

CLIMATE AMBITION BEYOND EMISSION NUMBERS

**Taking stock of progress by looking inside
countries and sectors**

POLAND

Maciej Bukowski, Krzysztof Kobyłka, Zofia Wetmańska

SEPTEMBER 2021

Copyright © 2021 IDDRI

The Institute for Sustainable Development and International Relations (IDDRI) encourages the reproduction and public communication of its copyright materials, with proper credit (bibliographical reference and/or corresponding URL), for personal, corporate or public policy research, or educational purposes. However, IDDRI's copyrighted materials are not for commercial use or dissemination (print or electronic). Unless expressly stated otherwise, the findings, interpretations and conclusions expressed in this document are those of the various authors and do not necessarily represent those of IDDRI's board.

Citation

Maciej Bukowski, Krzysztof Kobyłka, Zofia Wetmańska (2021). *Climate ambition beyond emission numbers, Taking stock of progress by looking inside countries and sectors, Poland*. Deep Decarbonization Pathways (DDP) Initiative-IDDRI. Paris.

Contact

Henri Waisman, henri.waisman@iddri.org

The report is available online:

https://ddpinitiative.org/wp-content/pdf/DDP_AmbitionReport_ZAF.pdf

Financial support from

The report "Climate Ambition Beyond Emission Numbers" is made possible thanks to an array of projects supporting in-country capacity on climate mitigation research across the targeted geographies. It is also financially supported by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) as part of the "Climate Action After Paris" project (nr. 18_I_326) and the French government as part of the programme "investissements d'avenir" under the reference ANR-10- LABX-01.



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

Production: IDDRI.

Editing: Marta Torres Gunfaus, Anna Pérez Català, Lola Vallejo, Henri Waisman.

Layout: Ivan Pharabod.

CLIMATE AMBITION BEYOND EMISSION NUMBERS

Taking stock of progress by looking inside countries and sectors

Maciej Bukowski, Krzysztof Kobyłka, Zofia Wetmańska (WiseEuropa)

<i>How is this document relevant to the Global Stocktake?</i>	2
<i>Foreword</i>	4
Poland: Climate Ambition Since The Paris Agreement	5
<i>Domestic discourse</i>	5
<i>National governance</i>	7
<i>Actions and policies</i>	9

Disclaimer

The results presented in this report are outputs of the academic research conducted under the DDP BIICS project as per the contractual agreement. The academic work does not in any way represent our considered opinion for climate negotiations and also does not reflect the official policy or position of the Government of Poland.

How is this document relevant to the Global Stocktake?

This document is part of a collective report that assesses the evolution of climate ambition in 26 countries and 3 hard-to-abate sectors through a granular and context-specific analysis of trends and progress of national and sectoral transformations.¹ This approach allows identifying what hinders and spurs action in countries and sectors, and understanding the conditions that can support enhanced ambition, which could be political, social, economic, governance.

These insights are directly relevant to four overarching functions of the Global Stocktake in support of its desired outcome, i.e. "to inform Parties in updating and enhancing, in a nationally determined manner, their actions and support in accordance with the provisions of the Paris Agreement, as well as enhancing international cooperation for climate action" (Article 14.3 of the Paris Agreement):

- Create the conditions for an open and constructive conversation on global cooperation (on e.g., technology, trade, finance, etc.), based on an in-depth understanding of the international enablers of enhanced country ambition.
- Organize a process for knowledge sharing and collective learning, based on concrete examples of actions already in place or being discussed, including best practices.
- Create space for open dialogues across different stakeholders to support better coordination of actions, based on a detailed understanding of the levers to be activated to enhance ambition in national and sectoral transitions
- Facilitate ownership by decision-makers of the climate challenge and the risks and opportunities of the low-emission and resilient transition, based on context-specific and granular analysis of barriers and enablers.

More specifically, the collective report in general – and this document in particular – can contribute to address some of the key guiding questions for the Global Stocktake², notably:

- What actions have been taken to increase the ability to adapt to the adverse impacts of climate change and foster the climate resilience of people, livelihoods, and ecosystem? To what extent have national adaptation plans and related efforts contributed to these actions (Decision 19/CMA.1, paragraph 36(c))?
- How adequate and effective are current adaptation efforts and support provided for adaptation (Article 7.14 (c) Paris Agreement)?

