

Financing Energy Transition in Poland: Possible Contribution of EU Funds

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Abstract

There is a general agreement that the energy transition is necessary on a global scale to avert the threat of a climate catastrophe and that it is very costly. In the EU, this transition is supported by funds under the Multilateral Financial Framework and the New Generation EU Facility. The purpose of the paper is to identify EU financial instruments available for Poland to support the energy transformation, to estimate their scale and assess chances to use these funds. The research methods applied are a critical review of Polish and EU documents and methods of statistical analysis. Against the background of European Green Deal strategy, the author identifies EU funds available for Poland for low emission transition and estimates their size. The paper also addresses the EU institutions' allegations of violating the EU law by Poland.

Main conclusions are as follows. The huge EU support for energy transition is at risk, due to Poland's refusal to comply with the EU law, as assessed by Commission and the Court of Justice of the EU. This situation creates a double cost for Poland: of non-used EU money and of high penalties for the rejection of the CJEU orders. Costs of the energy transformation are inevitable and must be incurred in Poland not only due to the adaptation to the requirements of the EGD, but also due to the fact that a large part of the Polish energy sector is old and will require replacement in any case. Moreover, Polish products may be denied access to EU market due to non-compliance with EU environmental standards. The EU funds should be a good opportunity to move away from coal and develop new eco-friendly industries. Without energy transformation in Poland, the EU results of climate protection policy will be limited, as the country is one of the biggest GHG emitters.

KEYWORDS: EU climate policy, energy transition, EU funds for Poland, greenhouse gas emissions, National Recovery Plan.

For many years the EU has been conducting policy addressing climate protection which involves quantitative commitments to reduce GHG emissions. As the EU Member, Poland is obliged to comply with these commitments. GHG emissions reduction is necessary in order to avoid climate catastrophe. Poland belongs to the biggest air polluters in the EU. Due to this fact, the EU results of climate protection policy will be limited without energy transformation in Poland. The main reasons for high GHG emissions are high dependence of the electricity and heat generation on coal, one of the most CO₂-emitting fuels; low energy efficiency and low share of renewable energy sources. Huge investments are necessary in Poland and in other EU Members to meet the EU climate goals. In order to support the costly process of energy transformation,¹ the EU has

¹ The energy transformation (transition) involves shifting the energy sector from a system based on fossil fuels (oil, gas and coal) to one dominated by clean, renewable energy. The main instruments to achieve this goal are: cutting radically emissions, investing in green technologies and renewable energy sources, energy storage and improving the energy efficiency of the economies.

In this context it is good to notice that most experts and the European Commission argue that the benefits of implementing the EU's climate strategy will be much higher than the costs. This opinion is not shared by all analysts. Tol (2021) argues that it is not true and the European Commission did not provide a full cost-benefit analysis when promoting the strategy. In his opinion, the costs will far exceed the benefits: the total cost of GHG emission reduction could be 3% or more of GDP and the benefits - only 0.3% of GDP).

Introduction



introduced a number of instruments, including the financial aid. Funds for Poland are at risk due to the EU's reservations regarding compliance with EU law in Poland.

Research questions are: (a) How much money can Poland get from the EU funds to implement the energy transformation, in view of its very high cost; (b) Why there is a risk that Poland will not get the EU support?; (c) What is the cost of not receiving the EU funds? The objectives of this paper are to identify EU financial instruments available to Poland to support the energy transformation, to estimate their scale and assess the chances to use these funds. The thesis is that the key condition for country's energy transformation is not so much the availability of funding but compliance with EU laws. The cost of Poland's noncompliance with EU laws includes unused EU funds and penalties imposed on Poland by the Court of Justice of the EU. A precondition for gaining access to EU funds is the introduction of appropriate changes to Polish law, including the provisions governing the judicial system.

The paper is organised as follows. It starts with a short analysis of Poland's position in the EU with regard to greenhouse gas (GHG) emissions, in order to assess the efforts needed to reduce GHG emissions in line with the EU laws and ambitions. This Section is followed by a brief overview of EU goals within the European Green Deal strategy and Poland's approach to this strategy. Next, Poland's financial needs related to green transformation are presented, as calculated by the Government and academia. The main Section is author's estimation on EU funds available for Poland for low emission energy transition. This analysis is accompanied by a brief history of Poland-EU disputes regarding the rule of law enforcement in Poland. Only financial implications of those disputes have been addressed, and legal merits have been omitted. The paper ends with conclusions.

