

Policy Guidance for the Ministry of Energy and Ministry of Climate and Environment of Poland

Introduction

The new Ministry of Energy and Ministry of Climate and Environment face numerous challenges that will shape Poland's energy and industry transition for decades to come. At the same time, the ministries have an opportunity to unlock capital and accelerate the deployment of clean technologies at scale. Achieving this will require coordinated action across government.

As Poland seeks to harmonise its obligations under European climate policy with the imperatives of energy security and industrial competitiveness, the next 12 months will be decisive for the strategic direction of the energy sector. During this period, the Ministry of Energy must not only complete national energy strategies such as the updated Polish Nuclear Power Programme (PPEJ), the revised National Energy and Climate Plan (NECP), updated Energy Policy of Poland until 2040 (PEP 2040) but also ensure the effective harmonisation of these documents into a coherent policy framework. Only a unified approach can provide the regulatory certainty and investment signals necessary to attract private capital and accelerate the deployment of clean technologies at the necessary scale.

The ability of the Ministry of Energy and Ministry of Climate and Environment to work effectively with other ministries and stakeholders from regulatory authorities to industry and civil society will determine the success of its actions in the coming months.

CATF is prepared to support the ministries in this process by identifying priority actions across power system decarbonisation, carbon capture and storage, hydrogen, nuclear energy, methane abatement, and geothermal energy. The following section outlines key policy priorities and recommended actions for the ministries across these six strategic areas.

The recommendations presented in this document point to several critical areas of focus:

- **Policy harmonisation and resilience:** Ministries must ensure that national strategies, directing energy and industry transition pathways, are not treated as separate policy documents, but rather as interconnected components of a single, cohesive political vision. This requires institutional mechanisms for cross-ministerial coordination and the ability to adapt strategies in response to technological, geopolitical, or market developments. The policies must be designed to withstand electoral cycles and adhere to a long-term, evidence-based, and consistent regulatory framework, thereby maintaining stability and trust throughout the transition process.

- **Technology optionality:** In a rapidly evolving technological landscape, prematurely excluding certain low-carbon solutions risks locking the country into higher-cost and less reliable pathways. A balanced portfolio approach, combining renewable energy, nuclear, CCS, low-carbon hydrogen, advanced geothermal, and demand-side flexibility, will ensure that Poland can respond to market shifts, manage system risks, and meet climate targets at a lower overall cost.
- **Investment certainty:** Clean technology deployment at the necessary scale will not occur without stable and bankable investment conditions. Transparent market rules, predictable support schemes, and streamlined permitting processes are essential to mobilise private capital. Access to EU-level funding mechanisms, international partnerships, and blended finance instruments will be equally important in closing financing gaps for early-stage projects.
- **Regional leadership:** Poland has the potential to become a hub for clean energy innovation and deployment in Central and Eastern Europe. By developing regional supply chains, harmonising policies with neighbouring countries, and leading joint infrastructure projects, Poland can strengthen its energy security, create high-value jobs, and expand export opportunities for its industries.

Power System Decarbonisation

Problem Statement

Coal remains the backbone of Poland's power system, creating specific technical and market challenges for the low-carbon transition. Decarbonising the grid at speed will require policies that give investors, industries and consumers long-term certainty, especially across political cycles.

To inform this, Clean Air Task Force commissioned a technical power system study from Quantified Carbon for the newly formed government. The [modelling shows](#) that Poland must manage risk and uncertainty through a technology-optionality approach to ensure a feasible, reliable and socially responsible energy transition. As with many other countries, wind and solar will likely be the cornerstone of a decarbonised grid. Achieving such a buildout will require substantial volumes of non-weather-dependent, always-available clean firm power to maintain reliability and contain costs.

Across scenarios and sensitivities, the modelling finds that excluding certain options such as new nuclear energy or carbon capture could significantly raise the cost of decarbonisation and triple the infrastructure required, particularly in transmission. A pathway without a broad technology portfolio is likely infeasible. While not modelled, the potential of emerging technologies such as superhot rock geothermal should also be regularly assessed.

Key recommendations

• Promote technology optionality to enable accelerated departure from coal

- Develop regulatory frameworks and permitting processes to support the expansion of a diverse set of clean technologies.
- Focus on reducing costs, eliminating barriers, and resolving conflicts of interest to facilitate cost-effective and scalable deployment.

• Promote onshore wind expansion

- Maximise the deployment of onshore wind power within the limitations of conflicts of interest. This corresponds to approximately 70 GW in [this study](#), a sevenfold increase from the current capacity.
- Maximise the build rate to expedite the phase-out of costly and environmentally detrimental coal power, thereby limiting CO₂ emissions.

• Advance nuclear energy

- Target the establishment of a nuclear fleet surpassing a minimum capacity of 8 GW in the long term.
- Investigate measures to facilitate the repurposing and repowering of coal power plant sites with nuclear reactors.

