet the conditions of clarity and transparency of the SGEIs required under the IEM Directive.

Broader considerations on the legality of support for consumers are outside the scope of this document. The explanatory statement to the draft amendment to the act, which introduced the current wording, briefly concluded that the amendments provided for in the act ensure that the rules are compatible with EU law[377]. At this point, however, it should be considered how the compensation mechanism introduced by the Energy Price Act affects the power sector and, more broadly, the energy transition in Poland as such.

> None of the mechanisms provided for in the Energy Prices Act has been officially notified to the EC

370 Warsaw, June 10, 2019, BAS-WAPM-1198/19.
371 See page 12 of the Opinion.
372 See pages 13 to 14 and 16 of the Opinion.
373 See page 14 of the Opinion.
374 See M. Stoczkiewicz, Projekt ustawy o zmianie ustawy o podatku akcyzowym [Draft act amending the Excise Duty Act], op. cit.
375 See page 16 of the Opinion.
376 See M. Stoczkiewicz, Pomoc państwa dla przedsiębiorstw energetycznych [State aid for energy undertakings], op. cit., page 214.
377 Ibidem, p. 2 and 14.

The leading think tank for energy, Forum Energii, criticized the Energy Price Act, in particular because it may lead to the maintenance or even increase of energy demand and because instead of investing in emission reduction it supports the consumption of high-emission electricity[378].

These allegations are important from the point of view of the possibility of indirect aid to the electricity generation segment, as indicated above, by artificially maintaining demand for the goods it sells. Therefore, the Energy Prices Act may also indirectly support high-emission generating assets operated by so-called incumbent undertakings: in practice, under Polish conditions, additional demand for electricity is covered by the least cost-effective and environmentally efficient existing hard coal-fired power units operated by state-owned power companies operating under actual oligopoly conditions. Such state intervention may weaken price signals for investments in new, low emission generation sources, especially those installed by final customers. Nor should it be forgotten that the funds of the Price Difference Payment Fund come mainly from unused funds from the EU ETS, which were intended to finance the modernization of the national electricity sector and not to contribute to maintaining its current structure.

> The Act may weaken price signals for investments in new, less emission generating sources, especially in final customers

The state intervention under the Energy Prices Act therefore raises wider doubts as to the compatibility with EU competition law and, all the more, should be formally notified to the EC in order to obtain legal certainty as to the admissibility of the regulatory arrangements provided for therein. Despite the explanations provided above by the Polish authorities, as of today it has not been officially confirmed that the Act complies with EU law. In practice, it is possible to imagine that, as a result of informal negotiations, the EC has "turned a blind eye" to the shape and scope of regulation for the first half of 2019, in exchange for its revision for the second half of the year (exemption from the Industrial Consumers Act, de minimis aid to medium and large enterprises, attempt to base the compensation mechanism for the rest of the market on the SGEI mechanism).

It is also regrettable that there is a bad legislative practice in the area of the Energy Prices Act and its subsequent amendments. All the drafts concerned were parliamentary and not government submissions, and were therefore not the subject of any public consultation.

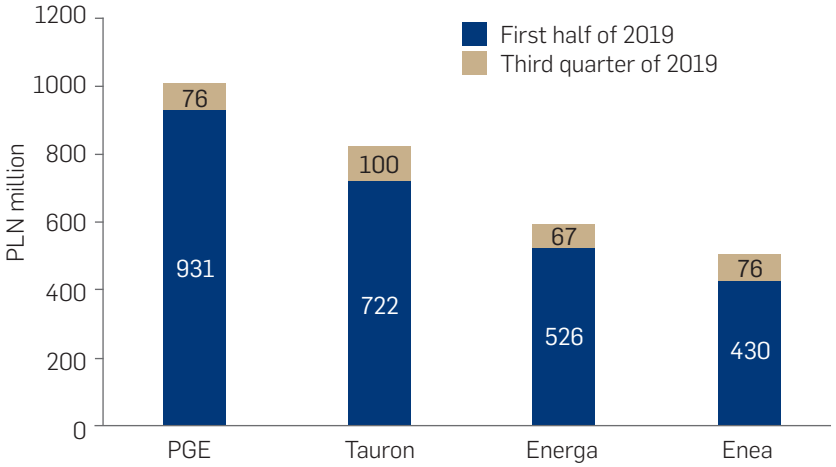
2.10.3 ESTIMATION OF THE SUPPORT VALUE

According to the Act, the revenues of the Price Difference Payment Fund include 80% of the funds obtained from the sale of the 55,8 million emission allowances pool under the EU ETS system. With market prices of EUA allowances quoted this year, revenues from sales of the entire pool will amount to approx. PLN 6 billion. When comparing this value with the declarations of the management of the former Ministry of Energy, the total revenue of the Fund in this respect can be estimated at about PLN 4.2-4.8 billion in 2019. However, this amount will also depend on whether the Minister competent for energy decides to recapitalize the Fund in any other way provided for by the Act, e.g. by means of grants or receipts from

378 See J. Maćkowiak-Pandera, J. Rączka, Dlaczego ustawa prądowa może wywołać więcej szkody niż pożytku [Why the Energy Prices Act may cause more damage than benefit], Forum Energii 2019, p. 6-7.

other titles (as of the end of November 2019, however, such a decision has not been taken).

Figure 22. *Revenues of the largest power companies from compensation mechanisms provided for in the Energy Prices Act in the first three quarters of 2019*



Source: *Own study based on interim reports of power companies*

The information contained in the interim reports of the largest power groups (PGE, Tauron, Enea and Energa) indicates that the total funds obtained as part of the mechanisms provided for in the Energy Prices Act for the first three quarters of 2019 amount in total to almost PLN 3 billion (of which 1 billion is attributable to PGE S.A. Group). However, the vast majority of these measures cover the first six months, i.e. the period prior to the amendment of the Act. This is problematic as the form of the Act for this period does not reflect the requirements of EU law (see further in point 2.10.2 above).

2.10.4 ASSESSMENT OF THE SUPPORT EFFECTIVENESS

The solutions introduced by the Energy Prices Act are characterized by extremely low efficiency both from the perspective of support for the transformation of the Polish power sector and protection of sensitive consumers.

The freezing of energy prices financed from revenues from the sale of emission allowances weakens key instruments of modernization of the Polish power sector. Firstly, price signals that encourage households and companies to invest efficiently from the point of view of the entire power system in improving energy efficiency and generation in distributed plants are eliminated. Secondly, by blocking price competition in the market and introducing additional, complex operating rules in the sector, the Energy Prices Act creates new barriers to the emergence of new entities and the development of innovative business models, thus weakening competition in the sector. This is particularly clear for entities active in the optimization of electricity sales, as the price freeze weakens efficiency promoting incentives for both electricity sellers and customers.

Designation of the sale of EU ETS emission allowances as a source of financing of the statutory price freeze mechanism means that these measures

may not be directed to support investment projects permanently reducing emissions and improving energy efficiency of the Polish economy. This is important in so far as it is the revenues from the sale of allowances that constitute the largest potential source of direct financing by the State of investment projects aimed at low-carbon energy transformation.

Inefficiency of the support under the Energy Prices Act also applies to its protective measures for the most sensitive consumers. The price freeze covers all households without distinction as to their material situation or actual exposure to fluctuations in the costs of meeting energy needs. This also applies to enterprises – the support is granted regardless of their energy intensity and the most sensitive energy-intensive enterprises are excluded from the operation of the system and are covered by a dedicated support scheme.

An alternative way to address these problems would be to redirect funds to finance the freeze of energy prices to comprehensive schemes supporting long-term investments in energy efficiency or dispersed energy sources targeting the most vulnerable groups of consumers.

3 CASE STUDY: SUPPORT FOR THE BEŁCHATÓW POWER PLANT

3.1 SUPPORT SOURCES FOR THE BEŁCHATÓW POWER PLANT

The Bełchatów Power Plant is the largest coal-fired power plant in Poland and Europe, and the largest lignite-fired power plant in the world. From the beginning of operation until now, the plant emitted about billion tons of CO_2 to the atmosphere, which is the equivalent of 3 years of CO_2 emissions in Poland. This results in Bełchatów being the largest single greenhouse gas emitter in Europe. It is also the largest plant having impact on the climate in Poland[379].

The Bełchatów Power Plant has used a number of support mechanisms described in this publication, in particular:

- support under the EU ETS (free allocation of allowances in consideration of modernization investment projects);
- capacity market;
- subsidies from EU and national funds; and
- green certificates for co-firing.

379 Data from ClientEarth: https://www.pl.clientearth.org/clientearth-pozywa-elektrownie-belchatow-za-przyczynianie-sie-do-kryzysu-klimatycznego/ (accessed on November 29, 2019).

The only important public aid instrument not involving the Bełchatów Power Plant is the compensation for the termination of long-term contracts. This is due to the expiry of the contract between the system operator and the power plant at the end of 2005. In other words, the Bełchatów Power Plant was fully supported as part of the long-term contracts before their termination. Moreover, the power units of the Bełchatów Power Plant are not part of the Cold Contingency Reserve, however, like other system units, they benefit from the operation of the Operational Capacity Reserve mechanism.

