



Assessment of PGE's transition plan

About PGE Group

PGE Group is the largest of the four state-owned Polish energy utilities, with 2023 sales revenues of EUR 21.1 billion. The Group consists of parent company PGE (Polska Grupa Energetyczna S.A.) and a multitude of subsidiaries. Activities are divided into 9 operating segments: Conventional Power Generation (lignite mines, coal and lignite power plants), District Heating (formerly called Heat Generation, covers Combined Heat and Power and heat plants, including biomass and waste incineration), Renewables (wind, solar, hydropower), Distribution, Supply, Circular Economy and Other Activities. A Railway Energy Solutions segment was added in 2023 following the acquisition of the PKP Energetyka Holding, and Gas-fired Generation was added in 2024.

Three hard coal (Opole, Rybnik and Dolna Odra) and 2 lignite (Turów and Bełchatów) power plants provide approximately 29% (42.4 GW) of Polish domestic gross electricity production. They are also responsible for 72.5% of PGE Group's carbon footprint. A 1.4 GW Dolna Odra Combined cycle gas turbine (CCGT) was commissioned in 2024 and is the largest gas power plant in Poland.

Bełchatów, a 5.1 GW lignite power plant, is the 5th largest single polluter globally and the largest in the EU securing a place on the podium for top EU emitters for PGE under ETS scheme,¹ second only to RWE.² In 2023, PGE emitted 56.9 million tCO₂e in scope 1 out of a total of 84.6 million tCO₂e. In 2021, this was 71 million tCO₂e in scope 1 out of a total of 97.8 million tCO₂e.³ Impressive though this reduction may seem, it was not a result of PGE policy, but of the rapid deployment of renewable energy in Poland which pushed energy generation from coal and lignite to a record low.^{4,5}

¹ X. Miklin et al., [Carbon Giants: Exploring the Top 100 Industrial CO₂ Emitters in the EU](#), February 2025

² Ember, [Repeat offenders: coal power plants top the EU emitters list](#), May 2023

³ PGE Group, [Non-financial report on the activities of PGE Polska Grupa Energetyczna SA and PGE Group for 2023](#), April 2024

⁴ Ember, [Zmiana kursu: Polska energetyka w 2023 r.](#), February 2024

⁵ In 2023, PGE's Conventional Generation produced 25% less power from lignite and 8% less from coal than in 2022.

PGE's transition plan in a nutshell

In 2020, PGE Group became the first Polish power utility to adopt a 2050 net zero target,⁶ aiming for 100%⁷ low- and zero-emission heat production in 2040 and 100% renewable energy for customers in 2050. If PGE followed such a path, the company could give more substance to its claims of becoming the leader in the energy transition out of the Polish utilities. However, the strategy is based on a purely theoretical scenario of its coal assets being spun off, which is unlikely to happen considering the budgetary constraints⁸ and concerns about the rationale of the plan raised by the current Polish government.⁹

This followed the 2020 Polish government's plan to move all coal and lignite plants and mines owned by Polish utilities to a new State Treasury holding (National Energy Security Agency). The plan was considered largely political and was discontinued in 2023. The Polish government's decision on the future of coal assets is expected in mid-2025. Although a return to the spin-off scenario is considered highly unlikely,^{10,11} PGE has not yet amended its strategy.

PGE does not plan to develop any new coal or lignite projects, but no definite phaseout date has been adopted for existing plants. What is more, PGE recently took several decisions which erased their previous commitment to not invest in gas generation after 2025.¹² PGE is aiming to reduce its emission intensity by adding new gas capacity (described as "hydrogen-ready") and by transitioning from coal to gas and to biomass in cogeneration plants. The Group loudly promotes fossil gas as an indispensable low-emission, transition fuel and bets on unproven, risky or not yet existing technologies such as 100% hydrogen-to-power, carbon capture and storage (CCS), and small modular reactors to meet its 2040 targets. New hydropower and a nuclear plant are also planned, even though the latter is at odds with the ambition for 100% renewable energy generation by 2050.