• Facilitate natural gas power plants with carbon capture

- Facilitate the implementation of [natural gas power plants equipped with carbon capture capabilities](#), providing dispatchable capacity to complement weather-dependent wind power.
- Establish infrastructure for the transport and storage of captured CO₂.

• Encourage demand-side flexibility

- Promote initiatives to increase demand-side flexibility, particularly in electric vehicles and industrial hydrogen demand as well as household heating with accumulator tanks. Significant demand-side flexibility is an important ingredient in all modelled scenarios.
- Develop robust policy and regulatory environment to assure optimum scaling and operation of demand side flexibility.

• Reinforce transmission grids

- Reinvest and make new investments to strengthen local, regional, and national transmission grids.
- Significant grid reinforcement is a prerequisite for the extensive deployment of cost-effective onshore wind capacity.

Carbon Capture and Storage (CCS)

Problem Statement

Poland's energy-intensive industries, including the [cement](#), [steel](#), refining and chemical sectors, provide over 400,000 direct jobs and contribute more to the economy than the EU average. These sectors are also responsible for a substantial share of national greenhouse gas emissions, accounting for around 10.5% of the EU's total. Meeting the EU's ambitious climate targets will require significant deployment of CCS to reduce industrial emissions.

The EU has begun to put in place regulatory measures to enable the capture and storage of 250 million tonnes of carbon dioxide by 2040, through [the Industrial Carbon Management Strategy](#), the forthcoming [CO₂ Regulatory package](#), and the [50-million-tonne CO₂ storage target](#) in the Net Zero Industry Act. Nearly all projects are now in various stages of development across the EU, with many supported by national and EU funding.

Despite [Poland's significant geological storage potential](#), investors continue to face regulatory barriers that together with the longstanding prohibition of onshore CO₂ storage, impede project development and investment. The absence of an enabling legal and financial framework undermines the business case for early movers, whose investments in capture, transport, and storage infrastructure typically involve long lead times and considerable financial risk. These risks must be mitigated through targeted policy incentives and regulatory clarity. Without prompt action from the ministries to facilitate the development of a fully integrated CCS value chain and to secure public acceptance of these technologies, Poland risks missing critical EU milestones, failing to meet its decarbonisation commitments, and foregoing the industrial competitiveness that CCS can deliver.

Key recommendations

- **Create a National CCUS strategy and present the draft for public consultation in Q1 2026. The plan should:**
 - Build on the groundwork laid by the [Net Zero Industry Act \(NZIA\)](#) and the [Industrial Carbon Management strategy \(ICMS\)](#) to get a better picture of the planned CO₂ storage sites and estimation of potential CCS demand.
 - Conduct a CO₂ network study to map potential CO₂ transport routes, with the aim of developing oversized, future-proof infrastructure and connecting it to a broader regional CO₂ network.
 - Identify priority industrial clusters for deployment based on emission scale, readiness, and proximity to transport and storage.
 - Include an implementation roadmap covering permitting reform, financing tools, and public engagement.

• **Harness Poland's CO₂ storage resource potential**

- Commission a national geological storage resource assessment with capacity and confidence grading.
- Fund pre-FEED studies and exploration drilling for at least one priority onshore storage site to be licensed by 2027.

• **Develop incentive schemes for first-mover projects to bridge the funding gap**

- Design and launch a Carbon Contracts for Difference (CCfD) scheme to bridge the OPEX gap for early projects.
- Mobilise CAPEX support via grants, concessional loans, and state guarantees, while also leveraging EU funding streams such as the Innovation Fund, Connecting Europe Facility, and forthcoming Industrial Decarbonisation Bank.

Clean Hydrogen

Problem Statement

Clean hydrogen can be a critical lever for transitioning Poland to a net-zero economy. Hydrogen is already an established commodity; Poland is the third largest producer and consumer of hydrogen in Europe used primarily as an [industrial feedstock](#) in refining, fertiliser production and chemicals manufacturing. However, this hydrogen is produced almost exclusively through carbon-intensive processes. Poland therefore faces [the dual challenge](#) of reducing emissions-intensive hydrogen while scaling up production of a clean alternative at a volume and price that will not negatively impact its economy.

To begin addressing this challenge, Poland published its National Hydrogen Strategy in 2021. Whilst a commendable attempt to address some of the challenges, it lacks the level of granularity needed to chart a path for how Poland will map and implement priority production and offtake projects, and what policy reform will be brought forward to support streamlining this effort.

Further complicating matters, Poland's current availability of renewable energy sources (RES) is unlikely to be sufficient to meet clean hydrogen production needs on their own over forthcoming decades, particularly as these RES must be first prioritised to decarbonise Poland's highly carbon-intensive electricity grid.