¹ The full report « Climate ambition beyond emission numbers - Taking stock of progress by looking inside countries and sectors" can be found at: <https://www.iddri.org/en/publications-and-events/report/climate-ambition-beyond-emission-numbers-taking-stock-progress>

² Draft Guiding Questions for the Technical Assessment of GST1 (version 20th October 2021), available at: https://unfccc.int/sites/default/files/resource/Draft%20GST1_TA%20Guiding%20Questions.pdf

- What are the barriers and challenges, including finance, technology development and transfer and capacity-building gaps, faced by developing countries?
- What is the collective progress made towards achieving the long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions referred in Article 10.1 of the Paris Agreement? What is the state of cooperative action on technology development and transfer?
- What progress been made on enhancing the capacity of developing country Parties to implement the Paris Agreement (Article 11.3 Paris Agreement)?
- To achieve the purpose and long-term goals of the Paris Agreement (mitigation, adaptation, and finance flows and means of implementation, as well as loss and damage, response measures), in the light of equity and the best available science, taking into account the contextual matters in the preambular paragraphs of the Paris Agreement:
 - What are the good practices, barriers and challenges for enhanced action?
 - What is needed to make finance flows consistent with a pathway towards low GHG emissions and climate-resilient development?
 - What are the needs of developing countries related to the ambitious implementation of the Paris Agreement?
- What is needed to enhance national level action and support, as well as to enhance international cooperation for climate action, including in the short term?
- What is the collective progress made by non-Party stakeholders, including indigenous peoples and local communities, to achieve the purpose and long-term goals of the Paris Agreement, and what are the impacts, good practices, potential opportunities, barriers and challenges (Decision 19/CMA.1, paras 36(g) and 37(i))?

Foreword

Henri Waisman, Marta Torres Gunfaus, Anna Perez Catala, IDDRI.

Country commitments as reflected in enhanced Nationally Determined Contributions submitted to the UNFCCC are insufficient to put the world on track to achieve the collective objective of the Paris Agreement to hold temperature increase below 2 °C or 1.5 °C above pre-industrial levels. Furthermore, concrete policies and actions adopted by countries on the ground are often not sufficient to achieve these NDC targets. These conclusions highlight the need to increase ambition and to provide convincing evidence to accelerate action in the immediate and short term to give effect to this ambition. Yet these assessments are not sufficient to effectively guide the progressive increase of ambition, as organized by the cyclical process of the Paris Agreement.

APPROACH

With this imperative in mind, this report adopts a different, complementary, perspective on climate ambition. It seeks to open the box of emission pathways, by considering multiple dimensions of the conditions that will make these pathways possible. These are technical, economic, political, social and governance considerations in need of attention to enable the required far-reaching and systemic transformation towards the long-term goal. On the one hand, the revision of emission targets needs to be directed by an assessment of how drivers of emissions should change to trigger transformation. On the other hand, converting emissions' targets into pertinent concrete implementation requires well-designed policy packages and investment plans that are also informed by a clear and detailed understanding of the starting point, priorities and interplays between the available levers of transformation.

This bottom-up assessment aims at contributing to the process of collective learning in support of the progressive increase of collective ambition, as inserted at the core of the Paris Agreement paradigm. Approaching climate ambition through the lens of underlying transformations calls for reflecting the heterogeneous nature and the multi-faceted aspects

of transitions in different sectors and countries. This forces a move away from a purely global perspective and adopts a more granular approach based on country and individual sector perspectives. Thus, the report explores trends and progress on these transformations, as locally observed over the past years, notably since the Paris Agreement. This 'backwards looking' approach can help identify where developments are going in the right direction, where they should be accelerated and where major tensions remain that should be addressed as a priority to avoid undermining the transition. The picture of the state of the ambition discussion, firmly embedded in the country and sectoral realities, can provide means for reflection and action within the international climate community, particularly to inform focus areas for advancing the collective ambition agenda.

STRUCTURE OF THE REPORT

This country report describes the recent evolutions of domestic discourses on climate ambition, national climate policy, national governance and concrete policies and actions with a significant effect on GHG emissions. The chapter highlights a selection of striking and structurally important elements to advance the transformation towards carbon neutrality from an in-country perspective.

This report is part of a full series of 26 country chapters and three sectoral chapters. The full report includes a "summary for decision-makers" to present 10 cross-cutting messages emerging from the country and sector analysis, as a guide to the selection of priorities for collective action in the post-COP26 period.