In order to make reliable comparisons and conclusions, the statistical data on available EU funds is presented in 2018 prices, unless otherwise indicated. The main source of data is official Poland's and EU's documents and laws, as well as statistics. The research methods applied are a critical review of Polish and EU documents as well as methods of statistical analysis.

Poland's share in the eu greenhouse gas (GHG) emissions

In all EU countries, the total emissions have been decreasing gradually in recent years, although at different rates across countries and sectors of the economy. In 1990-2020, EU-27 domestic greenhouse gas (GHG) emissions (total GHG emissions, excluding land use, land use change and forestry - LULUCF², including international aviation, in CO₂ equivalent) were down by 31%. The main factor of this positive trend in all countries was first of all the decline of energy-inefficient heavy industry, and in 2020 - COVID-19 pandemic and related economic recession. In Members which joined the EU in 2004 and later, an additional important determinant was the deep overall restructuring of the economy in the late 1980s and early 1990s. The decrease of GHG emissions was quite big also in Poland: minus 21% in 1990-2020 (mainly in the energy sector), although in the transport (especially road transport) and building sectors, emissions increased drastically: by more than 3 times while in the whole EU-28 – only by 20% (European Commission, 2021a, p. 40; European Commission, 2020, p. 41).

Despite the overall reduction of pollution, Poland is still a country with one of the highest levels of GHG emissions. In 2020, the country accounted for 11% of total EU emissions. Only a few countries recorded a higher share in pollution: Germany (22%), France and Italy (both countries – 12%), but all those economies were much larger than the Polish one. In terms of per capita emissions, Poland occupied 4th place from the last, after Luxembourg, Ireland and Czechia (the lowest emissions were in Malta and Sweden). As regards the greenhouse gas emissions intensity (i.e. the ratio between emissions and GDP), the situation was even worse: in 2020 Poland occupied the 2nd place in the UE (after Bulgaria and before Czechia and Romania), (European Commission, 2021a, pp. 40-42).

² LULUCF means emissions and removals from the land use, land use change and forestry sector.

A major contributor to global warming are CO₂ emissions, accounting for 79% of all EU greenhouse gas emissions in 2019 (in all NACE sectors) excluding LULUCF. In Poland, the corresponding share was 81% (European Environmental Agency, 2021, p. 67). One of the most CO₂-emitting fuels used to generate electricity, is coal, especially lignite. Consequently, coal is responsible for less than a fifth of the electricity and heat generated in the EU, but for half of the emissions from these sectors. In Poland, the share of coal (hard coal and lignite) in domestic gross electricity production in 2020 was the highest in the EU (more than 83%). In the EU on average, coal and lignite supplied 37% of Europe's electricity in 2020, much less than in Poland (Redl et al., 2021, p. 15). Coal (hard) also plays an important role in producing heat in Poland (76% of this production in 2019 and only 6-7% from renewables). At the same time, coal played the highest role in energy supply in Poland - 44%, while in the next country on the list - Czechia - 32% and in the EU average was 10% (EU-28, 2019). Poland has significant extraction of hard coal: 94% of EU extraction in 2019 (Zachmann et al., 2021, pp. 27-30). Thus, Poland is a country which contributes relatively very much to the EU pollution statistics. In this situation, a huge challenge for Poland is to reduce, and even more, to eliminate, the very high dependence of electricity generation and heat production on coal.

Renewables (mostly wind and solar) together supplied 38% of EU's 27 electricity in 2020, for the first time exceeding fossil-fired generation whose share - as mentioned above - was 37%. In Poland, the respective share was only 17%, whereas Czechia and Hungary recorded even lower shares (12% and 15% respectively). Poland and the Czech Republic are the only two countries with more than four times the amount of fossil generation as renewables generation.³ This situation confirms that Poland's transition from coal to clean energy sources will be very long.

In December 2019, the newly nominated Commission presented the European Green Deal (EGD) concept. It provided for more ambitious goals of climate protection (faster reduction of GHG emissions and confirmation of the 2018 goal to achieve climate neutrality by 2050), (European Commission, 2019, p. 4). In the next years, several efforts were undertaken by the Commission to speed up the transition towards lower emission economy and to adopt legal measures necessary for efficient achievement of climate policy goals. In June 2021 the European Climate Law was adopted (Regulation (EU) 2021/1119). It made binding both, the new target (GHG emissions reduction of at least 55% by 2030) and the goal of reaching climate neutrality by 2050 (European Commission, 2021b, p. 4). The law aims to ensure that all EU policies contribute to this goal and that all sectors of the economy and society play their part. On 14 July 2021 the European Commission presented a **series of legislative proposals** to achieve the 2030 climate target (the so called 'Fit for 55' package⁴). The earlier analysis of the situation revealed, according to the Commission, that the existing goals and respective measures were not bold enough to ensure achieving of climate neutrality by 2050. As the energy sector accounts for 75% of the EU's greenhouse gas emissions,⁵ the new proposals mostly cover areas related to energy production and consumption, including inter alia renewables, energy efficiency, land use, energy taxation, buildings, transport. Regulatory proposals are accompanied by various financial instruments (see Section 4).