Poland will therefore need to consider the following steps in order to chart a course to successful scale up of clean hydrogen production and offtake in key industries to support its domestic decarbonisation:

Key recommendations

- **Publish an updated National Hydrogen Strategy in the first half of 2026 presenting a roadmap of obligations, policies and actions in the near- to mid-term, with a view to 2050:**
 - Prioritise the deployment of clean hydrogen projects in heavy industries already using hydrogen to secure stable, long-term offtake.
 - Identify additional sectors that will require clean hydrogen to decarbonise, such as heavy-duty transport.
- **Support all clean hydrogen production pathways, staged to match demand and avoid competition with other decarbonisation priorities**
 - Scale low-carbon hydrogen (e.g., steam methane reformers with CCS) in the near term, particularly for industrial users and while limited RES availability is prioritised for grid decarbonisation.
 - Plan the staged upscaling of renewable hydrogen once suitable RES levels are deployed for the needs of both grid decarbonisation and hydrogen production.
 - Advocate to the EU-level for allowances to meet REDIII renewable hydrogen targets through any eligible clean hydrogen production pathway.
- **Implement and streamline demand-side obligations and incentives to kick-start the clean hydrogen market.**
- **Align recommendations across all relevant policy and planning documents**
 - Align hydrogen development plans with the implementation of other clean technologies and infrastructure (e.g., CCS, electrification), support the streamlining of planning, permitting, and construction of necessary decarbonisation technologies, limiting potential barriers and trade-offs to deployment, shifting towards an industrial cluster framework approach.
 - Forecast carefully how much clean hydrogen will be needed domestically, identifying how much of that share can be met with domestic production, whether any level of imports will be needed, and where other decarbonisation methods could be better suited over hydrogen.
- **Increase the visibility of Poland as priority of EU support for clean hydrogen projects, with an emphasis on low-carbon hydrogen production, as the national resources and capabilities are limited.**

Nuclear Energy

Problem Statement

As one of Europe's most carbon-intensive and manufacturing-dependent economies, Poland must deliver low-emission, reliable energy while ensuring industrial competitiveness and energy security.

Nuclear energy is essential to this transformation. The recent draft update of the Polish Nuclear Power Programme (PPEJ) [provides a foundation](#) for advancing nuclear energy as one of the pillars of decarbonising the energy sector, ensuring energy security, and supporting Poland's industrial competitiveness. However, the strategy faces obstacles, including a lack of clarity on plans for a second nuclear power plant and the integration of small modular reactors (SMRs). Prime Minister Donald Tusk's [recent statement](#) suggests a clearly defined, realistic and implementable SMR strategy could be developed in the near term. Poland needs a coherent, fully adopted nuclear energy programme to unlock financing, regulatory certainty, and broad-based implementation for large scale nuclear and SMRs.

A CATF-commissioned study highlights that Poland must accelerate its clean energy transition to meet 2050 climate goals¹. According to the analysis, nuclear energy could provide between 8 and 21 GW of capacity by mid-century. Delaying the integration of this resource — including SMRs — will only increase costs, heighten land-use pressures, and extend reliance on high-carbon and costly alternatives.

• Adopt the updated Polish Nuclear Power Programme (PPEJ) by the end of 2025, ensuring it contains:

- Integration of SMRs alongside gigawatt-scale projects.
- A [defined and transparent financing model](#) to unlock private and international capital.
- A coherent vision for the development of the second nuclear power plant (EJ2).
- Mechanisms for robust cross-regional and international cooperation.
- A revenue assurance model to protect investors from impacts of curtailed generation in case of overgeneration on the grid.
- The abandonment of spent fuel reprocessing plans².
 - The [inclusion of spent fuel reprocessing](#) in the updated draft of Poland's nuclear energy program (PPEJ), with little clarity on intent or implementation, raises nonproliferation concerns and risks signaling support for a plutonium economy.
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• Publish a national SMR roadmap that:

- Defines [a clear vision for role and implementation pathways for SMRs](#), including licensing, siting, and financing frameworks.
- Considers encouraging co-location of SMRs with industry, streamlining regulatory pathways, and integrating heat use applications.

• Foster regional SMR supply chains, regulatory coordination, and joint training programs.

• Strengthen partnerships

- Strong partnerships with EU members and global nuclear leaders can accelerate technology transfer, improve safety standards, and position Poland as a nuclear energy innovation hub.

¹ A Vision for Poland's Clean Energy Transition – Clean Air Task Force

² The inclusion of spent fuel reprocessing in the PPEJ, with little clarity on intent or implementation, raises nonproliferation concerns and risks signaling support for a plutonium economy.