You will find the full report at: https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/Rapport/DDP_beyond%20emissions%20report.pdf



CLIMATE AMBITION SINCE THE PARIS AGREEMENT

This chapter has been written thanks to the support of the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

DOMESTIC DISCOURSE

A broader reflection on Poland's climate action is a relatively recent phenomenon. Before 2010 the domestic discourse on climate change has been almost entirely dominated by the narrow circles of energy and climate experts whereas public opinion remained largely unaware of the problem. Later on, this picture started to change under the rising pressure of both external and internal factors such as the EU's 2020 climate targets, rising CO₂ prices, deteriorating financial stance of Silesian coal mining as well as increasingly noticeable technological progress in the renewable sector.

The pivotal moment came in late 2015 as a combination of several independent factors. The newly-elected right-wing government led by Prime Minister Beata Szydło started to openly question versatile policy decisions undertaken between 2007 and 2015 by her centrists predecessors: Donald Tusk and Ewa Kopacz. This included climate and energy policy that started to be pictured – by government officials and public media – as not properly serving the national interests. Prime Minister openly proclaimed the coal mining and coal-power sectors as a future of the Polish economy (Money 2016), vocally advocating for

the development of the supercritical power block “C” in Ostrołęka and promising large scale investments in the new mining capacities in Silesia. This narrative was accompanied by the speeches and interviews of the newly elected President Andrzej Duda who on several occasions underlined that Poland has enough coal for at least 200 years and shouldn't neglect it as a valuable energy resource for the future (Polsat News 2016). The semi-climate-scepticism and hard pro-coal rhetoric of the government unavoidably pushed the opposition and liberal media towards a more progressive stance on energy and climate policy. The topic that used to be perceived as too technical and uninteresting for public opinion started to dominate the newspaper headlines and political speeches of the opposition leaders. This created favourable conditions for climate experts and environmental NGOs that – through private mass media - managed to significantly increase the public awareness of climate change and the costs of the traditional energy system not only for the future of the planet but also for more domestic problems like air pollution and public health.

The debate on air quality achieved a critical mass in 2017 reaching the level that couldn't be ignored by the new – relatively more progressive – Prime Minister Mateusz Morawiecki, resulting in a slight revision of the official policy course. The issue of air pollution has been listed as a governmental priority (Serwis RP 2018) and the central administration was forced to begin work – which is still ongoing – on the development and implementation of a comprehensive clean air policy package. This has led to the introduction of standards for coal-fired boilers and (relatively unambitious) solid fuel standards. New retrofitting and heat source replacement programmes for buildings have also been launched though so far with moderate success, as the programmes are scaling up slowly and are still not promoting deep retrofits in line with longer-term climate neutrality goals. Simultaneously, in 2018, COP24 in Katowice has put a spotlight on the topic of just the transition of the coal region. As coal mining has already been a highly politicised topic on the national level, the central government presented the idea rather as a tool to prolong the transformation of the coal sector, than as a strategic framework to support inclusive but prompt diversification of the Silesian economy. Despite this rhetoric, the central administration has been since then cooperating prag-

matically with the Silesian authorities and European Commission on the development of the pragmatic plan of regional socio-economic transformation with the help of EU funds. Since COP24 we can also observe the gradual evolution of the government position on coal transformation on the rhetorical and technical levels. The voices of politicians that openly question the sense of transition in the mining sector became less frequent whereas most prominent officials like Polish President Andrzej Duda changed their position entirely. Whereas during COP24 he portrayed himself as a defender of Polish coal mining (Cire 2018), in 2020 he underlined several times that the transformation of the mining sector is only part of a broader climate policy that cuts across many industries and the key to it is a just transition, implemented through social dialogue (Money 2020). Also during the recent parliamentary elections (2019), it became apparent that net-zero became a mainstream topic and all political parties from the centre and left have made their declarations regarding the need for Poland to achieve net-zero in 2050.

