Expert Council
on Energy Security and Climate

Recommendations
of the Expert Council for Energy Security and Climate
on the plan for the phase-out of coal-fired power generation in Poland

1. Context

One of the most important problems of Polish energy policy is the lack of top-down setting of ambitious strategic goals that take into account European regulations and global megatrends as well as costs and technical possibilities.

Among the goals is setting an aspirational date for the transition away from coal-fired power generation in Poland. Historically, this has always been a difficult issue, fraught with a number of reservations about its feasibility and acceptance by the coal industry. Often, the very need to move away from coal in energy generation still raises doubts among many stakeholders.

That is why the **Council proposes a structured approach** in which we:

What?	• propose setting an **aspirational date** of 2035 to move away from coal in power generation;
	• Summarise **the rationale** behind the need for such a strategic objective;
Why?	• Point out **the negative effects** that the artificial prolongation of coal-fired power generation will have;
	• Emphasise the **benefits** that setting this target will bring;
How?	• propose **steps** to be taken so that the target can be realised at the lowest possible cost and with the greatest possible benefit.

At the same time, we realise that long-term goals can (and should!) be subject to periodic adjustments, taking into account changing internal and external conditions, including the pace of investment and technological development, as well as financial feasibility. **The mere existence of uncertainty should not, however, encourage the setting of conservative targets, as the long-term consequences of postponing difficult decisions can be much more costly than ambitious measures**, and years of investment neglect will be hard to make up for.

2. What?
Main objective—adopting 2035 as the end date for the use of coal in the Polish energy sector

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The new government should set a political, **aspirational end date** for the closure of coal-fired power generation (electricity and heat production) in Poland. The date should be ambitious, but also **realistic in terms of providing the time needed to plug the capacity gap**, whether through the construction of new generation capacity, the development of energy storage and demand-side flexibility, or cross-border interconnections.

The Council proposes that the aspirational date for the coal phase-out be set at 2035. This is a date that, on the one hand, allows for a relatively quick reduction of the cost pressures associated with coal-fired power generation in Poland on energy and heat prices, while also sufficiently distant in time to be able to build new generation capacity and ensure security of supply. At the same time, it allows for better allocation of public funds that, instead of increasing support for the inefficient coal mining sector, support investments needed in the future, e.g., in the transmission and distribution grid and improving energy efficiency. It will also mobilise the coal regions to look for economic development alternatives, which is particularly important for the Turów and Bełchatów energy complexes. It is also a date correlated with the expiry of capacity market support for all coal units. In addition, according to the current shape of EU regulations, the supply of CO_2 emission allowances on the primary market will end around 2040.

Postponing this change, if at all, should only be possible in the event of a threat to the security of energy supply in Poland, and the coal units remaining in operation during that period should be taken out of the energy market and remunerated only for the availability of capacity, with a strict time limit on their operation, e.g., in the form of a strategic reserve. In the case of a negative resource adequacy assessment without coal unit operation around 2035, it should be possible to extend the date to 2040 at the latest. The feasible pathway to the goal of complete withdrawal from coal-fired power generation should be regularly reviewed on the basis of reliable analyses of system balance.

The date for the closure of coal-fired power generation should be put into all strategic documents that Poland has to prepare in the nearest future: The Long-term Low-Carbon Strategy, the Energy Policy of Poland until 2040, the revised National Energy and Climate Plan, and the Heating Strategy.

The coal phase-out plan should be as specific as possible and **include quantitative targets (in GW) in subsequent intermediate years (e.g., 2027, 2030, and 2033)**. This will allow for the measurability of its implementation over time, **as well as a possible revision of the end date**. This schedule should take into account the technical condition and operating costs of individual units and **fit into an overall plan for their safe replacement by new generation sources, storage, interconnectors, and demand-side flexibility** in all temporal perspectives (daily, weekly, seasonal), meeting the criterion of operational security of the national electricity system.

3. Why?
Rationale behind the need to set a target to move away from coal

a) Internal factors—state of the coal sector

The current situation in the hard coal mining sector is economically disastrous. Polska Grupa Górnicza (PGG), Tauron Wydobycie, and Węglokoks Kraj are demanding further government subsidies in increasing amounts, most recently PLN 7 billion. Declining mining levels combined with rising costs are leading to a completely uncompetitive Polish mining sector. Geological conditions and dwindling reserves with favourable parameters are driving up mining costs (and at the same time increasing risks to the health and lives of miners).