Within 'Fit for 55' package, the main new goals are as follows:⁶

- a to reduce by 2030 the GHG emissions by 55%, and not by 40% , compared to 1990 levels;
- b to increase the current EU-level target for energy efficiency from 32.5% to 36% for final, and 39% for primary energy consumption;

³ At the same time, Austria and Denmark generated, respectively, 79% and 78% of its electricity from wind and solar in 2020, Redl et al., 2021, p. 15.

⁴ The name of the 'Fit for 55' package is explained by the 2030 goal of GHG emission reduction of at least 55%.

⁵ https://ec.europa.eu/commission/presscorner/detail/en/QANDA_21_3544.

⁶ <https://www.consilium.europa.eu/en/policies/green-deal/eu-plan-for-a-green-transition/>.

- c to increase the current EU-level target of at least 32% of renewable energy sources (RES) in the overall energy mix to at least 40% by 2030.

Poland's energy policy goals are more modest (Energy Policy, 2021, pp. 3 and 7):

- a reduction of GHG emissions by 2030 by 30% compared to 1990;
- b energy efficiency increase: a target is 23% reduction in primary energy consumption in relation to 2007 forecasts.
- c the share of RES in gross final energy consumption should be at least 23%; in that - not less than 32% in power industry (mainly wind energy and solar photovoltaic), and at least 28% in heating sector, 14% in transport (with a strong contribution from electromobility).

A simple comparison reveals that Polish climate goals are insufficient to achieve the EU target: reduction in GHG emissions by 55% by 2030. Also, they put into question the achievement of climate neutrality by 2050. The year 2050 appears in Poland's Strategy only in connection with this goal for the whole Union.⁷

Poland's financial needs related to green transformation

The energy transition will incur considerable investment outlays. According to the recent government's estimates, in the years 2021-2040 they may reach approx. PLN 1,600 billion (EUR 348 billion at the exchange rate 4.6 PLN/EUR). This estimate assumes that the energy transition is carried out in a socially acceptable manner, while ensuring energy security, maintaining competitiveness of the economy and limiting environmental impact.⁸ In the fuel and energy sector, investments may amount to approx. PLN 867-890 billion (EUR 188 - 193 billion), mostly covering the electricity generation, in that from zero-emission sources, i.e. RES and nuclear power.⁹ Investments in the remaining non-energy sectors (industry, households, services, transport and agriculture) may reach approx. PLN 745 billion (EUR 162 billion). According to this document, around PLN 260 billion (EUR 56.5 billion) should come for these investments from the EU (Energy Strategy, 2021, pp. 4 and 87-93). According to The National Centre for Emissions Management (KOBiZE), the outlays in the energy sector in 2021-2050 can amount to approx. EUR 295 billion by 2050.¹⁰ In turn, the European Commission calculated that the energy transformation will cost Poland in the coming decade about EUR 240 billion (Buchholtz, Wróbel, 2021, p. 13). The authors of the McKinsey report came to a conclusion that in a business-as-usual scenario (with no decarbonization measures), Poland would need to spend EUR 1,200 billion to EUR 1,300 billion for the five sectors analysed (power, buildings, transport, industry, and agriculture) to replace infrastructure and add new assets. Full decarbonisation will require additional capital expenditures for mobility transformation and upgrading energy infrastructure and building stock.

⁷ Formally, Poland's targets are not inconsistent with EU goals. According to the Regulation (EU) 2021/1119, '[t]he Union-wide 2050 climate-neutrality objective should be pursued by all Member States collectively', although 'both the Union and the Member States contribute to the global response to climate change' (respectively, recitals 20 and 8). Thus, the 2021 Regulation on achieving climate neutrality, provides that the emission reduction target is binding collectively and not individually by each Member State. This can make achieving of the goal problematic.

⁸ These aspects seem to be very important, especially in less affluent EU countries. Radovanović et al. (2022) have correctly noticed that according to EU documents, the monitoring of the process of implementing climate strategy is based exclusively on environmentally related indicators and ignores other implications, including social and security aspects. These effects should also be taken into consideration. In particular, when implementing energy policy, the EU should not only aim at the elimination of fossil fuels, but also at ensuring the energy security of the Member States (Mišić, 2022).