Since 2017 the increasing price of EU ETS and global transition away from fossil fuels, have proved that it is becoming increasingly more difficult to implement and/or finalise fossil fuel investments, with the Ostrołęka C being a perfect example of a stranded asset (Business Insider 2021). Non-surprisingly over the last couple of years, one could also observe the gradual evolution of the official narrative regarding decarbonization in the broad sense. The government traditionally highlighted the social and economic costs of transition, while disregarding the risks of maintaining the business as usual scenario, the benefits for the quality of life, and associated business opportunities. Costs and the scale of effort needed, have been used on numerous occasions to justify a low level of ambition when it comes to climate action. Notably, these arguments have been used to justify that Poland has not ratified the net-zero target at the national level, agreeing only a target set for the EU as a whole. At the same time industry stakeholders' interest in the growing market for low-carbon technologies and change in public opinion on climate crisis started to play a greater role in shaping the official position on decarbonization. The government stopped delaying the change as a whole focusing rather on subsidising green solutions

for the middle class and families (e.g. like EV or PV purchases, heating retrofit subsidies etc.), while still avoiding comprehensive measures which discourage pollution (e.g. taxation of coal for households). The government has also become much more open than before to discuss uptake and mainstreaming of new low-carbon technologies in the industry and power sectors. In particular, hydrogen and nuclear energy are being promoted as potential easy fixes for the country's dependence on coal, with CCUS technologies also regaining stakeholder interest, especially in the heavy industry.

Changes seen in the private sector are mostly driven by the international actors, who are transposing best practices from their headquarters. Not, surprisingly only very few actors have joined net-zero initiatives (e.g. just two organisations are members of the Race to Zero campaign). This may start changing soon, as domestic companies are also facing increasing pressure – from the EU regulations and market pressure – to decarbonise rapidly. For example, a Polish private energy company ZE PAK which is preparing to shut down its lignite assets has recently joined Power Past Coal Alliance. That discussion is however limited to experts, industry sector stakeholders and representatives of the selected public sector agencies leaving out of the conversation broader society.

NATIONAL GOVERNANCE

The last ten years represent a largely lost decade for climate policy in Poland. Public authorities for years have been struggling to prepare and implement a multiannual, cross-sectoral decarbonization framework. The major domestic strategic document for the power sector “Energy Policy of Poland until 2030” was adopted by the Council of Ministers on November 10, 2009. As all previous strategies in this sector, starting from 1995, it should have been revised and amended 5 years later i.e. in 2014, especially as its assumptions quickly diverged from the EU climate policy. In fact, it wasn't revised till February 2, 2021, when the government accepted the new “Energy Policy of Poland until 2040” (MCE 2021) that – although more progressive than its predecessor – once again presented decarbonization pathways visibly less ambitious than those of the EU and Poland's neighbours like Germany or Czechia. The same can be said about National Energy

and Climate Plan (NECP) for Poland that was prepared in several stages between 2018 and 2019. The initial version of the decarbonization pathway from this document was presented in 2019 and proved to be significantly below the EU goals for 2030 and not accommodating the general logic of the EU climate policy at this moment. Therefore the Plan had to be amended and the final version of the document was accepted by the government on December 18, 2019 (MSE 2019).

NECP – like PEP 2040 – accepts the general direction of the EU's climate and energy policy, acknowledging the need to diversify the national energy mix. At the same time, the decarbonization ambitions visible in the document follow the pattern of postponing most of the investment effort after 2030 that – in consequence – will lead to Poland to diverge further from the EU-wide ambition level in the 2020s, delaying significant restructuring of the energy system by about a decade. It is worth noticing that both documents abandon the cheapest available technological option of onshore wind power, promoting the slowly progressing nuclear programme as the key factor responsible for catching up with the decarbonization of energy systems in Western Europe. Even though nuclear energy is strongly supported by the government on the strategic level (Polish Nuclear Power Program) (MCE 2020) defining basic tasks to be performed by the national administration, investor, nuclear supervision and other entities participating in the investment was accepted by the Council of Ministers on January 28, 2014, and its updated version on October 2, 2020), the decisions on real investment had not yet been undertaken and the fulfilment of the PEP2040 and NECP promises that first Polish nuclear power plant will be connected to the grid in the early 2030s might be hard.