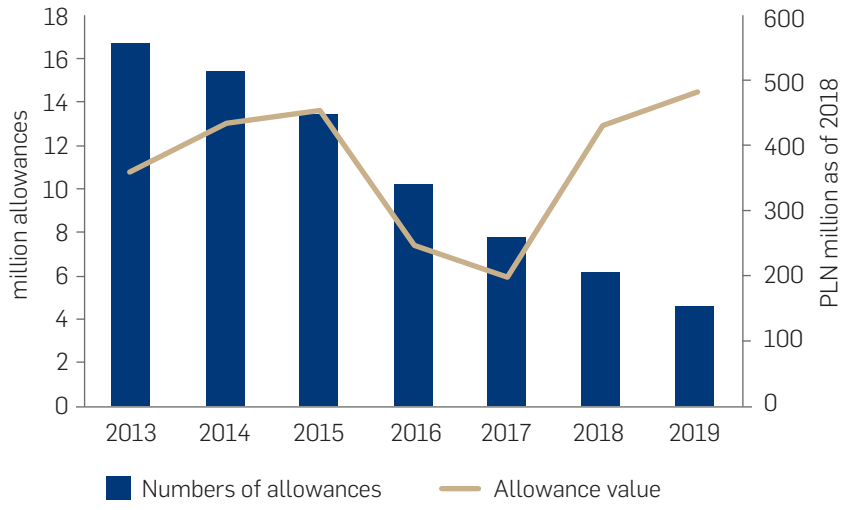
> In 2013-2018 the Bełchatów Power Plant received free of charge 70 million EUA allowances worth PLN 2.1 billion

3.2 ESTIMATION OF THE VALUE OF PUBLIC SUBSIDIES

3.2.1 SUPPORT UNDER THE EU ETS

Between 2013 and 2018, the Bełchatów Power Plant received 70 million EUA allowances free of charge with a market value of PLN 2.1 billion as of 2018. This represented the maximum allocation of derogation allowances. Taking into account the expected level of allocation of allowances for 2019, the power plant will be able to count on 74 million allowances in total with the value of approx. PLN 2.6 billion as of 2018. In total, the Bełchatów Power Plant obtained about 1/4 of the total free allocation of the derogation.

Figure 23. *Number of emission allowances granted to the plants generating electricity for the Bełchatów Power Plant in the years 2015-2018*



Source: *Study of WiseEuropa based on information from the Ministry of Environment*

3.2.2 CAPACITY MARKET

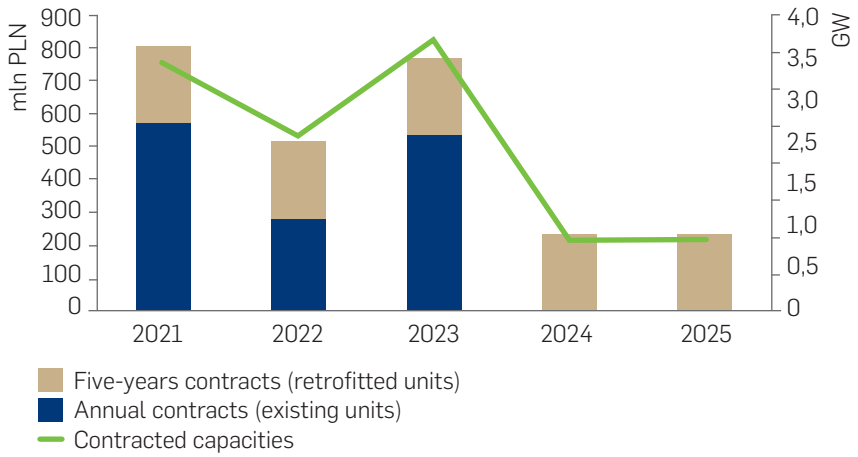
The auction results published by the President of ERO as part of the capacity market for the years 2021-2023 do not contain detailed information on which power units won the auction. Only the codes of individual units according to the capacity provider and the size of the capacity obligation are available. At the same time, due to the correction availability factors, the capacity

obligation value is not equal to the installed capacity of individual power units. This makes it difficult to clearly determine the revenues which the Bełchatów Power Plant will earn from the capacity market. Nevertheless, on the basis of the list of generating assets of Grupa PGE and information of the President of ERO, it can be stated that both the new Power Unit B14 and most of the remaining Power Units B2-12 with the power output of 370-390 MW will receive support from the capacity market.

For the purpose of estimating the amount of support, we take into account only the units submitted for auction by PGE GiEK. This includes the power unit B14 and nine power units with the notified capacity obligation in the range of 315,333 MW. Total currently contracted support within the capacity market for the years 2021-2025 for the aforementioned power units will exceed PLN 2.5 billion, and this amount will probably increase after the auction is settled for 2024, which is planned in December 2019. In 2021, the Bełchatów Power Plant will receive more than PLN 800 million in return for providing more than 3.3 GW of capacity to the power system. In 2022, this value will exceed PLN 500 million for almost 2.4 GW, and in 2023 it will amount to approx. PLN 770 million for approx. 3.7 GW. Three retrofitted 978 MW power units, which were awarded a five-year contract, will be able to count on PLN 235 million in 2024-2025.

> As a result of the first three auctions of the capacity market, the Bełchatów Power Plant may count on the aid in the amount of approx. PLN 2.3 billion

Figure 24. *Estimated revenues from the capacity market obtained by the power units of the Bełchatów Power Plant within the contracted capacity for the years 2021-2025*



Source: *Own study based on the information of the President of ERO*

3.2.3 SUBSIDIES FROM EU AND NATIONAL FUNDS

Between 2010 and 2014, two contracts were signed for projects in the Bełchatów Power Plant co-financed by WFOŚiGW in Łódź. The first one was the co-financing agreement in the form of a loan covering the retrofit of the flue gas desulfurization plant of Power Units No. 5 and 6 – its value was PLN 49 million. The second was the construction of the organic acid dosing system for the flue gas desulfurization plant in the power units B2-B12 – here the amount of the loan granted on preferential terms amounted to PLN 7.92 million. The first project was implemented in 2016 and the second one in 2013.

As part of the Operational Program Infrastructure and Environment, in 2010, an agreement was signed with NFOŚiGW for co-financing of the construction of the flue gas desulfurization plant for the power units B1 (decommissioned at the end of May 2019) and B2. The value of co-financing amounted to PLN 20 million and the project was completed as scheduled in 2012. In 2014 PGE GiEK concluded an agreement with NFOŚiGW for co-financing in the form of a subsidy for the retrofit project of the flue gas desulfurization plant for the power units B5 and B6. The funds allocated to this project amounted to PLN 20 million (approximately 14% of the total project costs) and came from the Norwegian Financial Mechanism. They were to be used to reduce sulfur dioxide emissions to the level required by the IED Directive (not higher than 200 mg/m3), as well as to reduce the emission of dust, hydrogen chloride, hydrogen fluoride and heavy metals.

3.2.4 BIOMASS CO-FIRING

In 2009-2012, the Bełchatów Power Plant benefited from the system of green certificates by co-firing biomass with lignite. According to reports of the PGE Capital Group, electricity generation from co-firing was started in September 2009 in the power units B1-B4. The end of co-firing in the Bełchatów Power Plant took place in 2013, which translated into a decrease of total biomass consumption within the PGE Group by approx. 300 thousand tons. Therefore, we estimate that during the peak period of co-firing (2010-2012) the Bełchatów Power Plant generated approx. 1% of energy (0.3-0.35 TWh) from biomass, which translated into obtaining green certificates with the value of PLN 80-100 million per year.

3.2.5 CCS DEMONSTRATION PLANT

Since 2009, the construction works of the carbon capture and storage plant (CCS) with an estimated cost of around EUR 600 million, has been carried out in Bełchatów. This design assumed reduction of CO_2 emission from the new Power Unit (B14) by approx. 1/3 (reduction by approx. 1.92 million tons per year). Although the project received EUR 180 million of EU funding under the European Energy Plan for Recovery (EEPR) in 2010, it was not finally implemented. The reason for abandonment was a finding that the CCS project in Bełchatów was economically unprofitable, inter alia as a result of a failure to reach the necessary level of public funding: despite receiving EEPR funds, EUR 340 million of funding from the EU NER 300 program and the national support mechanism was refused.

3.3 IMPACT OF SUBSIDIES ON THE OPERATION OF THE POWER PLANT AND ENVIRONMENTAL EFFECTS OF SUPPORT

In accordance with the National Investment Plan, PGE GiEK intended to implement thirteen investment projects in the Bełchatów Power Plant, of which twelve were to concern retrofit of the existing power units B1-B12 (classified as B type investment projects – retrofit of infrastructure under Article 10c of the ETS Directive, and one – construction of a new, high-efficiency lignite-fired

power unit B14 with power output of 858 MW (classified as a type A – infrastructure retrofit).

Finally, in the case of the power units B1 and B2, it was decided to suspend the investment project due to the economic unprofitability, but the possibility of resuming their implementation in 2016 was assumed, in the case of development of new technical assumptions. However, since January 2016 the power unit B1 has been operated only as a peak-load and back-up unit and was finally decommissioned by the end of May 2019. However, in the years 2016-2017, and then after 2018, the retrofit of the power unit B2 was carried out, assuming the possibility of extending its period of use even until 2034 and adaptation to the environmental requirements resulting from the so-called BAT conclusions.

In the case of the power units B3-B6, KPI tasks were implemented, including their retrofit and technical reconstruction in order to extend their service lifetime and improve their efficiency. As a result of the project, the power output of the power units B3-B5 was increased by 10 MW and of the power unit B6 by 24 MW. The total cost incurred for retrofit of four power units amounted to approx. PLN 2.7 billion.

The KPI implementation reports for the years 2015-2017 include information on the eligible costs incurred by PGE GiEK in order to retrofit the power units B7-B12 (except for the power unit B8, which was included in 2015 and 2016, but was not included in 2017). Information on the estimated expenditures for the retrofit of the power units B7-B12 in Bełchatów was excluded from disclosure in the post-inspection report by the Supreme Audit Office (NIK).