⁹ Huge outlays result not only from the significant dependence of this sector on coal, but also from the fact that Poland's power-generation stock is ageing: according to the McKinsey report on 'Carbon-neutral Poland 2050', about two-thirds of Poland's installed coal capacity is more than 30 years old. With a possible life span of up to 60 years, those assets would need to be replaced by 2050. Moreover, new investments in power generation are necessary in order to meet the expected increase in demand for electricity (Engel et al., 2020, p. 10).

¹⁰ <https://www.kobize.pl/pl/article/aktualnosci-2021/id/1926/analiza-cape-polska-net-zero-2050>.

These needs were estimated at EUR 10-13 billion a year, or 1-2% of GDP, for the next 30 years (Engel et al., 2020, p. 10).¹¹

The costs anticipated by individual institutions vary considerably. It should be added that such costs are difficult to estimate. To a large extent, they will depend on which path of transformation (pace of change, target energy mix, etc.) Poland will choose - and this is still not clear. It is also difficult to predict new technologies that may appear soon and reduce the costs of transformation, the rate of increase in electricity demand (depending, among others, on the growth rate of the number of electric cars), etc.

In order to achieve the goals of the EGD, during the negotiations on the MFF 2021-2027, the European Council agreed that at least 30% would be allocated to these goals (the share is slightly different for specific programs).¹² A similar requirement applies when using the extraordinary New Generation EU (NGEU) Fund. NGEU worth EUR 750 billion (EUR 390 billion in grants and EUR 360 billion in loans) addresses the needs of post-pandemic recovery of EU economies. The idea underlying this program is that the post-pandemic economy will be different: more climate-friendly, better digitalised and more competitive. The biggest part of the NGEU is the Recovery and Resilience Facility (RRF, appr. 80%). Within this Facility Poland can count on EUR 23 billion in grants and appr. EUR 34 billion in loans (means for all purposes). 37% of RRF should be spent on climate protection and energy transition, it is EUR 8.5 billion minimum in the case of Poland.

Government's and author's own estimates differ by about EUR 14 billion. The main reasons for differences are: a/ Government's data has been calculated on the basis of current prices, while author's figures are expressed in 2018 prices; b/ Government's Strategy has taken into account all due money for energy transition within the NRP (grants and loans), while this author has assumed Poland using only grants; c/ both calculations consider slightly different items.

There are also two other studies estimating the size of funds that Poland can get from the EU for energy transformation, prepared by specialists from Energy Forum (Poland). According to the first analysis (Wróbel, 2020, p. 6), Poland can count on EUR 29 billion (only grants). The second study (Buchholtz, Wróbel, 2021, p. 9) has calculated these funds at approx. EUR 42.5 billion in 2021-2027. Both analyses, similar to the author's estimates, have only assumed funds from the EU budgets (the so called national envelopes). Wróbel (2020, p. 7) has added that EU funds have to be co-financed by Polish beneficiaries at EUR 21-51 billion, which would total EUR 50-80 billion for energy investments.

Huge funds should also be available from the sale of the ETS allowances. This type of revenue for low emission energy transition has already been mentioned as an instrument financing several existing and proposed new funds. It is worth adding that the vast majority of the ETS revenue goes nowadays to national budgets and 50% (at least) should be spent by Members on climate

¹¹ Rough estimates for the total investment needs in the world, including infrastructure are huge and range from USD 54 tn to USD 90 tn until 2050. However, Polzin and Sanders (2020) argue that such large sums are not a problem as technically, they can come from institutional investors and lenders such as pension funds, banks, etc. A real problem is to know how to use the available money. The authors, basing on their analysis, develop a matrix indicating the role and availability of different sources of finance, new intermediation channels in the energy transition and how these should be deployed. The issue of insufficient public funds and the need for higher private financing of climate policy has been addressed also by Mazzucato & Semieniuk (2020). The authors argue, on the basis of adopted estimators, that public investment can be highly effective at mobilizing private investment into renewables.

¹² In addition to proposing large financial resources, the Commission is promoting various legal provisions aimed at increasing banks' interest in lending, and at the same time reducing the related risks. Two examples are the adoption of the Sustainable Finance Strategy and establishing an EU taxonomy for sustainable activities, see more: Brühl V. (2021).