Currently, the government is working on the preparation of the Long-Term Climate Strategy (LTCS) until 2050 that – under Energy Union Governance Regulation – should be ready by the end of 2019. Already delayed, the document is expected to become the first Polish climate strategy that would fully take into account the challenges associated with the new EU's 2030 GHG emission reduction target and the 2050 net-zero perspective. Although the works were commissioned already in 2019 and

– according to the market knowledge – its text is already advanced, the ultimate publication date remains unknown. At the same time, many significant institutional changes have happened in recent years aimed at facilitating more coherent and swift policy in the future. In particular, the Ministry of Energy (MoE) was dissolved, while its responsibilities have been split between the Ministry of State Assets (MSA) and the Ministry of Climate and Environment (MCE). The MSA became responsible for state-owned companies, including the energy and mining sector, whereas the MCE took over the policy activities related to the development of a low-carbon economy in the broad sense taking over tasks previously in the domain of the Ministry of Development. It is currently leading several initiatives aimed at exploiting opportunities associated with the dynamic development of low-carbon markets focused on inter alia development of electromobility, hydrogen economy, etc. Unfortunately, all of these initiatives are still developed in isolation from the strategic transformation frameworks, treated rather as separate topics, than a part of a discussion on decarbonization pathways and desired shape of the future energy mix. MSA exercising control over state companies but also being influenced by them has a possibly greater impact on shaping the energy transformation than MCE. In particular, PEP2040 (prepared in MoE but officially presented by newly established MCE) included provisions that the final shape of the document will be determined once the results of negotiations between the government (led by the MSA) and mining unions, the so-called Social Contract (MSA 2021), become available. The agreement between the parties has been reached in April 2021. According to the detailed timeline provided in the Contract, the coal mining phase-out is to begin in 2021 and the last coal mine will be shut down in 2049. The agreement states that the liquidation process will be financed from public resources. Moreover, every unprofitable mine will be subsidized by the state until its closure. The document was revealed on April 28th and will be sent for approval to the European Commission, which is a prerequisite step for state aid programs. However, solutions included in the Agreement are not in line with the established EU state aid framework and as such are not likely to be approved by the EC.

Essentially the text of the contract is constructed to prolong the status quo, rather than approach the challenge of just transition strategically.

As experts, private sector stakeholders and other international actors await the publication of the Polish LTCS, some governmental agencies and ministries are introducing the net-zero perspective in their documents. In particular, the Long-term Building's Renovation Strategy (LTBR) (MoDLT 2021a) which has been recently prepared in the Ministry of Development, Labour and Technology and is scheduled to be accepted by the government in the third quarter, already accommodates the net-zero perspective for 2050. The same ministry has also been responsible for the preparation of the Polish Industrial Policy (published in June 2021) (MoDLT 2021b) which includes aspects related to the European Green Deal and – together with the MCE - coordinates the works on LTCS. At the same time, experts from the National Institute of Environmental Protection (supervised by the MCE) in June 2021 have presented decarbonization scenario for selected sectors within the 2050 horizon (NIEP 2021), delivering a second publicly available comprehensive net-zero study for Poland after McKinsey's report on "Carbon-neutral Poland 2050" that was published in 2020 (McKinsey 2020).

With so many actors being responsible for different fragments of the climate and energy policy, and with each of them having a slightly different vision for the development of a low-carbon economy it is unsurprising that the government struggles to develop a comprehensive economy-wide approach to decarbonization. The Polish government still does not seem to fully perceive climate policy as a key part of broader development strategy, where measures aimed at improving energy efficiency or reducing GHG emissions would represent an investment in new competitive advantages for the future. Treating climate policy as an external factor that merely influences development policy (but is not part of it) contributes to the low efficiency of adopted measures. At the same time however, climate governance is gradually improving which may – in this decade – transpose itself not only to the more ambitious strategic framework but also to much more efficient and stable implementation of the EU climate policy on the country level.

ACTIONS AND POLICIES

Decarbonization support systems supporting renewable development

The system of green certificates supporting the development of renewable electricity sources has been functioning in Poland since 2005. At the beginning of the last decade, it played a crucial role as green technologies were still relatively costly. Although the certificate system proved to be effective in delivering between 2013 and 2015 approx. 2.7 GW of new onshore wind capacities, political scepticism gradually increased, while prices of certificates were falling, eventually leading to the break in 2015 (Bukowski et. al. 2020). Moreover, in 2016, the regulatory changes were introduced by the new right-wing government, including the 10H rule, which prohibited the placing of wind turbines in the proximity of residential buildings (the Distance Law). Together with the phase-out of the green certificate system, the new law inhibited the development of onshore wind farms for several years. At the same time, the certificate system was replaced with RES auctions. Initially, the migration of existing facilities from the green certificate system to the new one was a priority. This approach eliminated most of the new wind investment on commercial principles between 2016 and 2018. The breakthrough came at the end of this period when the threat of Poland failing to meet its RES target for 2020 became an apparent incentive for the government to launch large-scale auctions for new capacities (Bukowski and Śniegocki, 2020). The results of the first auction demonstrated that onshore wind farms can generate electricity at significantly lower costs than the current market equilibrium contributing to the change of sentiment towards wind energy in the ruling majority. One of the results of this change is the long-awaited law on investments in offshore wind farms that entered into force in February 2021, introducing Contracts for Difference for new investments on the Baltic Sea. The support has been divided into two stages, the first one lasting until 2023, where contracts are awarded based on administrative decisions, and the second, based on competitive auctions, with the first auction planned for 2025. The system will be financed by the overarching RES fee which also covers other renewables support mechanisms. The liberalization of the Distance Law affecting onshore wind farms is also expected in 2021.