Table 5. *Status of retrofit projects in the power units of the Bełchatów Power Plant at the end of 2019*

Number of the power unit	Project completion year
1	Decommissioned in 2019
2	Second stage of the retrofit from 2018.
3	Completed in 2012
4	Completed in 2012
5	Completed in 2012
6	Completed in 2012
7	Completed in 2013
8	Completed in 2013
9	Completed in 2016
10	Completed in 2016
11	Completed in 2015
12	Completed in 2015
14	Power Unit commissioned in 2011

Source: *Own study based on market information*

3.4 SUMMARY

The analysis of the impact of the support on the Bełchatów Power Plant puts into question the effectiveness of the public support. The implementation of the investments included in the KPI, obtaining support from national and foreign funds, and in the 90's also from the long-term contracts, was mainly aimed at covering the costs of adapting the power plants to the stricter EU environmental standards related to air quality protection. The funds received were primarily a support to the power plant owner and not a decisive factor in achieving a positive environmental effect. Among all the instruments analyzed, the allocation of free allowances from the EU ETS and the capacity market, reaching, in peak periods, almost PLN 500 million and PLN 800 million per year, respectively, are the largest. These figures have a significant impact on the overall profitability of the power plant. We estimate that they correspond to 9-10% of its total revenues both in the past (derogations) and in the future (capacity market).

> The aid was primarily a support to the power plant owner and not a decisive factor in achieving a positive environmental effect

Table 6. *Estimated amount of support for the Bełchatów Power Plant according to the support mechanism (PLN million)*

Type of support	PLN million as of 2018	Years
Free CO_2 emission allowances	2 602	2013-2019
Subsidies from POIŚ	22	2010
Subsidies from the Norwegian Financial Mechanism	21	2014
Green certificates	259 - 324	2010-2012
Capacity market	2 305	2021-2025
Preferential loans from WFOŚiGW	63	2010

Source: *Own study based on information from the Ministry of Environment, President of Energy Regulatory Office, NIK, PGE GiEK*

The adopted support logic promotes replacement investment projects extending the operation of the existing infrastructure, i.e. retrofit of coal-fired power units instead of replacing them with alternative technologies. Investments aimed at adaptation of the Bełchatów Power Plant would have to be carried out also without a support scheme, otherwise the units not meeting the emission requirements would have to be decommissioned from the system. This would lead to an increase in electricity prices on the wholesale market, which would allow the power plant owners to cover the costs of the investment in other generating units. Although in both situations the final cost of power sector modernization would be borne by electricity customers, in case of relying on public instruments, instead of market signals, there is an increased risk of additional support for some of the modernization measures in the absence of an actual incentive effect.

The Bełchatów example also illustrates the inefficiency of co-firing technology support. Despite the support at the level of approx. 100 million per year as part of the green certificate system, there was no permanent ecologi-

cal effect in the form of change of the energy mix and emission of CO_2 of power plants (temporary appearance of biomass in the fuel mix of the power plant at the level of approx. 1% for 3-4 years).

In the context of the assessment of all support, the Belchatow example shows, however, that EU regulations are changing towards more competitive allocation mechanisms and reduced support for fossil fuels. From the aforesaid support schemes, only the capacity market will apply in 2020's, however not all Bełchatów Power Plant power units are currently awarded contracts under the auction (which is particularly visible in the auctions for 2022), and since 2025 the EU emission standard at 550 g of CO_2/kWh will make the power plant out of the auction scheme.

> We estimate that the support for the Bełchatów Power Plant corresponds to 9-10% of its total revenue

4 IMPACT OF PUBLIC SUBSIDIES ON ENERGY TRANSITION IN POLAND

4.1 TOTAL AMOUNT OF SUBSIDIES FOR THE POLISH POWER SECTOR

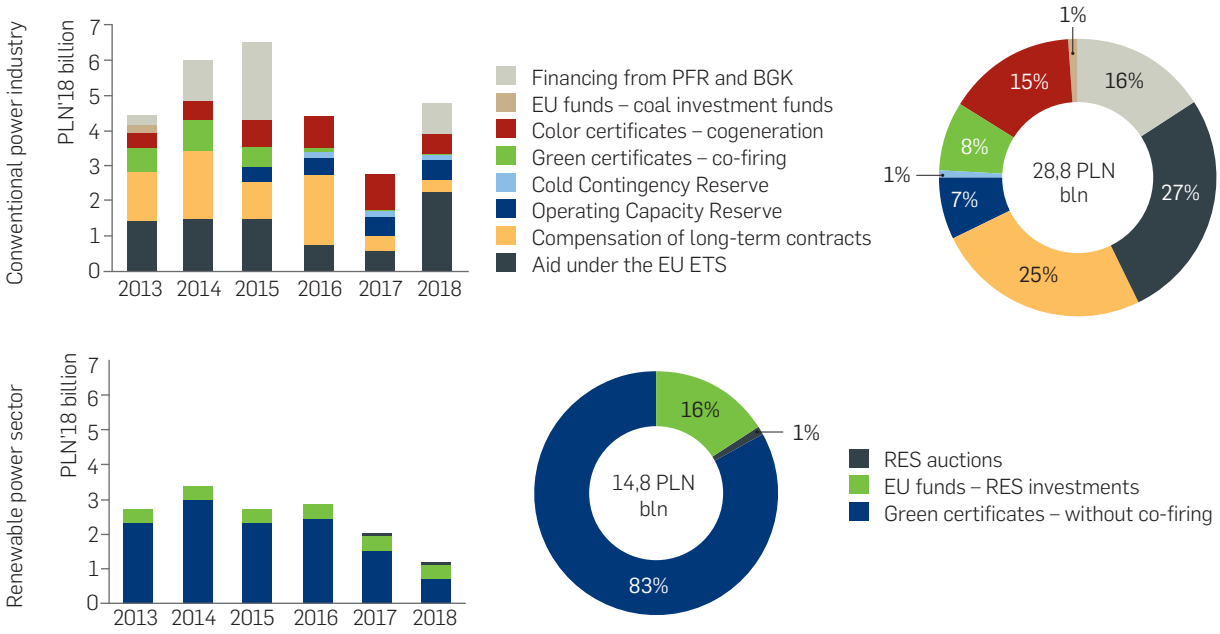
The public support mechanisms described in the second chapter have different timeframes of operation, covering both the support paid so far and future payments on the basis of already resolved auctions of the capacity market or for renewable sources. Therefore, in order to present a coherent view of subsidies for the Polish power sector, allowing for comparison of the scale of different forms of support aimed at different segments of the power market, this chapter focuses on the analysis of two periods:

- years 2013-2018, which include the functioning of key support mechanisms shaping the situation of the Polish power sector in the current decade;
- years 2021-2023, for which it is possible to determine the total scale of support within the capacity market and compare it with financing of renewable sources within the auction scheme.

The analysis takes into account all forms of support discussed in the second chapter, with the exception of national support financed from NFOŚiGW, for which it is not possible to distinguish the exact amount intended for power investments. At the same time, the funds granted by the Fund related to the system power sector to a small extent, covering mainly the distributed power sector. Given the additionally limited scale of support, the omission of this source of funding does not materially alter the conclusions of the analysis. For EU funds, the values per year were estimated based on an assumption of a balanced distribution of support under the financial perspectives 2007-2013 and 2014-2020.

> Nearly half as much as for conventional power sector was spent on RES support in the analyzed period

Figure 25. *Value of support for the Polish power sector in the years 2013-2018 in real terms (PLN '18 billion)*



Source: *Own study based on the results of analyses presented in chapter 2*

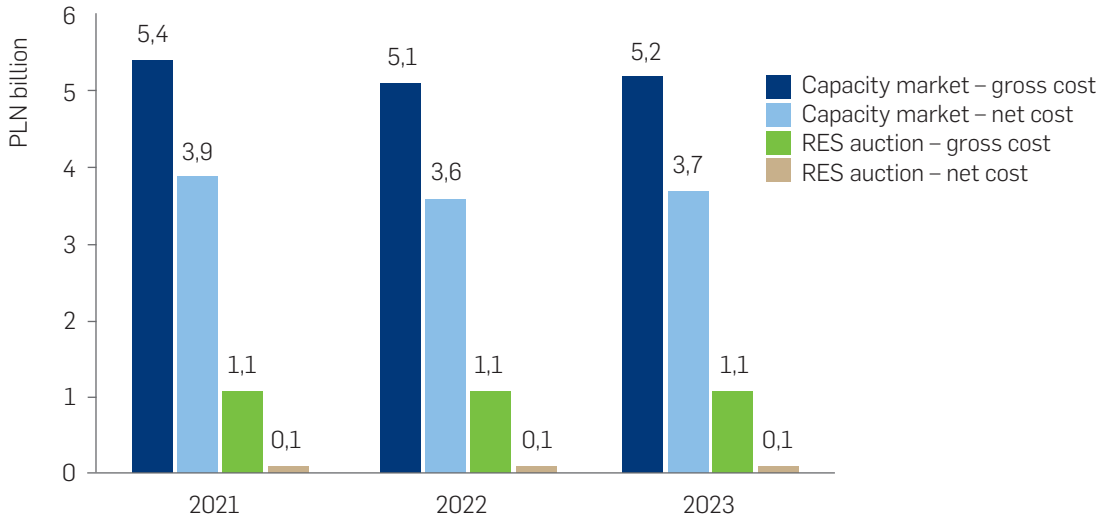
In the years 2013-2018, the conventional energy sector received total support of almost PLN 29 billion, more than half of which (about 52%) resulted from the aid under the EU ETS and payment of compensation for termination of long-term contracts (27% and 25% of the total aid, respectively). Funding provided by the BGK and PFR (16%, most of which was ensured in the years 2014-2015) and support for cogeneration under the color certificate scheme (15%) were less important in terms of the level[380] of support, albeit also relevant from the sector perspective. Other types of support, such as capacity mechanisms or green certificates for co-firing, altogether accounted for approximately 17% of the total support. Financing from EU funds was margin-

380 However, from the point of view of the beneficiaries of the PFR/BGK funds, the value of the aid will only constitute a possible difference between the conditions under which they made their funds available to energy companies and the conditions that can be obtained on the free market.

al and concerned only investments under the previous EU budget perspective (2007-2013).