Geothermal Energy

Problem Statement

Geothermal energy currently plays a modest role in Poland's clean transition and is primarily serving district heating needs. However, global engineering advancements now make it possible to access geothermal resources at far greater scale and in more locations, including through next-generation technologies such as Enhanced Geothermal Systems (EGS) and advanced geothermal systems (AGS). These approaches can tap heat in areas without conventional hydrothermal resources, significantly expanding the geographic potential. Superhot Rock (SHR) geothermal, where resources reach temperatures of 374°C or more, offers the potential to generate five to ten times more power per well compared to conventional geothermal. [SHR systems](#) can also cascade heat for industrial processes, district heating, cooling, and agriculture after electricity generation, maximising economic and climate benefits.

For Poland, the strategic value of geothermal innovation, including next-generation geothermal, especially superhot rock geothermal, lies in its ability to deliver secure, domestic, 24/7 electricity and heat, support industrial decarbonisation, and reduce dependence on fossil fuel imports. It is critical that the Polish government also explores the opportunity of next-generation geothermal.

Key recommendations

- **Include an ambitious pathway for geothermal energy in the Polish Energy Policy to 2040 and the Polish Heating Strategy to 2040**
 - Cover next-generation geothermal, including superhot rock geothermal .
- **Support an ambitious research agenda [through public funding and international collaboration](#)**
 - Work with other CEE member states to pool expertise, resources, and infrastructure.
- **Expand access to financial mechanisms to accelerate geothermal innovation**
 - Use grants, concessional loans, and risk-sharing instruments.
- **Incentivise co-location of high-temperature geothermal projects with industrial sites to enable direct use of heat for manufacturing**
 - Target fossil fuel substitution in hard-to-abate sectors.

Methane Abatement

Problem Statement

According to the [IEA 2024 Methane Tracker](#), Poland emitted an estimated 58 kt of methane in the oil and gas sector in 2023. Addressing leaked emissions that can be prevented is not only a climate necessity but an economic opportunity for the country. However, methane

accounted for almost 42% of Poland's methane emissions in 2023, equivalent to 698 kt, according to the same IEA report.

In November 2023, the EU agreed to its first-ever rules on reducing methane emissions in the energy sector. These include requirements for domestic producers on leak detection and repair (LDAR), venting and flaring of methane, emissions from abandoned and inactive wells, and annual monitoring and reporting of emissions, all subject to independent verification.

The regulation also introduces landmark obligations on fossil fuel importers, implemented in phases, with data and reporting obligations starting first. From 2027 importers must demonstrate that they meet the same monitoring, reporting, and verification (MRV) standards as those adopted in the EU's methane regulation. [CATF's analysis with Rystad](#) showed that a phased import standard would have demonstrable emissions reduction benefits, with few negative impacts on EU energy security and the price of oil and gas.

Key recommendations

• Determine common standards for compliance

- Poland's competent authority for the Methane Regulation should collaborate with other Member States to determine common standards for compliance with Article 27 and Annex IX, taking into account the existing solutions for tracking provenance and data on imported fossil fuels across supply chains.

• Harmonise a penalty framework

- Work with other competent authorities to harmonise a penalty framework that sets common, dissuasive penalties for non-compliance with the Methane Regulation to ensure companies are adequately incentivized to meet these obligations.

• Encourage national oil and gas companies to join OGMP 2.0.

- Given the central role of OGMP 2.0 in reducing methane emissions, Poland should consider encouraging oil and gas companies that are state owned or partially state-owned, to join the framework. This should include Poland's national gas company, Polskie Górnictwo Naftowe i Gazownictwo, as well as PKN Orlen, of which Poland (via the State Treasury) is the largest shareholder.

Conclusion

Poland's energy transition is entering a decisive stage. The pace and scope of change required in the coming years must balance the EU's decarbonisation targets, the imperative of energy security, and the need to safeguard industrial competitiveness. This will demand a coherent and integrated approach that aligns national strategies with the European policy framework. The forthcoming national strategies will form the backbone of this transition; however their effectiveness will depend on whether they are harmonised to guide decarbonisation pathways. The next two years, until the new parliament election, are a narrow window of opportunity for the

The Ministries to work together and act promptly to meet EU climate and economic goals. Effective coordination and implementation of the recommendations in this document will help the government deliver an integrated, future-ready energy and industry transition, strengthening Poland's position in Europe.

About Clean Air Task Force

Clean Air Task Force (CATF) is a global nonprofit organization working to safeguard against the worst impacts of climate change by catalysing the rapid development and deployment of low-carbon energy and other climate-protecting technologies. With more than 25 years of internationally recognized expertise on climate policy and a fierce commitment to exploring all potential solutions, CATF is a pragmatic, non-ideological advocacy group with the bold ideas needed to address climate change. CATF has offices in Boston, Washington D.C., and Brussels, with staff working virtually around the world. Visit catf.us and follow [@cleanaircatf](https://twitter.com/cleanaircatf)