In the case of solar energy, there has been a dynamic increase in installed capacity over the last three years, in particular in the form of prosumer energy i.e. energy produced by the households or small to mid-size firms primarily for their own needs but also for the market. It happened thanks to favourable rules of billing electricity supplied to and collected from the grid and the government program “My Power” (Mój Prąd) introducing a simple subsidy mechanism for small scale PV installations in private houses. In addition, new prosumers could take advantage of the so-called thermo-modernization relief, which additionally increases the profitability of such investments. The government is currently preparing new regulations introducing the concept of the so-called virtual prosumer, allowing the connection of the electric bill with a power plant not located on the property. However, along with these regulations, there are also plans to reduce the benefits of the current billing rules of PV. The development of new solar capacities was so dynamic that Polish transmission grid operator started to show concerns about the technical stability and economic sustainability of the entire electricity system in Poland.

Nuclear programme

The success of GHG emissions reduction in PEP2040 to some extent relies on a very ambitious program for the development of nuclear power. To fulfil it, in 2021 the government presented the updated version of the nuclear power program that assumes the construction of six nuclear reactors till 2050, the first of which would be launched as early as 2033. Whilst nuclear power is likely to play a role in the process of the decarbonization of the economy before 2050, the declared timeline is very ambitious, given the lack of location, technology and appropriate regulations for the licensing, construction and operation of nuclear power plants. Choosing a technology provider will also involve a significant commitment in developing the know-how related to NPP construction, legal aspects, staff training, etc. but also possibly financial contribution. Lately, the government assured, that the choice of location is now in its final stage and it will be located by the sea. While there is still no specific government declaration on the technology choice, Westinghouse

is starting with FEED study on the development of a nuclear power program in Poland (PAP 2021) and EDF has re-opened its office in Warsaw intending to participate in Polish NPP (Forsal 2021).

Energy efficiency and individual heating

With respect to energy efficiency, most of the current efforts of the government are focused on the flagship program addressed to households with individual heat sources called "Clean Air".¹ It allows for the replacement of heat sources and thermal renovation of the buildings with the hope of vastly decreasing the air pollution in Poland before 2030. Initially, under the program, it was possible to subsidize the replacement of an ineffective solid fuel boiler with a more effective one (but still coal-based), which was not in line with the current European climate ambitions, and in the long run may lead to carbon lock-in in some households, especially those with low income and at risk of energy poverty, with further negative consequences such as higher energy prices. This year, changes were made that would not allow for the financing of coal-fired boilers from 2022. Substantial financial recourses were also allocated to the program within the National Recovery and Resilience Plan (MoDLT 2021c). At the same time, the major support for the promotion of energy efficiency measures in the industry remains unchanged for the last decade taking the form of the white certificates system issued by the President of the Energy Regulatory Office. Certificates serve as a confirmation for enterprises that implemented projects to reduce energy consumption and they may be traded on the Polish Power Exchange. The current version of rules of the certificate system was defined in the Energy Efficiency Act of May 20, 2016, that replaced the previous regulation from 2011.