Table 1

EU funds potentially available for Poland for energy transition in 2021-2027 (EUR billion)¹³

EU Program	Poland's Government estimate (current prices)	Author's estimate (2018 prices)
1	2	3
Cohesion Policy ¹⁴ (MFF) EFRD Cohesion Fund	17.6	16.6 (30% of 42 = 12.6) (37% of 10.8 = 4.0)
Cohesion Policy React-EU (NGEU) ¹⁵	0.4	(25%) of 2 = 0.5
National Recovery Plan (within Recovery and Resilience Facility) ¹⁶	21.9 (in that, grants at 9.2)	8.5
Just Transition Fund ¹⁷ (MFF & NGEU)	3.4	3.5
Modernisation Fund ¹⁸ (ETS)	10.3 (together with funds from the sale of CO ₂ emission allowances)	6.1
Social Climate Fund (ETS and MFF) ¹⁹		4.2 (proposal)
Total	53.6	39.4

Note: Own estimates based on documents cited in footnotes for individual programs.

¹³ Column 1 presents the source of funding for the program (in brackets). Official estimates (column 2) come from Energy Policy (2021, p. 4), while author's estimates (column 3) base on official EU documents, listed for individual programs.

¹⁴ Regulation (EU) 2021/1058 (recital 6). The European Social Fund plus (ESF+) has not been taken into account as it does not directly contribute to climate protection. The total allocation for Poland within the cohesion policy in 2021-2027 is approx. EUR 66.8 billion.

¹⁵ Regulation (EU) 2020/2221. It is estimated that the allocation for Poland may amount to approx. EUR 2 billion. According to the Regulation, 25% of these funds will be allocated for the energy sector, which gives approx. EUR 0.4 billion.

¹⁶ The National Recovery Plan (NRP) is a basis to apply for EUR 23.1 billion (grants) and the EUR 34 billion loans within the EU Recovery and Resilience Facility. 37% of RFF, it is EUR 8.5 billion minimum should be spent on climate protection. Two components of the NRP are foreseen for achieving this goal: 1/ Green energy and reduction of energy intensity (EUR 5.7 billion in grants and EUR 8.6 billion in form of loans); 2/ Green, intelligent mobility (EUR 6.8 and 0.7 billion, respectively), see: <https://www.gov.pl/web/planodbudowy/czym-jest-kpo2>.

¹⁷ Regulation (EU) 2021/1056. JTF is a key instrument of a bigger Just Transition Mechanism. Two other elements are: a/ InvestEU 'Just Transition' scheme. It aims to mobilise more than EUR 372 billion of public and private investment through an EU budget guarantee of EUR 26.2 billion that backs the investment of implementing partners such as the European Investment Bank (EIB) Group and other financial institutions. The funds will be distributed on the basis of competition; b/ Public Sector Loan Facility which will combine EUR 1.5 billion of grants, financed from the EU budget (MFF), with EUR 10 billion of loans from the European Investment Bank (EIB), to mobilise between EUR 25 and EUR 30 billion of public investment. This instrument will exclusively target public entities. Both facilities have not been included into the estimate as they provide for loans, hard to predict now, see: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism/just-transition-funding-sources_en

¹⁸ The Modernisation Fund is offered to 10 poorest EU Members (which have joined the EU since 2004, without Cyprus, Malta and Slovenia) and is financed from ETS revenue. CIR 2020/1001. The final amount of the Modernisation Fund will depend on the number and prices of emission allowances in the period up to 2030. Poland will be its largest beneficiary, participating in 43.4% of the Fund. Its size in the period 2021-2030 has been estimated by the Commission at 14.0 billion, and Poland's share at 43.4%, it is EUR 6.1 billion, see: https://ec.europa.eu/clima/eu-action/funding-climate-action/modernisation-fund_pl.

¹⁹ The Social Climate Fund is intended to mitigate the effects of the planned expansion of the EU ETS to include buildings and transport. Poland would receive EUR 4.2 billion in support, it is 17.6% of the planned Fund at EUR 23.7 billion in 2025-2027. However, for this to happen, the proposal to extend the ETS to include these two sectors must be accepted by EU countries (European Commission, 2021b, Annex II).

protection and energy transition. It is big money. In 2021, Polish budget received from this source approx. EUR 5.4 billion. The expected extension of the ETS to new sectors (road transport and buildings) can provide additional funding for low-emission modernisation. The amount of this revenue will depend on several factors that cannot be foreseen at present (e.g. the price of ETS allowances). Still, according to experts, by 2030, Poland may obtain in total over EUR 82.3 billion from the EU ETS (assuming the price of emissions at EUR 70/t CO₂, (Buchholtz, Wróbel, 2021, pp. 12-13).²⁰ Thus, the EU ETS system will be the largest stable source of financing the energy transformation in Poland in this decade. Possible increases in allowances prices and the weak Polish Zloty will contribute to increasing the size of this pool.