At the same time, nearly half as much as for conventional power sector was spent on the support of renewable energy sources in the analyzed period. In the years 2013-2018 it was PLN 14.6 billion, of which the vast majority were funds from the green certificates system (excluding biomass co-firing) and to a much lesser extent from EU funds (about 16% of the total aid).

Figure 26. *Value of support for the Polish energy sector in the years 2021-2023 (PLN billion)*



***Note:** assumed decrease in prices on the energy market by PLN 1.5 billion/year as a result of the introduction of the capacity market*

***Source:** Own study based on the results of analyses presented in chapter 2*

When analyzing the history of the power sector support, it seems justified to ask about its forms in the future. As regards the support for the power generation from conventional sources, it will be crucial to terminate the support under the compensation for termination of long-term contracts and the previous aid formula under the EU ETS, which so far account for more than half of the total support for this segment of the energy market. They will be replaced by a transformation of the reserve system (Operational Capacity Reserve (ORM) and Cold Contingency Reserve (IRZ)) into a capacity market, the estimated net cost of which will amount to approx. PLN 11.2 billion in 2021-2023.[381] In the same period, the net cost of supporting the energy generation from RES contracted as part of the auction scheme in the years 2016-2018 will amount to approx. PLN 0.3 billion.

> In the years 2021-2023, the estimated net cost of the capacity market will amount to approx. PLN 11 billion, whereas the net cost of the auction RES support scheme - approx. PLN 0.3 billion

381 This cost may increase after additional auctions. Due to subsequent auctions, the net cost of the RES support system may also increase.

4.2 EFFECT OF SUPPORT FOR MINING ON THE ENERGY SECTOR

4.2.1 LEGAL ASPECTS

A number of support schemes for hard coal mining have been introduced in Poland since its accession to EU in 2004. Coal mining companies that mine steam coal, coke coal as well as coal for firing of blast furnaces were eligible for support. Such schemes did not apply to lignite mining. None of those schemes directly concerned the power sector.

The possibility of adopting support schemes was first allowed under the provisions of EU Council Regulation No 1407/2002 on State aid to the coal industry[382] (hereinafter: "Coal Regulation") and next the Council Decision 2010/787/EU on the aid to facilitate the closure of uncompetitive mines[383] (hereinafter: "Coal Decision"). The assets of the mines subject to liquidation are liquidated and managed by a state-owned entity specially appointed for this purpose: Spółka Restrukturyzacji Kopalń S.A. (SRK)[384].

The Coal Regulation allowed State aid in three areas:

- to limit the operations;
- to gain access to coal resources; and
- to cover the so-called extraordinary costs.

Aid to limit the operations of mines could only be granted if it was intended to cover the current losses of the mine to be liquidated, which was to be closed by the end of 2007. The aid to ensure access to coal resources could be granted in relation to current production, but only to entities with the best economic prospects. The aid in this area could also apply to the so-called initial investments, i.e. new projects, but undertaken only in existing mines. In both areas, the amount of aid granted should have a downward trend[385].

On the other hand, the extraordinary costs within the meaning of the regulation included the costs incurred as a result of the "streamlining and restructuring" of the coal industry not related to current production, such as:

- the cost of payments for social benefits resulting from the retirement of employees before reaching the statutory retirement age;
- the staff retraining cost to be borne by the company;
- additional underground protection works resulting from the closure of production units; and
- costs related to the reclamation of post-mining areas.

Four support schemes were introduced in Poland during the term of the coal regulation[386]. The aid provided for in those schemes was first governed by the Act of 2003 on the restructuring of hard coal mining for the period of 2003-2006[387] and then by the Act of 2007 on the functioning of hard coal mining, including the secondary legislation regulating the detailed rules for granting the aid[388].

382 Official Journal of the European Union, L 205 of 2002, p. 1, as amended.
383 Official Journal of the European Union, L 336 of 2010, p. 24.
384 See more on the website: https://srk.com.pl/ (access 29.11.2019).
385 See Article 6 of the coal regulation.
386 See EC decisions, respectively: K (2005) 1796, K (2007) 1943, K (2008) 864 and K (2010) 3063.
387 Journal of Laws of 2003, No. 210, item 2037 as amended.
388 Journal of Laws of 2007, No. 192, item 1379, as amended (former name of the Act: Act on the functioning of hard coal mining in 2008-2015).

The funds granted on the basis of them were intended for financial restructuring of mining companies, including in particular:

- remission of liabilities of mining companies towards the state;
- spreading of the repayment of liabilities into installments;
- debt-to-equity swap;
- employment restructuring in mining companies (e.g. expenses on retraining of dismissed workers); and
- financing of mine decommissioning.

Poland also granted investment aid for maintenance of access to coal reserves. That measure was governed by the Act on the functioning of hard coal mining, the aim of which was to maintain a minimum level of domestic production of coal[389].

This aid was granted in the form of subsidies to cover the costs of initial investments and consisted of:

- making deposits available from new mining levels or extending existing levels;
- construction or retrofit of production and ventilation shafts;
- purchase or retrofit of mining machinery and equipment necessary in the operation process;
- construction or retrofit of hard coal mechanical processing plants; and
- construction of central or local air conditioning systems.

Funds for all schemes implemented under the EU coal regulation came from the general state budget[390].

The scope of State aid that could be granted to the coal industry was significantly reduced by the above-mentioned Coal Decision taken by EU Council. Under the new legal regime, the aid could and may only be used for the closure of mines (provided that the final closure took place by the end of 2018 at the latest) and to cover extraordinary costs arising from the closure of coal production units not related to current production, such as:

- the payment cost of social benefits;
- the staff retraining cost borne by the company; or
- mining damages[391].

Importantly, unlike the coal regulation, the decision excludes the possibility of granting aid for initial investments. The coal decision expires at the end of 2027 (however, the aid governed by it may not apply to production entities after December 31, 2018).

In 2011, already under the coal decision in force, Poland extended the scheme, which was originally intended to cover the years 2008-2010, until 2015[392]. The legal basis was extended by the Environmental Protection Law, under which the National Fund for Environmental Protection and Water Management (NFOŚiGW) could subsidize the post-mining land reclamation. The objective of the scheme was to cover the costs of the restructuring of the sec-

389 See EC Decision K (2010) 3063.
390 See Article 34 of the Act on the restructuring of hard coal mining for the period 2003-2006.
391 A detailed list of qualified costs is included in the appendix to the coal decision.
392 See EC Decision K(2011) 8280.

tor which had already been carried out and the aid was granted only to the mines put into liquidation before January 1, 2007. The aid was granted in the form of a withdrawal from collecting compulsory contributions to the State Fund for the Rehabilitation of Disabled People (PFRON) as well as fees and penalties payable to NFOŚiGW, and subsidies intended to cover environmental protection costs (such as land surface reclamation in degraded areas, the intake and treatment of mine or saline waters) and social costs (such as compensatory pensions and the right to free-of-charge coal due to retired workers of closed mines).

Another support scheme covered the period of 2015-2018[393]. Apart from the Act on the functioning of hard coal mining, it was also governed, at the national law level, by the Regulation of the Minister of Economy of 2015 on budgetary subsidies intended to finance one-off severance pays and to cover current production losses in the company[394], as well as governed by the environmental law. The mechanism included the coverage of production losses and extraordinary costs related to the closure of mines put into liquidation before January 1, 2007 and costs resulting from the process of closure of coal-fired units put into liquidation between January 1, 2007 and January 1, 2019. This scheme is continued – it has been extended by 5 years, until the end of 2023[395].

The last modification of the support scheme in question consisted of: a change in the list of mines to be liquidated (at the last moment, KWK Sośnica (Sośnica Hard Coal Mine) was replaced by KWK Mysłowice-Wesoła I (Mysłowice-Wesoła I Hard Coal Mine)), an update (increase) of the budget of the support (aid) and a change in the entities granting the exemptions from environmental fees[396]. The mines closed are transferred to SRK (they become branches of SRK), which is the sole beneficiary of the aid. The funds for the implementation of support schemes introduced on the basis of the EU coal decision also came from the general state budget.

All these mechanisms of the national hard coal mining support were notified to the EC, which considered them to be State aid compatible with the internal market. From the beginning of 2019, the aid (support) can only be granted for mines put into liquidation until the end of 2018. Therefore, in the currently applicable legal status, mines which have been or will be closed after that date cannot count on the governmental support and must bear the restructuring costs on market terms.