⁶ PGE Group, [PGE Report No. 29/2020](#), October 2020

⁷ PGE Group, [Management Board report on activities of PGE Polska Grupa Energetyczna SA and the Capital Group of PGE in 2023](#), April 2024

⁸ Energetyka 24, [Budżet państwa na 2025 r. Brak środków na wydzielenie aktywów węglowych](#), August 2024

⁹ The Polish government has commissioned an analysis to verify if energy companies will be able to finance transformational projects while owning coal assets, the sensibility of spinning off unprofitable assets from companies in light of the provisions of the Commercial Companies Code, and whether spinning off coal assets from companies will not reduce the financial capacity of these companies, as these assets currently 'contribute' to the EBITDA result. The results are expected by the end of II quarter of 2025.

Interia Biznes, [Co z aktywami węglowymi w państwowych spółkach? MAP wskazało termin](#), February 2025

¹⁰ Interia Biznes, [Co z aktywami węglowymi w państwowych spółkach? MAP wskazało termin](#), February 2025

¹¹ This fact has been acknowledged in the strategy of another major Polish energy utility Enea. According to Enea's CEO Grzegorz Kinelski: 'Our strategy is based on the current state of the law. Today, the government is not working on the coal assets spin-off. This was supposed to be an inter-ministerial project. In developing the strategy, we assumed that the idea of a National Energy Security Agency was no longer valid, so we had to decide how we could manage the coal assets ourselves.'

DGP Gazeta Prawna, [Prezes Grupy Enea: Na NABE zarobiliby głównie doradcy](#), February 2025

¹² PGE Group, [PGE Integrated Report 2023](#), April 2024

Although PGE has numerous plans to develop renewables and invest in grid modernization, the deployment of new renewables after 2030 is limited to offshore wind. The company also aims to develop 0.8 GW of storage capacity, a very low target compared to other major European power utilities.

In fact, PGE has not yet presented a comprehensive decarbonization strategy backed by robust data, measurable targets or clear roadmaps within the framework of acknowledged net-zero pathways. Instead, it has provided a superficial presentation listing their infrastructure projects, declarations and aspirations.

It must be recognized that PGE's investment strategy has been impacted by political decisions and the unpredictability of the domestic regulatory environment. But the uncertainty regarding the future of coal assets does not exempt the Group from being clear and leaving no room for ambiguity. Promoting hypothetical or invalid targets effectively obscures the lack of genuine climate ambition and distracts from PGE's actual decarbonization strategy which is that: "natural gas to remain a transition fuel, for about 20 years."

PGE Group did adopt a new, more ambitious strategy with 2040 net zero and 100% clean electricity targets in August 2023,¹³ but just 5 days later the decision was repealed.¹⁴

Quality of PGE's transition plan

1. Emission reduction plan

In its 'Decarbonization Pathway' document,¹⁵ PGE Group claims to "strive to achieve full alignment with the Paris Agreement while ensuring an uninterrupted supply of heat and electricity". Yet there was apparently no room to mention the Agreement or its 1.5°C target in PGE's 2050 net-zero Strategy. PGE's climate is not aligned with the Net Zero by 2050 (NZE) scenario from the International Energy Agency (IEA),¹⁶ which requires 68% of renewable installed capacities globally by 2030 and no investment in fossil fuels after 2030.

Emissions from fossil gas supply chains are not considered in PGE's emissions reduction plan and no methane emission target is mentioned.¹⁷ Starting from 2035, PGE plans to introduce Carbon capture and storage (CCS) and Carbon Capture Use and Storage (CCUS) and use offsetting. Biomass combustion is misleadingly described as clean¹⁸ and climate neutral, bioenergy with CCS is incorrectly classified as having a negative emission effect, and projects, of uncertain if any sequestration potential, are planned to close the 2050 net-zero emission gap

¹³ PGE Group, [PGE Report No. 29/2023](#), August 2023

¹⁴ PGE Group, [PGE Report No. 30/2023](#), September 2023

¹⁵ PGE Group, [PGE Decarbonization Pathway](#), December 2023

¹⁶ International Energy Agency, [Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach](#), 2023

¹⁷ Methane emissions expressed as CO₂eq are covered by PGE's non-financial annual reporting but only in scope 1, the highest amount reported for hydropower.

