

Essay topic:

Poland's best bets for a coal-free energy

Summary:

Polish energy system heavily relies on coal. It constitutes 65.8% of domestic energy production and 60% of electricity generation (IEA, 2024). Poland is also placed around the tenth place worldwide in terms of annual coal production and on the second place in Europe after Germany (IEA, 2022). Poland's coal production is steadily decreasing and was cut by half between 2000 and 2023 (IEA, 2024). Meanwhile, the country is a net importer of coal from non-EU countries, a strategy that will be penalized from 2026 by the Carbon Border Adjustment Mechanism (European Commission, 2025).

The government has created a plan to gradually phase out domestic hard coal production (excluding coking coal) by 2049 (IEA, 2022) and declared intermediate steps of reducing the share of coal in electricity generation to a range of 37.5-56% in 2030 and 11-28% in 2040 (IEA, 2022 citing Ministerstwo Klimatu i Środowiska, 2022a). Unfortunately, the plans don't concern lignite.

In my essay I want to give an overview of Poland's possible ways forward for a coal-free energy transition. I hope to quantitatively evaluate the potential of ongoing state-level efforts (such as plans for Poland's first nuclear plant, for offshore wind) and of rapid growth of solar power prosumers. I will also summarize the challenges of the transition.

Research question:

What are the biggest challenges and most promising solutions for Poland's goal of creating a coal-free energy system?

References:

(The yellow highlighted parts are not formal parts of references, just my translations of authors and titles)

Beyond Fossil Fuels, 2024. *Energising Communities: Transforming Poland's power sector with locally-owned renewables*. [online] Available at: <<https://beyondfossilfuels.org/2024/05/27/energising-communities-transforming-polands-power-sector-with-locally-owned-renewables/>>.

Bosco, A. Fant, S., 2024. The Difficult Transformation of Poland's Coal Region. *Green European Journal* [online] 3 September. Available at: <<https://www.greeneuropeanjournal.eu/the-difficult-transformation-of-polands-coal-region/>>.

Directorate-General for Energy, 2021. *Good practice examples of regional and sub-regional strategies in coal regions in transition (Karlov Vary START programme)*. [online] Available at: <https://energy.ec.europa.eu/publications/good-practice-examples-regional-and-sub-regional-strategies-coal-regions-transition-karlov-vary_en>.

European Commission, 2020. *Assessment of the final national energy and climate plan of Poland*. [online] Available at: <https://energy.ec.europa.eu/system/files/2021-01/staff_working_document_assessment_necp_poland_en_0.pdf>.

European Commission, 2022. *EU Cohesion Policy: €3.85 billion for a just transition toward climate neutral economy in five Polish regions*. [online] Available at: <https://ec.europa.eu/commission/presscorner/detail/es/ip_22_7413>.

European Commission, Directorate-General for Energy, 2024a. *Reimagining Transition in Eastern Wielkopolska : recommendations to build a sustainable ecosystem for social entrepreneurship that benefits citizens and local communities affected by the energy transition*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2833/043634>.

European Commission, Directorate-General for Energy, 2024b. *Regional profile Silesia, Poland*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2833/225888>.

European Commission, Directorate-General for Energy, 2024c. *Regional profile Wielkopolska, Poland*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2833/084091>.

European Commission, Directorate-General for Energy, 2024d. *Regional profile Lower Silesia, Poland*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2833/321710>.

European Commission, 2025. *Carbon Border Adjustment Mechanism* [online] Available at: <https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en>.

IEA, 2022. *Poland 2022*. [online] Available at: <<https://www.iea.org/reports/poland-2022>>.

IEA, 2024. *Poland*. [online] Available at: <<https://www.iea.org/countries/poland/electricity>> [Accessed 23 February 2025].

Kardaś, Sz. 2023. From coal to consensus: Poland's energy transition and its European future. *European Council on Foreign Relations* [online] 27 September. Available at: <<https://ecfr.eu/publication/from-coal-to-consensus-polands-energy-transition-and-its-european-future/#>>.

Ministerstwo Klimatu i Środowiska, 2022a. *Polityka energetyczna Polski do 2040 r.* [online] Available at: <<https://www.gov.pl/web/klimat/polityka-energetyczna-polski>>. (Polish Ministry of Climate and Environment: Energy policy for Poland until 2040)

Ministerstwo Klimatu i Środowiska, 2022b. *Polityka Surowcowa Państwa*. [online] Available at: <<https://www.gov.pl/web/klimat/polityka-surowcowa-panstwa---dokument>> (Polish Ministry of Climate and Environment: Raw Materials Policy 2050).

Partia Zieloni, 2022. *Zielony Plan Odbudowy*. [online] Available at: <<https://partiazieloni.pl/wp-content/uploads/admin/docs/Zielony-Plan-Odbudowy-1.pdf>>. (Polish Green Party, Green Rebuild Plan; contains a section on Energy Transition).

Secretariat Technical Assistance for Regions in Transition (START), 2024. *START report on deliverables - Lower Silesia (PL)* [online] Available at: <<https://circabc.europa.eu/ui/group/301e9528-b63b-4ca5-b7fa-c7f879572d5e/library/4d2f1ad7-209e-4b75-8e32-e0126ab20e8b/details?download=true>>.