> Mines which have not been closed by the end of 2018 cannot count on the governmental support and must bear the restructuring costs of on market terms

4.2.2 ECONOMIC ISSUES

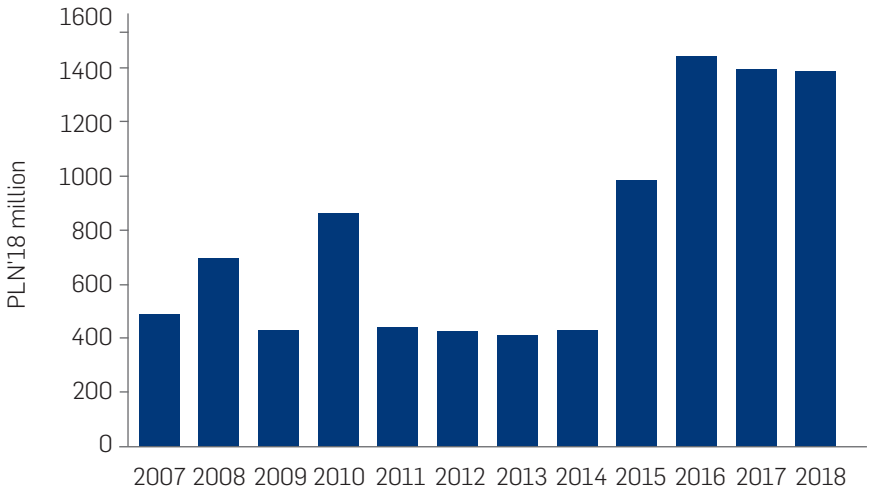
The crisis in hard coal mining in the year 2015 led to a sudden increase in support for this sector compared to the previous years. Only between 2016 and 2018, direct aid of the state to the whole sector amounted to around PLN 4 billion, which means that it amounted to only PLN 300 million less than the cumulated sum of budget subsidies during the nine years preceding the crisis of 2015 (about PLN 4.3 billion in total for the period 2007-2015). The main elements of support in 2016-2018 included, first of all, the covering of the

393 EC Decision C(2016) 7510.
394 Journal of Laws of 2015, item 510 as amended.
395 EC Decision C(2018) 724.
396 EC Decision C(2019) 5395.

costs of works necessary for safe shutdown of mining operations in unprofitable mines (approx. PLN 2.3 billion) and financing employees' claims arisen as a result of employment reduction (more than PLN 1 billion, of which PLN 933 million was attributable to the costs of social protection). Thus, the support focused primarily on mining plants withdrawn from the market and on the payment of benefits to workers losing their jobs. From an economic point of view, such a form of support, which is financed from the state budget, had a marginal impact on the energy sector. It did not affect either the electricity selling prices or the fuel purchase prices or the overall financial results of the energy companies.

> Direct State aid to Polish mining sector amounted to approx. PLN 4 billion in the years 2016-2018 only

Figure 27. *State aid for the hard coal mining sector in the period of 2007-2018*



Source: *Own study based on data from the Ministry of Energy*

However, indirect support for hard coal and brown coal mining in the form of preferential rules for calculating pensions for the employees of this sector has a much greater impact on the functioning of the energy sector. Thanks to those preferences, mines can offer more attractive employment conditions in a sector characterized by work in difficult conditions without additional costs. According to the estimates by WiseEuropa, the current annual value of this form of support exceeds PLN 3 billion[397]. The reduction in employee recruitment and maintenance costs of the mining sector may translate into a decrease in the coal price, to the benefit of power plants purchasing this raw material. In practice, this effect is important mainly for brown coal-fired power plants, which purchase raw material directly from open pit mines within the framework of integrated mining and power companies.

A specific form of support for the mining sector was the involvement of energy companies in the restructuring through co-financing of the newly established Polska Grupa Górnicza (PGG) (Polish Mining Group) in 2016-2017. In this

397 See U. Siedlecka, A. Śniegocki, Z. Wetmańska, Ukryty rachunek za węgiel 2017. Wsparcie górnictwa i energetyki węglowej w Polsce - wczoraj, dziś i jutro (Indirect coal cost in 2017. Support for mining and coal-fired power plants in Poland - yesterday, today and tomorrow), WiseEuropa 2017.

case, the energy sector turned out not to be the beneficiary of the support but to be the net payer: the financial resources of energy companies were redirected to the mining sector with a high risk of negative return on investment and a lack of involvement of private investors[398]. In the case of PGG, the level of involvement of energy companies was limited to the level of direct recapitalization of the Group (PLN 2.3 billion in total in the years 2016-2017 from Energa, PGE, Enea and PGNiG Termika).

The direct takeover of the Brzeszcze Coal Mine by Tauron was characterized by higher exposure to risk of restructuring failure. In the latter case, the failure of the economic reform of mining assets currently translates into a worse situation of the entire group: in 2018, the EBITDA index for Tauron Wydobycie amounted to PLN -207 million (with the total financial result of the entire group amounting to PLN 3.5 billion), whereas in the first three quarters of 2019 these figures amounted to PLN -261 million and PLN 3.05 billion, respectively[399].

It is worth noting that the capital integration of the mining and energy sectors has led to an indirect relationship between the support for energy and mining sectors: the co-financing of investments by power companies has increased their capacity to involve in an economically doubtful restructuring program which has not brought about a lasting improvement in profitability or cost competitiveness of the sector (see Table 7). At the same time, redirecting the financial resources of the Polish energy sector to the mining sector translated into reduction of the available funds for investments in diversification of generating capacities.

> Redirecting the Polish energy sector resources to the mining sector meant reduction of the funds available for investments in diversification of generating capacities

Table 7. *Mining costs and profitability of sales in hard coal mining sector in Poland, 2015-2018*

	2015	2016	2017	2018
Coal mining costs, PLN/t	364	322	353	419
Result on coal sales, PLN/t	-45	-17	41	13
Return on coal sales	-14%	-6%	10%	3%

Source: *Own study based on data from the Ministry of Energy*

4.3 SUMMARY

4.3.1 LEGAL ASPECTS

The mechanisms of state intervention in the energy market presented in this study reveal a huge scale of aid transferred to the national energy sector. Most of the mechanisms presented undoubtedly constitute State aid within the meaning of the TFEU. In a very large number of cases, this has been ex-

398 See M. Bukowski, U. Siedlecka, A. Śniegocki, Zapaść - czy fuzja z energetyką uratuje polskie górnictwo? (Collapse - will the merger with the energy sector save the Polish mining industry?), WiseEuropa 2019.

399 Data from the Tauron group financial statement for the 3rd quarter of 2019.

plicitly stated in the relevant EC decisions. Interference in the energy market by a broadly understood state, which involves an advantage for its participants, shall not constitute State aid in exceptional cases only.

In the scope of support schemes covered by this report, such a situation was identified in the case of the obligation to purchase electricity from cogeneration and RES (both mechanisms are no longer applicable). The support instruments used by public institutions on market terms are not an aid either – this applies, for example, to some of the loans offered by NFOŚiGW. However, if PFR or BGK engage in energy investment projects, it is not possible to determine whether the characteristics of State aid are fulfilled in such a case without having access to the specific terms and conditions of individual contracts. However, the fact that these entities support projects in which private companies were not willing to invest is questionable.

Moreover, based on the intervention mechanisms in the energy market which have never been officially notified to EC, the conditions for State aid within the meaning of the TFEU appear to be met by the compensation mechanisms provided for in the so-called Energy Prices Act (in particular the refunding of the price difference and the freezing of retail electricity prices for all categories of customers in the first half of 2019), existing capacity mechanisms (in particular IRZ, ORM) and the possibility of exchanging investment certificates into shares of energy companies as referred to in the amended act on long-term contracts. Importantly, the mechanisms notified to the EC by the authorities of other member states (Germany, Belgium) were very similar to the Polish mechanisms and the Commission finally concluded that they constitute State aid.

The Polish authorities should therefore each time notify the EC of such doubtful mechanisms in order to obtain legal certainty as to the legality of their implementation in the proposed form. This is of particular importance for the beneficiaries themselves. The EC investigates even potential State aid mechanisms that are in practice no longer in force. While the state is responsible for the form and legality of the regulation, potential consequences, both in terms of its inadequacy to market reality and compliance with EU law, may be most suffered by the beneficiaries of the support.

It should also be stressed that, even in the case of support schemes approved by the EC, the Polish authorities do not always implement the provisions of the relevant EC decisions. This is the case for aid to Polish power plants for the period 2013-2020 under the EU ETS. Such circumstances may hinder EC acceptance of further intervention proposals in the domestic energy market submitted to it by the Polish authorities.

The scope of possible interventions in the energy market by member states is increasingly narrowing, in particular due to the EU institutions' desire to increasingly liberalize the internal energy market and base it on the so-called energy only market (EOM) model, as well as due to the increasingly progressive climate policy reflected in the existing legislation (in particular the Clean Energy Package and the amended ETS Directive).

The support for the coal power sector will be very limited in the next decade, only as a result of the regulations which have already been adopted. Moreover, under EU law, new State aid to the coal mining sector can no longer be granted from the beginning of 2019. Further tightening of the criteria for the eligibility to State aid can be expected in the revised EEAG, which are likely to become effective only as of 2023.

> Interference in the energy market by a state, which involves an advantage for its participants, shall not constitute a public aid in exceptional cases only

It should also be noted that the Polish authorities have improved their State aid-related procedures over the years. In recent years, the assumptions of the mechanisms considered crucial by the authorities (capacity market, new rules for RES auctions, new cogeneration support scheme) have been notified in advance to the EC, which enabled their relatively quick approval by the Commission. The implementation of the indicated mechanisms started only after obtaining the EC approval, which was not a standard before (as reflected, in particular, in the procedures dragging on for years concerning the systems of RES and cogeneration certificates, which were examined by the EC only after years of their validity). In recent years, the Energy Prices Act is the most negative example of non-compliance with EU State aid procedures.

A clear trend of separating new aid mechanisms for individual market segments into dedicated special acts becomes evident as well. This may also be the case for the planned offshore wind energy support scheme[400].

> The existing support schemes mainly conservatized the Polish energy sector

4.3.2 ECONOMIC ISSUES

The support logic for the energy sector was so far based on the financing of investment expenditures in the conventional energy sector through the use of dedicated instruments (from the long-term contracts, through the derogation mechanism within the EU ETS to the capacity market). This approach has translated into the Polish energy sector becoming conservative – both in the scope of entities operating on the market and the technology mix. However, the alternative consisting in basing the retrofit on the path resulting from the price signals, i.e. allowing to withdraw part of the power units from the system and the resulting increase in energy prices, was consistently rejected. In this case, the increase in energy prices would allow both the retrofit of old units in the system and the financing of new investments, which would make it possible for new players to enter the market and to introduce new energy generation technologies.