[Non-financial report on the activities of PGE Polska Grupa Energetyczna SA and PGE Group for 2023](#), April 2024

¹⁸ Chatham House, [Greenhouse gas emissions from burning US-sourced woody biomass in the EU and UK](#), October 2022

(Forests Full of Energy, Green Roofs concept¹⁹). There is no plan to phase out coal, there is massive deployment of fossil gas projects and plans to rely on CCS for emission reductions beyond 2040. Plus, the use of offsetting undermines the credibility of PGE's net zero target. None of the targets set by PGE are expressed in the actual amount of CO₂ to be reduced compared to any base year. Instead, they claim that 120 million tons will be avoided if they reach 85% share of low- and zero-carbon power sources and 50% of energy from renewable sources by 2030. An additional target of 80% emission reduction (relative to 2020 emission) in scope 1 is mentioned but its relation to the hypothetical scenario where PGE would no longer own any coal or lignite is not clear.²⁰

None of the documents analyzed highlight that this information is based on the assumption that the coal assets would no longer be part of their operations. Similarly, there is no detailed explanation as to how this impacts the presented scenarios. In our opinion, by keeping this fact as a disclaimer in fine print or footnotes, PGE could easily mislead customers and investors, undermining the Group's credibility.

2. Energy planning

Fossil gas, a transition fuel for 20 years.

With 5 GW of new gas capacity planned, PGE is the Polish leader in coal-to-gas transition, promoting fossil gas as a low-emission, transition fuel in the energy sector.

The second 0.7 GW unit of the Combined cycle gas turbine (CCGT) located in Dolna Odra (Gryfino) became fully operational in October 2024, and the 0.9 GW Rybnik CCGT should come online in 2026.

PGE's Decarbonization Pathway mentions "substituting gas with green fuels" by around 2038 and the "shut-down of production based on natural gas in the electrical power industry by 2042" (coinciding with the end of 17-years' worth of support from capacity mechanisms²¹). This has made the Group the only Polish utility with a fossil gas phase-out date.

In January 2025 PGE announced plans to buy 100% of the shares in PAK CCGT, a private company which had been struggling to secure financing for its controversial 0.6 GW Adamów CCGT project.²² PGE has confirmed²³ that it is planning to build a 1.3 GW CCGT in Ostrów Wielkopolski.²⁴ Although the projects' owners are not named, PGE is most likely behind two plants

¹⁹ The Forests Full of Energy program includes planting trees by PGE's employees and their families on grounds owned by the State Forests National Forest Holding - a state-owned company responsible for management of Polish forests.

²⁰ PGE Group, [PGE Integrated Report 2023](#), April 2024

²¹ Capacity mechanisms are temporary support measures that EU countries can introduce to remunerate power plants for medium and long-term security of electricity supply. These capacity payments are in addition to the earnings power plants gain by selling electricity on the energy market.

[European Commission](#) website, access: April 2025

²² PGE Group, [PGE report no 3/2025](#), January 2025

²³ Green-news.pl, [Zagadka rozwiązana. PGE rzeczywiście rozważa budowę elektrowni gazowej w Ostrowie Wielkopolskim](#), February 2025

²⁴ One of the new gas projects listed in documents published by Polish TSO, PSE, [Wykaz wniosków o określenie warunków przyłączenia oczekujących na weryfikację](#) January 2025

which share locations and planned capacities with the existing units at Dolna Odra and Rybnik: 0.6 GW CCGT Krajnik and 1.3 GW Wielopole respectively.

PGE could champion clean solutions for heat production but instead has chosen to switch their combined power and heat plants from coal to gas. Their 2040 climate neutral heat production target depends on 'green fuels' and capturing 20% of the remaining emissions.

PGE has said it will not develop new coal or lignite projects, since commissioning a 7th unit for the Turów power plant in 2021. Under the assumption that coal assets would be spun off by 2030, PGE has not adopted a comprehensive coal and lignite phase-out plan for its plants or mines except for saying it would replace some old units with gas.²⁵

PGE's strategy from 2040 depends on unproven, undeveloped and risky technologies such as nuclear Small modular Reactor (SMR) - nuclear technology, CCS and hydrogen-to-power, with all new CCGT considered hydrogen ready. PGE is also considering building a 2.8 GW nuclear power plant in Bełchatów despite the considerable environmental and financial risks, although this project is not mentioned in the original 2020 Strategy.