All calculations have not included several other sources of EU funding for Poland's energy transition, and first of all from the Innovation Fund. In this case, any estimate is basically impossible.²¹ Also, potentially available loans have not been taken into account (within NRP and InvestEU - EIB loans), (see more footnote 14). In addition, some programs managed at the EU level, especially the program LIFE²², are allocated to environmental protection, which is the EU's funding instrument for the environment and climate actions. It is a part of the 'Natural Resources and Environment' spending area in the MFF 2021-2027 and has an earmarked budget of EUR 5.43 billion. To date, Poland's participation in this programme has been modest (total investment of EUR 34 million, of which EUR 17 million has been provided by the EU).²³ Certain funds are also available through the Horizon Europe (Research and Development program). The use of both of these programs requires participation in the EU competition procedures. So far, however, the involvement of Polish entities in both of these programs has been insignificant and it is difficult to expect a radical change in the coming years. Energy transition could also be supported by the EU Renewable Energy Financing Mechanism (REFM), operational since 2021, which is not compulsory for EU Members (CIR (EU) 2020/1294).²⁴ The REMF provides for an innovative approach to achieve its goals as it pools the voluntary contributions from EU countries and then allocates funding through a system of competitive tenders.²⁵

The EU funds dedicated to low emission transition and to environmental protection in Poland are significant. There is, however, a risk that part of this money will be lost by Poland. Access to these funds requires meeting a number of criteria, including compliance with EU law, and since 2019

Threats to the use of EU money related to Poland's (non) conformity with the EU law²⁶

²⁰ However, it should be remembered that the ETS system is not only about revenues for the state budget, but also about costs. High prices of emission allowances increase costs for the emitters of these emissions, and consequently also for consumers. Also, they reduce the competitiveness of products, especially carbon-intensive ones. Since the fast energy prices increases in 2021, Poland has started to blame the ETS system for these increases and requested rejecting of the 'Fit for 55' respective legislative proposals.

²¹ Innovation Fund is to be financed from the revenue coming from the extension of the emissions' allowances to road transport and buildings. It is estimated to amount to EUR 25 billion or more over 2020-2030, at a carbon price of EUR 50/t CO₂. Before this extension takes place, the Fund is financed from the unused earlier ETS allowances, https://ec.europa.eu/clima/eu-action/funding-climate-action/innovation-fund/policy-development_en.

²² LIFE – abbreviation comes from French: L'Instrument Financier pour l'Environnement, it is: funding instrument for the environment, created in 1992.

²³ https://cinea.ec.europa.eu/system/files/2021-06/Poland_Update_EN_Final_May21.pdf Last update: 31/05/21.

²⁴ CIR (EU) 2020/1294.

²⁵ The mechanism links countries that voluntarily pay into the mechanism (contributing countries) with countries that agree to have new projects built on their land (hosting countries). Thus, member states can either host a project, without needing to provide finance themselves, or contribute financially to a project located in a different member state. The effect should be new incentives for financing the EU renewable energy investments. State aid rules do not apply to the mechanism, neither for contributing nor for hosting countries, see more: <https://www.cliffordchance.com/briefings/2021/10/the-eu-renewable-energy-financing-mechanism---will-it-incentivise.html> and https://ec.europa.eu/regional_policy/en/newsroom/news/2021/11/24-11-2021-eur11-billion-react-eu-funds-allocation-now-available-for-2022.

²⁶ The other bottlenecks of the use of money, e.g. efficient management, have been omitted.

Poland has faced several allegations about violation of this law. From the point of view of negative financial implications for Poland, the most important issue is the EU request to liquidate the Disciplinary Chamber at the Supreme Court of Poland, created on the basis of 19 December 2019 Law. In the end of 2019, the Commission asked the CJEU for interim measures, complaining that the Chamber undermined the independence of Polish judges. Referring to this request, the CJEU called on Poland on 8 April 2020 to suspend immediately the laws relating to the Disciplinary Chamber (Case-791/19). This order was confirmed by the Court's Judgment of 15 July 2021. Poland refused to follow this ruling and was punished on 27 October 2021 with a penalty of EUR 1 million per day (Case C-204/21R). On 18 January 2022, the final date to pay the due fine (some EUR 68.5 million plus penalty interest) passed.²⁷ Poland refused to pay this money. In this situation, at the beginning of April 2022, the Commission started to deduct the accumulated penalties from transfers to Poland (in several tranches). In turn, eurosceptics in the Government declared to 'punish' Commission and reduce contributions to the EU budget.