Relying on solutions facilitating the restoration of the existing assets in the energy sector has led to accumulation of problems in the power sector over the years. This resulted both from changes in the European regulatory environment (meeting the climate objectives) and from the technological change (falling prices of low-emission technologies). Thus, despite the support provided to large Polish energy companies, it was not possible to build their sustainable competitive position. This results from the long-term impairment of coal assets, the retrofit and extension of which has been supported for years. An additional problem for the Polish energy sector is its growing relationship with mining. The involvement of energy companies' resources in the mining sector which faces persistent competitiveness problems limits their ability for technological diversification.

Systematic financing of the reconstruction of the existing form of the Polish energy sector was accompanied by the lack of a systemic approach to support for new technologies. Although the conventional energy sector was retrofitted to the level compliant with the applicable standards, there is still a noticeable backwardness in other energy generation technologies. This was

400 See https://www.gov.pl/web/energia/ministerstwo-energii-rozpoczyna-legislacyjny-etap-prac-nad-ustawa-dotyczaca-morskiej-energetyki-wiatro-wej (accessed on November 29, 2019).

reflected, among others, in the lack of real diversification of technologies in the National Investment Plan, as well as inefficient management of the green certificate system, which has undermined investor confidence. RES auctions were introduced with delay and, moreover, the wind energy development limitations due to the introduction of the so-called Distance Act have not been solved.[401] Projects implemented through European Union funds have not been able to fill the gap caused by the lack of the instruments for systemic support of renewable energy.

The so-called Energy Prices Act constitutes the culmination of problems with the existing model of support for development of the Polish energy sector. The act was introduced in response to the step increase in electricity generation costs, but it has only aggravated the shortcomings of the national support instruments that led to the loss of competitiveness of the sector, i.e.: redirection of resources towards maintaining the status quo, the lack of incentives for long-term technological restructuring, as well as limiting the opportunities for new players to enter the market and resulting in a bottom-up investment optimization that would take into account the full range of energy generation and energy saving technologies.

These problems are constantly reduced or gradually addressed by regulatory pressure at EU level. These include termination of the long-term contracts and the gradual expiry of the related compensations. An important change is also the abandonment of the free emission allowance scheme as it stands, the streamlining of the RES support scheme and the recognition of the capacity market as a transitional mechanism. Changes in the way EU funding is granted and new priorities in the direction of investment funding from Grupa PFR should also be assessed as positive.

However, it should be noted that although EU regulations have lead primarily to the withdrawal from inefficient national support schemes, they are not able itself to provide efficient solutions for the sector transformation, as it depends on decisions taken at the national level. Therefore, without shifting the focus of national energy support schemes towards stimulation of rapid restructuring of the sector based on new technologies and business models, as well as activation of new groups of energy market participants, there is a high risk of stagnation in the sector. It will be a consequence of limiting the investment opportunities in the conventional energy sector and a significant backwardness in the development of low-emission energy sector.

401 The Wind Energy Investments Act of May 20, 2016 (Journal of Laws of 2019, item 654, as amended).

5 POLAND COMPARED TO OTHER EU COUNTRIES

5.1 MAIN ENERGY SECTOR SUPPORT SCHEMES IN GERMANY

There are many different aid mechanisms in Germany dedicated to different segments of the energy generation market. The largest number of support schemes concerns renewable energy. Since 2017, the most important of them is the auction scheme for electricity generated in new RES plants. The support is guaranteed for 20 years and takes the form of a degressive contract for difference[402]. Like in the case of Polish RES auctions, we deal here with the pay-as-bid model and joint tenders conducted for more than one technology (in both countries, onshore wind power plants and photovoltaic power plants compete in a single auction).

Prior to the introduction of an auction scheme in Germany aimed at stimulating the increasing marketization of RES sources (which is in line with the

402 See in more detail on: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/tenders-auctioning-the-feed-in-support-for-ground-mounted-installations/lastp/135/ (accessed on November 29, 2019).

evolution of the EU law requirements), the main RES support scheme was the FIT scheme.

This mechanism continues to cover power plants that entered the scheme in past years and, for new investment projects, from 2017 onwards, concerns plants with the capacity of up to 100 kW[403]. Like in Poland, there is also a system of contracts for difference in the form of a FiP in Germany, which constitutes an intermediate solution between the FIT system and the auctions[404].

As far as large-scale RES sources are concerned, Germany is one of the leaders in the development of offshore wind farms, currently having more than 6.5 GW of installed capacity for such a technology[405]. Apart from the dedicated auctions for those power sources, there is a separate offshore plants crediting system in Germany provided by the State bank KfW[406] and, additionally, due to the scale of the investment projects (power output of one project often exceeds 250 MW), according to the requirements of EEAG[407], the operating aid is notified to the EC individually for each specific plant. KfW also offers investment support in the form of loans for other RES technologies, including photovoltaic plants integrated with storage facilities[408].

It should be noted that the German law provides separate remuneration for the availability of capacity in dispatchable RES sources, ensuring subsidies for biogas plants, payable per kW of capacity per year (in two forms: the so-called flexibility surcharge[409] and flexibility premium[410]), which may be combined with participation in any of the basic, operating RES support schemes. Germany also supports cogeneration under a separate law (the so-called KWKG). This regulation, like the new Polish CHP Act, provides for several support schemes, including fixed premiums added to the electricity market price and auctions for new plants[411]. Given the scale of the projects, the aid to cogeneration units is subject to individual EC notification in some cases[412].

Along with the increase of installed capacity in non-dispatchable RES plants, Germany has started to adopt capacity mechanisms dedicated to conventional power sector. This applies in particular to the so-called network reserve[413], which has been in force in the current formula since 2016, and the capacity reserve[414], which was introduced in October 2019. Both mechanisms constitute strategic reserves (like the Polish IRZ mechanism), where capacity providers operate outside the energy market. Power plants located in Italy and Switzerland may also participate in the network reserve, while DSR units may participate in the new capacity reserve. It should be stressed that both re-

> Polish RES and cogeneration support schemes are currently very similar to German ones

403 See: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/feed-in-tariff-eeg-feed-in-tariff/lastp/135/ (accessed on November 29, 2019).
404 See: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/premium-tariff-i-market-premium/lastp/135/ (accessed on November 29, 2019).
405 See: https://www.energy-charts.de/power_inst.htm (accessed on November 29, 2019).
406 See: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/loan-kfw-programme-offshore-wind-energy/lastp/135/ (accessed on November 29, 2019).
407 See point 20 letter b of the EEAG.
408 See, respectively, http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/loan-kfw-renewable-energy-programme-standard/; and http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/loan-kfw-renewable-energy-programme-storage/lastp/135/ (accessed on November 29, 2019).
409 See: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/subsidy-flexibility-surcharge/lastp/135/ (accessed on November 29, 2019).
410 See: http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/subsidy-flexibility-premium/lastp/135/ (accessed on November 29, 2019).
411 See in more detail on: https://ec.europa.eu/commission/presscorner/detail/en/IP_16_3525 (accessed on March 16, 2020).
412 See e.g. EC Decision C(2016) 8714 final.
413 See EC Decision C(2016) 8742 final.
414 See EC Decision C(2018) 612 final.

serves are transitional measures and are of very limited time horizon – i.e. the EC has approved them until 2020 only.

In addition, German transmission system operators may carry out specific tenders for balancing units which are at their sole disposal and which operate outside the energy market (special grid facilities)[415]. Like in Poland, German law also provides for a capacity mechanism dedicated only to DSR units which reduce energy consumption upon the order of the system operator (interruptibility scheme)[416].

These capacity mechanisms (network reserve, capacity reserve, DSR scheme) were notified by Germany to the EC and, following certain changes in these systems made by Germany, EC considered them to be State aid compatible with the EU internal market (in the case of the network reserve, the EC approved the regulation following an in-depth investigation procedure). It is worth noting that very similar mechanisms have not been notified to EC by the Polish authorities.

On the other hand, EC did not examine tender procedures for special network units. Those tender procedures seem to satisfy the conditions laid down in Article 8 section 1 of the EU Energy Directive, which provides for an ultimate measure aimed strictly at guaranteeing security of electricity supplies[417]. Polish Energy Law allows carrying out similar tender procedures[418], but the national authorities have never made use of this possibility, but decided to introduce immediately a market-wide capacity mechanism instead. However, the use of the option provided for in Article 8 section 1 of the IEM Directive does not exclude the necessity to notify about State aid[419] concerned and the EC has already approved tender procedures for specific power plants as an aid[420].

All the above-mentioned operating support schemes for RES (auctions, FIT tariffs, premiums) constitute State aid compatible with the internal market. These mechanisms, as amended, have been examined in several EC decisions[421]. The KfW schemes are not considered State aid by the German authorities because the loans offered do not deviate from market conditions and have not been notified to the EC[422]. The cogeneration support schemes provided for in the KWKG act have been approved by the EC as compatible State aid[423].