Transport sector and hydrogen economy

In the transport sector, the government intervention may be divided into three areas. First covers the fiscal policy measures. In 2018, emission charge was introduced in a form of excise taxation levied on fuel (10 grosz/litre), the revenues of which are to be used to support electromobility and low-emission transpor-

tation. The scope of potential covers, among other things, production of biofuels, biomethane and hydrogen, compressed gas (CNG) and liquefied natural gas (LNG) refuelling stations and infrastructure for charging electric cars and buses. Some of the money will also go to research and development and education in the field of alternative fuels. The second pillar of Polish transport sector policy refers to the hydrogen economy. The government is finalizing work on the Polish Hydrogen Strategy, which is to be adopted in August 2021. The strategy envisions the initial stage of development based on grey hydrogen from natural gas and indicates the use of gas infrastructure. It also includes an ambitious target of 2 GW of electrolysers in 2030 which will produce 200 kt of hydrogen annually. The third element of government action in the transport sector is industrial policy. The government actively supports the development of the Polish electric car through SPV called Electro Mobility Poland² (EMP) that was established in 2016 by four state-owned energy companies: PGE, Enea, Tauron and Energa. Up to date the company has built two prototypes of cars called Izera and identified a site in Silesia for the construction of a factory. In April 2021 Minister of Climate, Mr Michał Kurtyka suggested that the State Treasury would inject capital into EMP to enable the construction of the first production facility that should initially produce 100 thousand cars per year and employ 2 thousand people in Jaworzno (Green News 2021). The government hopes that the investment will generate substantial employment in a whole value chain reaching even 15 000 people when the production of cars exceed 200 thousand per year. Although the project is perceived by the market as extremely risky, the development of e-mobility and attracting investments to support further industrialization of the Polish economy remains a key priority for the government as a whole. It is worth noting that the e-mobility industry is actively developing in Poland beyond the Polish electric car project, including both domestic producers (e.g. e-buses, charging stations) and foreign direct investments (e.g. EV battery production). In most cases, this is supported by a broader policy framework, such as the availability of the EU funds for clean infrastructure investments or national FDI support policies.