Poland's failure to comply with the law is a big problem not only because of the high penalties, but even more because it prevents the use of the funds under the NGEU and MFF. At the beginning of May 2021 the Polish Government submitted to the Commission the National Recovery Plan (NRP, to be financed within the Recovery and Resilience Fund, the biggest part of the NGEU). This Plan had to be accepted by the Council at the Commission's proposal as a legal basis of the use of huge money for post-COVID-19 recovery of EU economies, including transition to low emission economies.²⁸ The Plan has not been accepted by EU institutions till the end of April 2022, depriving the economy of big support. The reason has been Commission's allegations of violation of the rule of law, including the failure to liquidate the Disciplinary Chamber, in accordance with the above mentioned Judgment of the CJEU of 15 July 2021. On 16 February 2022, the Commission obtained a solid legal basis to use the violation of the law by any EU member to limit financial support, both from the multiannual budget (MFF), and under the NGEU. On this day, the CJEU dismissed the requests of Poland and Hungary submitted on 11 March 2021²⁹ to the CJEU to annul the so called conditionality Regulation of 2020 as non-consistent with EU (CASES C-157/21 Poland v Parliament and Council and C-156/21 Hungary v Parliament and Council). This order made receiving funding from the EU budget a subject for EU Member States to the respect of rule of law as defined in the conditionality Regulation (Regulation (EU, Euratom) 2020/2092).³⁰ The Regulation allows the suspension of payments from the EU budget and NGEU in cases when breaches of the rule of law principles in Member States affect or risk affecting the EU financial interests.

Among other legal disputes between Poland and EU institutions, important from financial point of view, was the 21 May 2021 order of the CJEU calling on Poland to introduce interim measure and stop lignite extraction activities at the Turów mine on the border with the Czech Republic (Case C-121/21 R). This was the Court's decision in response to the complaint submitted by Czechia in February 2021.³¹ As Poland refused to implement this measure, the CJEU, by its order of 20 September 2021 imposed a daily penalty payment of EUR 0.5 million on Poland. The coun-

²⁷ <https://www.reuters.com/world/europe/poland-gets-formal-eu-demand-pay-fines-over-judicial-regime-2022-01-20/>.

²⁸ National Recovery and Resilience Plans have to outline how a country intends to spend money in post-pandemic recovering funding, before the money can be released.

²⁹ <https://www.politico.eu/article/top-court-decide-rule-of-law-funding-link-february-16/>.

³⁰ Let's notice that this law is different from the European Rule of Law mechanism which provides a process for an annual dialogue between the Commission, the Council and the European Parliament together with Member States as well as national parliaments, civil society and other stakeholders on the rule of law, see: https://ec.europa.eu/info/policies/justice-and-fundamental-rights/upholding-rule-law/rule-law/rule-law-mechanism_en.

³¹ The Czech government claimed that the mine drains groundwater from Czech villages and causes pollution, see: <https://www.ceje.ch/fr/actualites/energie-et-environnement/2021/10/daily-penalty-payment-imposed-poland-non-compliance-interim-measures-activities-turow-coal-mine/>.

try refused to pay the fine, and it was only on 3 February 2022 that the understanding between Poland and the Czech Republic was achieved. In total, from the moment of imposing the fines to the withdrawal of the Czechia's complaint from the CJEU, the penalty was calculated in the amount of EUR 68.5 million. This sum has been increasing by penalty interest, as Poland continues to delay the performance of its obligations. In this situation, the Commission also decided to withhold due money in funds intended for Poland from the EU budget.

By the beginning of April 2022, the European Commission has deducted over EUR 30 million from transfers to Poland in order to cover unpaid fines (from two programmes under cohesion policy). In total, for failing to comply with the Court of Justice of the EU ruling to suspend operations at a coal mine and for failing to close the Disciplinary Chamber for judges, Poland owes over EUR 200 million in unpaid fines (EUR 68,5 million for Turów mine and EUR 155 million for Disciplinary Chamber).³² This number is growing EUR 1 million every day due to the unsolved dispute over this Chamber, as well as due to the cost of penalty interest in both cases. The Ministry of Finance declared that missing funds will be replaced from Poland's state budget, so that no beneficiaries of the programmes will be affected. Let us add, that the Commission also requests Poland to eliminate several other breaches of EU law, the result being the escalation of conflict over Poland's compatibility with the EU laws.