415 See for example: https://www.uniper.energy/news/uniper-to-build-new-gas-power-plant-in-irsching/(accessed on November 29, 2019).
416 See EC Decision C(2016) 6765 final.
417 R. Zajdler, Commentary to Article 8 of Directive 2009/72/EC, LEX/el. 2011.
418 See Article 16a of the Energy Law. These tenders are organized by the President of ERO after the Minister of Energy finds that there is a threat to security of supply.
419 See M. Swora (ed.), Commentary to Article 16a (in:) Z Muras, M. Swora (ed.), the Energy Law, op cit. p. 908 et seq.
420 See e.g. the aforementioned decision C(2010) 4146 concerning the construction of a new power plant in Lithuania.
421 See in particular the Decisions: C(2014) 8786 final, C(2016) 2406 final and C(2016) 8789 final.
422 See e.g. point 72 of the EC Decision, C(2015) 2580 final.
423 See EC Decision C(2016) 6714 final.

5.2 MAIN ENERGY SECTOR SUPPORT SCHEMES IN GREAT BRITAIN

> The Great Britain has fewer power sector support schemes than Germany

The United Kingdom has fewer power sector support schemes than Germany, and the mechanisms operated there are slightly different in nature and are partly intended for other market segments. Like in Germany and Poland, the main RES support scheme is currently an auction scheme in force since 2014, where support is granted in the form of a contract for difference[424]. Auctions may be conducted for all main RES technologies, including cogeneration units. However, in recent years, the Great Britain authorities have not organized auctions for the most market mature, i.e. onshore wind power plants and photovoltaic power plants (support for wind projects located on islands is possible in the most recent round of tender procedures)[425].

Given the scale of the projects, aid granted to offshore wind farms under a contract for difference is, in addition, individually notified to the EC[426]. The British auction scheme also allows for conversion of large coal-fired power units into biomass. Such aid shall also be individually notified to the EC. This type of modernization was carried out in Drax and Lynemouth power plants. Aid for larger CHP plants also needs to be notified individually[427].

Previously, the FiT scheme, which since 2012 included onshore wind power plants, photovoltaics, biogas plants and hydropower, was of great importance[428]. The possibility of entering the system for new plants ended in March 2019[429]. The renewables obligation certificate system, which has been the first British RES support scheme since 2011, together with the centralized system of investment subsidies, is also historically important today[430]. For new plants, the possibility of participating in this scheme expired at the end of March 2017[431].

In terms of support for certain power generation technologies, the so-called carbon price floor mechanism applicable since 2013 (hereinafter also: "CPF") should be considered, which sets a minimum price for carbon dioxide emission (currently at GBP 18 per ton). It is a national tax measure going beyond the requirements of the EU ETS Directive[432]. The justification for such a mechanism was above all to ensure long-term investment predictability in zero- and low-carbon energy sources, even if the prices of EUAs are very low. Importantly, certain power plants are exempted from the payment of this emission fee, even if their operation actually generates greenhouse gas emissions (this applies in particular to biomass-fired power plants, cogeneration units and back-up sources)[433].

In addition, Great Britain supports the nuclear power sector. The aid is granted in the form of a contract for difference, the value of which is the dif-

424 See in more detail on: https://www.emrdeliverybody.com/cfd/home.aspx and http://www.res-legal.eu/search-by-country/United-kingdom/single/s/res-e/t/promotion/aid/tenders-contracts-of-difference/lastp/203/ (accessed on November 29, 2019).
425 See in more detail on: https://www.emrdeliverybody.com/cfd/home.aspx (accessed on November 29, 2019)
426 See, e.g. EC Decision C(2014) 5074 final.
427 See EC Decision C(2015) 168 cor.
428 See in more detail at: http://www.res-legal.eu/search-by-country/United-kingdom/single/s/res-e/t/promotion/aid/feed-in-tariff-5/lastp/203/(accessed on November 29, 2019).
429 See https://www.gov.uk/feed-in-tariffs (accessed on November 29, 2019).
430 See in more detail on: https://ec.europa.eu/competition/state_aid/cases/136903/136903_417382_37_2.pdf (accessed on November 29, 2019).
431 See http://www.legislation.gov.uk/uksi/2014/2388/contents/made (accessed on November 29, 2019).
432 See in more detail at: http://www.res-legal.eu/search-by-country/united-kingdom/single/s/res-e/t/promotion/aid/tax-regulation-mechanism-carbon-price-floor/lastp/203/ (accessed on March 16, 2020).
433 See ibidem and: https://www.gov.uk/government/publications/excise-notice-ccl16-a-guide-to-carbon-price-floor/excise-notice-ccl16-a-guide-to-carbon-price-floor (accessed on March 16, 2020).

ference between the market price of electricity and the fixed (generally higher) price resulting from the contract concluded with the State, due to the future operator of the nuclear power plant for the electricity supplied to the grid. Such a contract was concluded in 2016 for the planned Hinkley Point C power plant[434].

As far as capacity mechanisms are concerned, Great Britain was the first in the EU to introduce a large-scale, market-wide mechanism to ensure generation adequacy, in the form of an auction capacity market, based on the solutions previously adopted in the US[435]. This mechanism was followed by the Polish legislator when constructing the national capacity market. The British system was the first capacity mechanism approved by the EC on the basis of the EEAG, which declared it as aid compatible with the internal market in 2014[436]. It is worth noting that a separate capacity mechanism applies in Northern Ireland[437].

The EC decision was challenged by an undertaking in the DSR segment before the General Court of the European Union, which annulled it in 2018[438], primarily due to an incomplete examination of the case by the EC[439]. Following that decision, the British authorities suspended the functioning of the mechanism (including payments)[440], while the EC opened an in-depth investigation procedure for the mechanism and, at the same time, appealed against[441] the General Court's decision to the CJEU (the case is pending)[442]. In the meantime, in October 2019, this mechanism was re-approved by the EC[443]. It is also worth noting that at the end of 2016, the British authorities notified separately and obtained a positive decision from the EC to conduct a supplementary capacity auction that would allow the mechanism to become operational even in 2017, i.e. one year earlier than originally planned[444]. In view of the pending proceedings before the CJEU, it is still not clear whether the British capacity market is compatible with the EU State aid law.

After an in-depth investigation procedure, the aid to Hinkley Point C power plant was declared compatible with the internal market.[445] Similarly, the EC approved individual aid for the conversion of the Drax and Lynemouth power plants into biomass[446]. All the RES support schemes cited (auctions[447], FiTs[448], certificate scheme[449]) were notified by the British authorities to the EC and approved as State aid compatible with the internal market. The carbon price floor was not examined by the EC.

It is still not clear whether the British capacity market is compatible with EU State aid law

434 See https://www.gov.uk/government/news/hinkley-point-c-contract-signed (accessed on November 29, 2019).
435 See in particular: https://www.pjm.com/markets-and-operations/rpm.aspx (accessed on November 29, 2019).
436 See Decision C(2014) 5083 final.
437 See EC Decision C(2017) 7794 final.
438 See the above-mentioned judgment on case T-793/14.
439 See in more detail at: https://www.clientearth.org/expert-view-what-does-the-general-Court-ruling-mean-for-Great-britains-capacity-market/(accessed on November 29, 2019).
440 The current status of the mechanism is available at: https://www.gov.uk/government/collections/electricity-market-reform-capacity-market (accessed on November 29, 2019).
441 See EC Decision C(2019) 1296 final.
442 Case file No. by CJUE: C-57/19 P.
443 Commission Decision C (2019) 7610 final.
444 See EC Decision C(2016) 7757 final.
445 See EC Decision C(2014) 7142 final cor.
446 See EC decisions: C(2016) 8442 final and C(2015) 8441 final, respectively.
447 See EC decisions: C(2014) 5079 final, C(2017) 1244 final and C(2019) 3512 final.
448 See EC decisions: C(2010)2445, C(2011)7117 final and C(2013) 1615 final.
449 See EC Decision C(2001) 3267fin and the relevant decisions on amendments to this scheme.

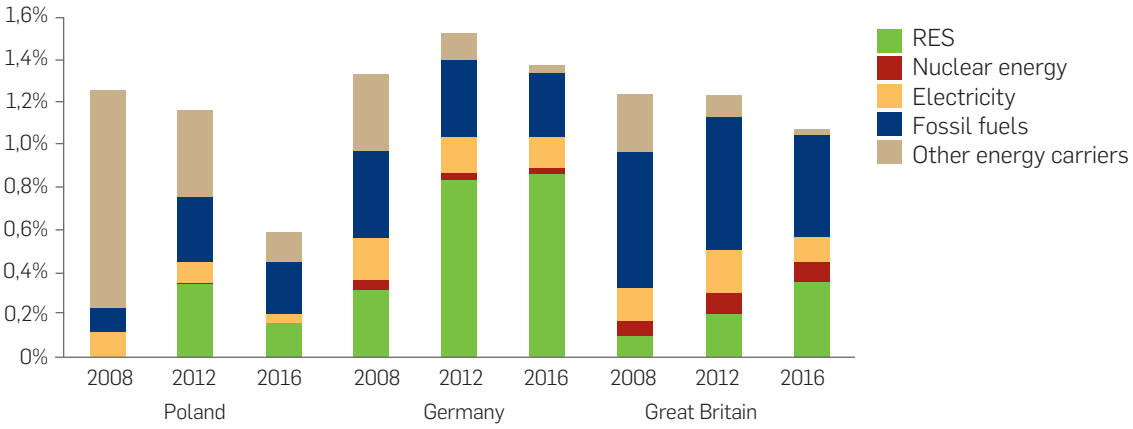
5.3 ASSESSMENT OF THE SIZE AND EFFECTIVENESS OF POWER SECTOR SUPPORT IN GERMANY AND GREAT BRITAIN

> In Poland, the share of State aid to the power sector is declining in relation to the GDP

The most comprehensive analysis of the size of public support for the power sector is included in the reports prepared at the request of the European Commission. They represent the total volume of support without specifying the specific measures allocated to the power sector. However, they make it possible to identify the correctness, differences and similarities between the different EU countries and combine support for the different segments of the fuel and power sector.