Lagging on sustainable developments

As of 2024, renewables accounted for 13% of PGE's energy mix, with 21 onshore wind farms (0.8 GW), 43 PV plants (0.001 GW) and 1.6 GW in hydro energy (29 run-of-river and 4 pumped-storage hydro power plants). PGE is developing Poland's first offshore wind project aiming to have 2.5 GW installed by 2030 (Baltica 2 and Baltica 3) and 6.5 GW by 2040 (Baltica 1). Construction work (onshore) has only started for Baltica 2. PGE seems to be on track to meet its commitment to develop 0.8 GW in energy storage by 2030, but no further expansion is planned by 2040. Likewise, there are no plans to go beyond the 2030 targets for 3 GW of PV and 1.5 GW of onshore wind,²⁶ with the acquisition of existing projects being relied on to contribute to the renewable energy target.

The company is also investing in "market services" (incl. demand side management, grid balancing, and cooperation with energy communities) with a target of 1 GW and 0.8 GW of renewable energy installed for clients by 2030. The Group's targets for sustainable technologies are weak compared not only to other major power utilities, but also to the speed of renewables deployment in Poland, with over 4.5 GW in solar energy added in 2024 alone.

By 2030, PGE's renewable energy production could exceed 90 TWh but there is no reliable information on the future energy mix. The targets of a 50% share of renewable energy for power generation by 2030 and 70% by 2040 assume the phasing-out of PGE's coal assets. PGE's ultimate target to generate 100% renewable energy by 2050 seems at odds with developing 2.8

²⁵ PGE has set decommission timelines for 3 plants, the information comes mostly from external sources. The remaining 0.8 GW coal units in Dolna Odra (Gryfino) are closing in 2026 and 0,9 GW in Rybnik a year later#. Lignite units in Bełchatów will be gradually shut down between 2030 and 2036#, the mine to cease operation in 2038. No decommission plan has been announced for the 3,3 GW coal power plant Opole and the 2 GW lignite-fired units at Turów.

²⁶ PGE Group, [PGE Decarbonization Pathway](#), December 2023

GW of nuclear power, deploying SMR, and a research and development project to “apply CCS to a selected PGE CHP unit.”

PGE is also planning to add 1 GW of hydropower and pumped storage by 2040. Although not mentioned in the Strategy, this refers to the Młoty pumped storage plant.²⁷ One of 7 highly controversial projects initially planned (and abandoned) in 1980s,²⁸ which is still in a very early, pre-permit stage but has already faced severe criticism from local communities and over 150 Polish civil society organizations because of its negative environmental and social impacts.²⁹

3. Capex allocation

There's little information available on PGE Group's planned future capital expenditure (CAPEX) except that of the €18.2 billion planned for 2021-2030,³⁰ approximately 50% will be allocated to renewables (offshore and onshore wind and solar plants). The scope 1 target of 85% CAPEX aligned with the EU taxonomy by 2030 and more than 95% by 2040, applies only to the scenario where the coal assets are spun off.

In the last few years, PGE has increased investments in renewables and the lion share of its CAPEX (35-40%) has been directed to Distribution. This might look like a shift away from fossil fuels, but by reading between the lines of the group's financial statements, it becomes clear that dirty energy remains a significant part of the group's investment.

In 2023 PGE's CAPEX amounted to €2.29 billion (before adjustments):

- 40% (€0.93 billion) of capital expenditure was incurred by Distribution, mainly on connecting new customers to the distribution network and the cabling program.
- 14.3% (€0.35 billion) was incurred in Heating Generation. PGE did not provide information on the share of investment in individual technologies.
- 14.2% (€0.33 billion) in Conventional Generation covered the overhaul of coal and lignite units.
- 11.8% (€0.27 billion) was invested in renewables, including the development of PV and onshore wind projects and the modernization of two existing pump and storage hydro plants.
- 10.1% (€0.23 billion) was invested in the new Railway Power Engineering covering mainly grid modernization and new connections.
- 8% (€0.18 billion) in Other Activities which include the two major PGE gas projects: two CCGT units at PGE Gryfino (€0.08 billion) a CCGT unit at Rybnik (€0.02 billion).
- 0.3% was incurred in Sales and 0.2% in the Circular economy.