¹ <https://czystepowietrze.gov.pl/>

² <https://electromobilitypoland.pl/en/home-2/>

REFERENCES

- Bukowski M. et al. (2020), *Alternating Current: Landscape of climate finance in the Polish energy sector*, WiseEuropa, Warsaw. <https://wise-europa.eu/en/2020/07/29/res-investments-in-poland-reach-record-high-in-2019-new-wiseeuropa-report/>
- Bukowski M., Śniegocki A., (2020), *Restart: how to break the deadlock in the Polish energy sector*, WiseEuropa, Warsaw. <https://wise-europa.eu/en/2020/09/10/restart-how-to-break-the-deadlock-in-the-polish-energy-sector-policy-brief/>
- Cire (2018), *Duda: nie pozwolę, by ktokolwiek zamordował polskie górnictwo*. <https://www.cire.pl/item,172629,1,0,0,0,0,duda-nie- pozwole-by-ktokolwiek-zamordowal-polskie-gornictwo-.html>
- Engel H. et al. McKinsey (2020), *Carbon-neutral Poland 2050*, McKinsey, Warsaw. <https://www.mckinsey.com/pl/our-insights/carbon-neutral-poland-2050>
- Forsal (2021), *Francuski EDF otwiera biuro w Warszawie. Będzie pracował nad ofertą ws. atomu*. <https://forsal.pl/biznes/energetyka/artykuly/8207870,elektrownia-atomowa-w-polsce-francuski-edf-otwiera-biuro-w-warszawie.html>
- MCE (2020), *The Polish Nuclear Power Programme 2020*, Ministry of Climate and Environment, Warsaw. <https://www.gov.pl/web/polski-atom/program-polskiej-energetyki-jadrowej-2020-r>
- MCE (2021), *Energy Policy of Poland until 2040*, Ministry of Climate and Environment, Warsaw. <https://www.gov.pl/web/klimat/polityka-energetyczna-polski>
- MoDLT (2021a), *Draft of Long-Term Building's Renovation Strategy*, Ministry of Development, Labour and Technology, Warsaw. <https://www.gov.pl/web/rozwoj-praca-technologie/dlugoterminowa-strategia-renowacji>
- MoDLT (2021b), *Polish Industrial Policy*, Ministry of Development, Labour and Technology, Warsaw. <https://www.gov.pl/web/rozwoj-praca-technologie/polityka-przemyslowa-polski>
- MoDLT (2021c), *Krajowy Plan Odbudowy*, Ministry of Development, Labour and Technology, Warsaw. <https://www.gov.pl/attachment/2572ae63-c981-4ea9-a734-689c429985cf>
- Money (2016), *Energetyka w Polsce. Beata Szydło: węgiel na długo pozostanie podstawą*. <https://www.money.pl/gospodarka/wiadomosci/artykul/energetyka-w-polsce-beata-szydlo-wegiel-na,140,0,2024844.html>
- Money (2020), *Prezydent chce mieć wpływ. Ujawnia z kim rozmawiał o górnictwie*. <https://www.money.pl/gospodarka/gornictwo-prezydent-rozmawial-z-piotrem-duda-o-zamykaniu-kopalni-6556799257488192a.html>
- MSA (2019), *National Energy and Climate Plan of Poland for the period of 2021-2030*, Ministry of State Assets, Warsaw. <https://www.gov.pl/web/aktywa-panstwowe/krajowy-plan-na-rzecz-energii-i-klimatu-na-lata-2021-2030-przekazany-do-ke>
- MSA (2021), *Umowa społeczna dla górnictwa podpisana*, Ministry of State Assets, Warsaw. <https://www.gov.pl/web/aktywa-panstwowe/umowa-spoeczna-dla-gornictwa-podpisana>
- NioEP (2021), *Polska Net-zero 2050*, National Institute of Environmental Protection, Warsaw. https://ios.edu.pl/wp-content/uploads/2021/07/CAKE_Mapa-drogowa-net-zero-dla-PL-1.pdf
- PAP (2021), *Kluczowy etap Westinghouse w rozwoju energetyki jądrowej w Polsce*, Polish Press Agency. <https://www.pap.pl/mediaroom/902229%2Ckluczowy-etap-westinghouse-w-rozwoju-energetyki-jadrowej-w-polsce.html>
- Polsat News (2016), «Nadchodzi czas poważnego zmierzania się z problemami górnictwa» - prezydent Duda na Śląsku. <https://www.polsatnews.pl/wiadomosc/2016-11-23/nadchodzi-czas-powaznego-zmierzenia-sie-z-problemami-gornictwa-prezydent-duda-na-slasku/>
- Rzędowska A., Green News (2021), *Polski samochód elektryczny powstanie za państwowe pieniądze. Stać nas?*, Green News. <https://www.green-news.pl/1725-polski-samochod-elektryczny-powstanie-za-polskie-pieniadze-stac-nas>
- Serwis RP (2018), *Premier Mateusz Morawiecki o rządowym programie termomodernizacji*. <https://www.gov.pl/web/premier/premier-mateusz-morawiecki-o-rzadowym-programie-termomodernizacji>
- Wąsowski M., Business Insider (2021), *Miało być pięknie, jest miliard strat. Tak politycy obiecywali nowy blok węglowy w Ostrołęce*, Business Insider. <https://businessinsider.com.pl/wiadomosci/blok-weglowy-ostroleka-c-to-miliard-zlotych-strat-i-niespelnione-obietnice-politykow/0s30cm0>

DDP

The DDP is an initiative of the Institute for Sustainable Development and International Relations (IDDRI). It aims to demonstrate how countries can transform their economies by 2050 to achieve global net zero emissions and national development priorities, consistently with the Paris Agreement.. The DDP initiative is a collaboration of leading research teams currently covering 36 countries. It originated as the Deep Decarbonization Pathways Project (DDPP), which analysed the deep decarbonization of energy systems in 16 countries prior to COP21 (deepdecarbonization.org). Analyses are carried out at the national scale, by national research teams. These analyses adopt a long-term time horizon to 2050 to reveal the necessary short-term conditions and actions to reach carbon neutrality in national contexts. They help governments and non-state actors make choices and contribute to in-country expertise and international scientific knowledge. The aim is to help governments and non-state actors make choices that put economies and societies on track to reach a carbon neutral world by the second half of the century. Finally, national research teams openly share their methods, modelling tools, data and the results of their analyses to share knowledge between partners in a very collaborative manner and to facilitate engagement with sectoral experts and decision-makers.

www.ddpinitiative.org

IDDRI

The Institute for Sustainable Development and International Relations (IDDRI) is an independent, not-for-profit policy research institute based in Paris. Its objective is to identify the conditions and propose tools to put sustainable development at the heart of international relations and public and private policies. IDDRI is also a multi-stakeholder dialogue platform and supports stakeholders in global governance debates on the major issues of common interest, such as actions to mitigate climate change, protect biodiversity, strengthen food security, and to manage urbanisation. The institute also participates in work to build development trajectories that are compatible with national priorities and the sustainable development goals.

www.iddri.org