Germany and Great Britain are the countries with the highest level of public support for the EU power sector (in total EUR 355.28 billion and EUR 229.89 billion, respectively, in 2008-2016). During this period Poland supported its power sector totaling EUR 36.1 billion. However, differences in the scale of support to the power sector are better reflected in relation to the GDP – in 2008, all countries had a similar share of public aid in relation to the GDP of around 1.3%. However, differences were observed already in 2012, reflecting an increase in share for Germany, a constant level maintained by Great Britain and a decrease in Poland. In 2016, differences turned out to be even greater – while Germany and Great Britain spent 1.4 and 1.1% of their GDP respectively on the power sector support, in Poland this share was only 0.6%.

Figure 28. *Support to the power sector as a percentage of the GDP in Poland, Germany and Great Britain in 2008-2016*[450]



Source: *Own study based on Trinomics et al (2018), Study on Energy Prices, Costs and Subsidies and their impact on Industry and Households*

However, there is a significant difference between these countries not only in the volume of support but above all in its structure. While Germany invests most in energy, it focuses its support on RES; in the case of Great Britain most public support is still directed towards fossil fuels. Its share remained stable

450 Data for electricity presented in the diagram refer to generation and transmission, which does not include RES and nuclear energy; data for fossil fuels also include the mining sector; other energy carriers refer to other technologies, including heat generation.

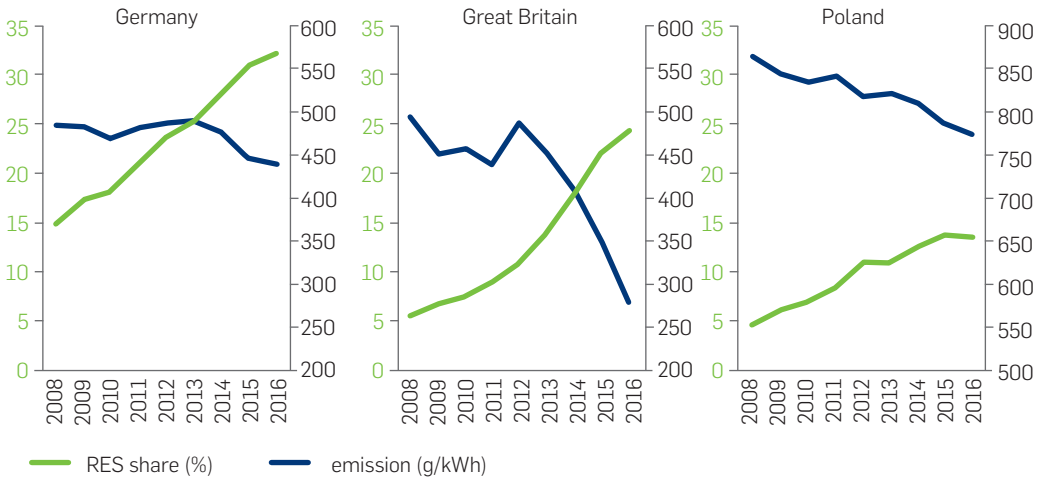
over the period described, with an increase in nuclear power sector expenditures, unlike Germany, where support for nuclear energy began to decrease due to the decision to abandon nuclear technology. In the case of Germany, in the period 2008-2016 the RES share in the support volume exceeded 50%, whereas in Great Britain it ranged from less than 10% in 2008 to approx. 30% in 2016. By comparison, in Poland, in the record 2014, RES funds exceeded 40%, but already in 2016 there was a decrease below 30%.

The expenditures on RES in the scale of total public support for the power sector can be compared with the effects of this support measured by the RES share in the structure of electricity generation in the said countries and comparison of the changes in the economy emission over time. For example, despite a significant increase in the RES share in the German power mix (from 15 to 34% in 2008-2016), there was no such significant reduction in the economy emission (from 486 to 441 gCO_2/kWh in the same period). The main reason for such a condition is to maintain a high share of fossil fuels (in particular coal) in total electricity generation, as evidenced by the decision to resign from nuclear energy to 2022.

The situation is different in the case of Great Britain, which not only managed to increase the RES share in electricity generation more dynamically (from 5.5 to 24.6% in 2008-2016), but also significantly reduce greenhouse gas emissions (from 497 to 281 gCO_2/kWh in the same period). Meanwhile, in Poland, the RES share in electricity generation in 2008 was 4.4% and then increased to the historically highest level: 13.4% in 2015. In 2016-2017, however, the RES share in the energy mix decreased in Poland, which was related not only to the reduction of public support for this technology, but also to an unfavorable and uncertain regulatory environment.

> In the years 2016-2017, Poland recorded a decrease in RES share in the energy mix

Figure 29. *RES share and emission of electricity generation in Germany, Great Britain and Poland in 2008-2016 (%)*



Source: *Own study based on Eurostat data*

An appropriate measure of the effectiveness of support for the sector covers also the assessment of the stability of the power system operation. In the case of Germany, the problem consists in power shortages and electricity transmission from northern areas (where a large part of power comes from

RES, including primarily from wind farms) to energy-intensive, industrialized south. This risk is reduced, i.a., by the above-mentioned strategic cold contingency reserve system operating in Germany and by increased dependence on import capacities from the neighboring countries[451]. The reduction of this risk was handled differently by Great Britain by introducing the capacity market and maintaining support for the nuclear power sector – here, the construction of the Hinkley Point C nuclear power plant in Somerset is an iconic contract, for which the public support was estimated by the European Commission in the procedure at even EUR 19 billion.

The assessment of the reliability of the power system in the compared countries is also worth noting. In 2016, the SAIDI (System Average Interruption Duration Index)[452] for unplanned interruptions (with catastrophic interruptions) for Germany was 24, whereas for Great Britain it was 50 and for Poland as much as 272. The SAIFI[453] for these countries was 0.59 for Germany, 0.54 for Great Britain and 3.46 for Poland, respectively. Therefore, there is a significant unfavorable difference between the reliability of the Polish power network and the reliability of the German and the British power network. This difference results not from the occurrence of system shortages in generating capacities, but from the condition of the network infrastructure.

In the case of Great Britain, the effect of carbon price floor existence, i.e. national minimum price for emission allowances, has been visible since 2013. It is a system complementary to the EU ETS, which comprises minimum CO_2 tax level called carbon price support (CPS), established by the government (projection-based). The existence of a fixed price, independent of the cost of allowances under the EU ETS, ensures the existence of incentives to invest in low carbon economy also in conditions of low allowance prices and reduces the related market investment risk. Although the CPS component is expected to increase, it is frozen at GBP 18/ton since 2016 to 2021. Nevertheless, the noticeable reduction of average emissions by Great Britain (from 491 gCO_2/kWh in 2012 to 281 in 2016), much higher than for example in Germany (from 488 gCO_2/ kWh in 2012 to 441 in 2016), may be due to the CPF functioning next to the EU ETS.

> The significant reduction in the average emissions of the British energy system resulted in particular from the introduction of a minimum price for CO_2 emission

5.4 EFFECTS OF THE AID FOR THE POWER SECTOR IN THE WEST OF EUROPE – CONCLUSIONS FOR POLAND

Although the disproportion in the amount of support for RES between Poland, Great Britain and Germany is smaller (if the size of the economies is taken into account), it is all the more justified to ask about the cost effectiveness of the introduced support schemes. On the one hand, the German model assumed a uniform increase in the RES share in the power mix, although at very high costs at the beginning of the energy transition.

On the other hand, it significantly boosted the development of this market not only at national but also at international level. In turn, the model adopt-

451 According to the German trade organization BDEW, in June 2019 Germany became a net importer of electricity for the first time since July 2014.
452 System Average Interruption Duration Index. The SAIDI is expressed in minutes per consumer per year.
453 System Average Interruption Frequency Index. The SAIFI is expressed in the number of interruptions per consumer per year.

ed in Great Britain aimed at maintaining support for energy generation from fossil fuels, with a non-linear increase in the RES share in the mix, accelerating along with the decrease in technology costs.

Thus, comparing the energy transition models adopted in the three mentioned countries, the Polish support scheme for the power sector can be assessed as cost-ineffective. Since its very beginning, significant measures have been involved (considering the size of the Polish economy), which have not translated into sustainable systemic effects. Examples of the lack of such effects comprise the inhibition of the onshore development of wind power sector, as well as the transitional nature of the use of co-firing technology.

Nevertheless, it is possible to correct the transition model, although it will not necessarily permanently accelerate the RES power increase. Conditions therefore already exist – i.a., the auction scheme was successfully implemented and in the years 2018-2019 the power output of the PV plants increased dynamically. However, in order to achieve a real acceleration, support for zero-emission energy sources shall be integrated into the State's energy policy, implemented at various levels. An example of a successful public policy that complements support for RES can be the carbon price floor introduced in Great Britain. The CPF has provided companies operating in the British market with predictability of future investment directions (even in the case of low prices of EUAs), which is not a significant barrier to the development of low-carbon projects in Poland. The British system gains in importance against the solutions implemented in Germany also due to technological neutrality – it was not decided to abandon nuclear power early.

Therefore, it can be concluded that a prerequisite for efficient energy support in order to achieve a sustainable sector transition in the shortest possible time is a consistent placement of the entire regulatory environment around one objective, which should be a deep reduction of emissions in the electricity generation segment. This should be achieved through the use of complementary tools such as price mechanisms and support schemes for zero-emission technologies. Support mechanisms for conventional technologies should only be used in exceptional cases and temporarily in situations where there is a real hazard to the security of the stability of the energy system and there is no time to fully implement long-term investments in zero-emission solutions.

> When comparing the energy transition models, the Polish power support system can be assessed as cost-ineffective

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