There is no doubt that the cost of energy transformation in Poland will be huge. EU money can be a significant contribution to this transition. The National Recovery Plan and other targeted funds will not solve all of Poland's economic and energy problems, but they can substantially help. The estimates presented above suggest that Poland can count on approx. EUR 40 billion (in 2018 prices) till 2027. The final amount of this money might be even higher, mostly due to the reform of Emission Trading System, as well as cheap loans available for energy transformation (within the NGEU and other programs). Moreover, additional EU financing can come from the new facilities that have been started only recently (e.g. the Renewable Energy Financing Mechanism), the scale of which is difficult to estimate now.

Despite the enormous financial offer from the EU funds, it may turn out that Poland will not be able to use these funds. This risk is due to Poland's refusal to ensure compliance with the EU law, as assessed by the Commission and the CJEU. For this reason, large amounts of NRP in particular are at risk. A factor that escalates the controversy and strengthens the threats to obtaining EU funds is Poland's refusal to pay penalties imposed by the CJEU. In this situation, the conclusion is that the key condition for country's energy transformation is not so much the availability of funding but meeting the EU laws. In particular, it is about the (non)compliance of Polish energy policy with the goals of the EGD and the (non)implementation of CJEU judgments. This situation creates a double cost for Poland: one resulting from the unused EU money (in particular within the NGEU), and the other one consisting in very high penalties for failure to implement the CJEU rulings. In both cases, it is a waste of public money.

The costs of the energy transformation in Poland must be incurred in any case, not only due to the adaptation to the requirements of the EGD, but also due to the fact that a large part of Polish energy sector is old and will require replacement in the near future. Moreover, Polish companies may be denied access to EU funds because they will not fit EU environmental standards based on 'clean' energy. Also, delaying energy transition may cause in the next few years that some Polish products cannot be offered on the Single European Market due to the non-compliance with the pollution emission standards and competitive disadvantage because of the growing cost of carbon. The first step in this direction has been already done. The taxonomy rules have been adopted by the EU. They define which types of economic activities are consistent with the requirements of

Conclusions

³² <https://notesfrompoland.com/2022/04/07/eu-deducts-e30-million-from-polands-funds-to-cover-unpaid-fines/>.

sustainable growth and allow producers to apply for EU funds. The general Taxonomy Regulation, which is a part of the European Green Deal, was adopted in 2020 (Regulation (EU) 2020/852). It is a tool to help companies and investors make sustainable investment decisions. There is also a discussion on the introduction of mandatory information on the content of carbon footprint on product packaging. The importance of energy transformation in Poland also results from the fact that without such a change, the EU results of climate protection policy will be limited as Poland is one of the biggest greenhouse gas emitters in Europe.

Limiting the emission of pollutants and improving the efficiency of the energy sector also depends on how the available funds will be spent. The general condition for transferring the funds to Member States is to undertake investments which will not only bring quick but also lasting effects. They should help stop global warming, improve air quality and increase energy security. The underlying assumption of all investments addressing climate problems and financed from the EU funds is that the post-pandemic recovery must not be based on obsolete pre-pandemic technologies polluting the environment. The huge EU money should be a good opportunity to shift the Polish energy sector to the low-emission (first of all low-carbon) track and develop new, more competitive eco-industries and eco-services (installations for solar and wind energy, their servicing, etc). Without using this opportunity Poland will not be able to cope with the costs of EU energy policy and with domestic challenges of the energy sector alone. These costs include not only outlays for changing the outdated coal infrastructure, increasing energy prices, adversely affecting price competitiveness of Polish products and budgets of all actors (households, companies, public utilities etc.) for heating and electricity, but also the costs of treating the consequences of polluted air (many diseases).

Improving relations with the EU is essential for Poland to gain access to large EU funds for modernisation of the energy sector. The new geopolitical and economic situation following the Russian invasion in Ukraine seems to modify the positions of the EU institutions and the Polish Government. National Recovery Plan, the huge source of EU funding, has to be approved by the Council by qualified majority on Commission's proposal. In the end of April 2022, both Poland and the Commission seem to be close to achieve a compromise on unlocking funding under the NRP for Poland. However, even when the funds for Poland are unlocked, this does not mean that money will be automatically transferred to Polish economy. First, milestones and targets indicated in the NRP must be achieved and they will be financed first from national resources. Only their approval will allow for reimbursement of incurred expenses. A big challenge for Poland will be the spending of funds within due (short) period. The funds in question have to be allocated until 31 December 2023, and until the end of 2026, payments shall be made (Regulation (EU) 2021/241).

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