²⁷ PGE Group, [PGE Projekt Młoty](#), 2022

²⁸ Wysokienapiecie.pl, [Wodne elektrownie szczytowe mogą wrócić z wielka pompą](#), March 2022

²⁹ WWF PL, [Manifest: NIE dla elektrowni wodnych!](#), October 2020

³⁰ PLN 75bn, exchange rate 0.24208

When the major investments in new gas capacity included in Heating Generation and Other Activities are added to the 14.2% incurred in Conventional Generation, the final share of fossil fuels in PGE's CAPEX increases to at least 24.5% (€0.56 billion).³¹

The current strategy is better represented by data covering I-III Q 2024:

- 24.9% (€0.44 billion) expenditure on new CCGT units is now presented in a new segment - Gas-fired Generation.
- 14.4% (€0.25 billion) invested in renewables.
- 35.6% (€0.63 billion) in Distribution.
- 11.6% (€0.2 billion) in District Heating.
- 8% (€0.14 billion) in Conventional Generation.
- 4% (€0.07 billion) in Railway Power Engineering.
- 1.5% in Other Activities.

If the expenditure on gas CHPs from the District Heating category are added to Conventional and Gas-fired Generation, the total fossil fuels-related CAPEX in the first 3 quarters of 2024 increases to at least 37.1% (€0.65 billion).

4. Climate planning: strategy and governance

PGE's climate targets have not been validated by the SBTi, and the group doesn't evaluate them. Its reporting strategy focuses on the development of projects instead.³² The Group reports on its carbon footprint based on a manual developed in 2020 in cooperation with the Polish Association of Combined Heat and Power Plants (which PGE is a member of). Scope 2 and 3 reporting only covers CO₂ emissions, which raises the question of whether greenhouse gas (GHG) emissions are adequately measured and targeted, especially in view of the fact that the upstream methane emissions related to increased reliance on gas are not included.

The group appointed a Management Board Proxy for ESG, and a Sustainability Committee headed by the President of the Management Board and the Vice President for Finance.

The group's risk assessment includes physical, weather-related climate risks for its infrastructure and the risk of affecting demand for electricity and heat. Climate risks are measured against two scenarios: 'pessimistic' with a 4.5°C (RCP 8.5) increase in global temperature by 2100 and 'optimistic' which assumes a 2.5°C temperature rise and the emergence of new technologies, which overshoots the Paris goal by 1°C.³³

5. Transparency

³¹ €0.13 billion (CAPEX 5.8%) was incurred on two largest expenditure items in this segment: construction of the new Czechnica CHP gas plant and a cogeneration gas unit at the Bydgoszcz CHP. No further information given on projects responsible for the remaining €0.2 billion which makes calculating the exact fossil-related CAPEX percentage impossible.

³² PGE Group, [PGE Integrated Report 2023](#), April 2024

³³ PGE Group, [Non-financial report on the activities of PGE Polska Grupa Energetyczna SA and PGE Group for 2023](#), April 2024

The PGE Group has not published a comprehensive transition plan and tends to refer to its targets as 'aspirations'. The Strategy is a 40-slide summary which only covers its main decarbonization targets, infrastructural investment plans and examples of activities to meet the group's aspirations. It lacks key data and detailed information on particular scopes, concrete emission reduction scenarios, plant closure plans, benchmarks or reporting on progress made, climate risks or governance. Some of this information can be found scattered around in presentations, annual reports and statements but they are not comprehensive. Due to significant discrepancies between the relevant documents,³⁴ with missing or differing information, it is unclear what remains relevant. Some crucial information can only be found in external sources.

The PGE Group did not provide any input or comment on the questionnaire, citing 'current engagement in the advanced 2024 Corporate Sustainability Reporting Directive (CSRD) reporting process' as preventing them from 'providing supplementary information'. While gathering all data to achieve the assessment of PGE's transition plan required analyzing over 20 documents published on PGE's websites and twice as many external sources, the company referred us to only three: PGE Integrated Report 2023 (online version), PGE Strategy of 2020 and PGE Decarbonization Pathway (which is buried so deeply on the PGE website that you need to know it exists to be able to find it).

³⁴ A presentation [PGE Decarbonization Pathway](#) of December 12th, 2023 (with a 1-slaid *Comprehensive decarbonization program in all scopes*) #, Annual Reports of 2023# and 2024 quarterly reports are the latest available documents presenting PGE Group's plans.