The average age of coal-fired power plants in Poland is already around 50 years. The reduction in production volumes (due to the increase in the share of renewables in the system) and the increase in operating costs, together with the lack of measures to reduce the high fixed costs, make them permanently economically unviable. Support from the capacity market will expire in 2036 for new units and will already end in 2028 for older units, with no real regulatory options for further extension.

b) External factors

It is Poland's *raison d'etre* to belong to the European Union. **It is also clear that the European Union's climate and energy policy, which aims to achieve climate neutrality by the middle of the century, will remain unchanged**, and will be consistently implemented using instruments such as the EU ETS and ETS2 (which means **increasing CO_2 emission costs for all sectors, according to the 'polluter pays' principle**), or increasingly ambitious targets for renewable energy sources and energy efficiency, as well as further market integration.

Another very important premise is that **measuring the carbon footprint and the desire to reduce it in products and services is now a global trend**. This is certainly the case in the European Union, which is Poland's main trading partner (over 75% of Polish exports[1] go to the EU, and exports now account for over 60% of Polish GDP) and source of most foreign direct investment in Poland (over 90%).

c) Counterfactual scenario—what happens if we do not adopt an ambitious plan?

Keeping coal power longer than is absolutely necessary will mean:

- **High electricity and heat prices** due to:

Expensive coal	The cost of extracting domestic coal* hovers around PLN 900/t, while ARA coal prices are around 50% lower. *according to analyses by wysokienapiecie.pl
Expensive allowances for CO_2 emissions	CO_2 emission allowances in 2023 cost an average of more than 80 EUR/t.* **According to available KOBIZE analyses, in 2030 they may cost as much as 180 EUR/t and in 2040 even more than 330 EUR/t.** * which translates into about 60-90 EUR/MWh in electricity generation costs for coal-fired power stations

[1] Ambroziak, Ł., Markiewcz, J., Strzelecki, J., Święcicki, I., Wąsiński, M. (2022), Korzyści Polski z jednolitego rynku, Polski Instytut Ekonomiczny, Warszawa.

Barriers to the integration of renewable energy sources	**The low flexibility of coal-fired power plants means that renewable energy sources will face barriers to integration into the system** and their output will increasingly have to be *curtailed*. This situation translates into increased costs to be borne ultimately by energy consumers.
High costs of maintaining expensive coal units	The failure to reduce fixed costs, coupled **with increasingly lower production and higher failure rates and greater technical wear and tear** due to the variable mode of operation, will mean very high maintenance costs for coal-fired power plants, to be borne by energy consumers (or taxpayers).

- **Deterioration of the situation of Polish exporters and making it more difficult to locate foreign investment in Poland** due to:

High carbon footprint	The carbon intensity of the Polish economy per unit of GDP is more than **twice the European average**

- **Negative impact on Poland's balance of payments** due to:

CO2 allowances' supply gap	The Polish government has a pool of CO_2 emission allowances at its disposal, the sale of which is a source of revenue for the national budget. However, this pool is significantly smaller than the emissions of Polish companies covered by the EU ETS so far projected for 2021-2030. The gap may reach several hundred million tonnes. Thus, **failure to significantly accelerate emission reductions will mean an outflow of tens of billions of euros from the country.**

d) Benefits of setting an ambitious date for moving away from coal

A transparent, well-communicated, ambitious plan to move away from coal will provide the basis for realistic planning of Poland's energy transition. It will allow for better planning of new investments and embed Poland's energy policy in the leading narrative of global and EU climate and economic policy. Crucially, it will also enhance Poland's credibility in EU climate policy negotiations and **strengthen the country's negotiating position**. The adoption of a plan to move away from coal not only will help in terms of obtaining support for energy transition from EU funds but also will facilitate the understanding and acceptance of EU institutions for actions that might require a degree of flexibility to EU rules due to Poland's unique situation.

Accelerating the transition away from coal also will **support the competitiveness of the Polish economy**, particularly in the industrial sector, by limiting the increase in energy prices and reducing exposure to the price of emission allowances and the carbon footprint.

Higher net revenues for the Polish economy under the EU ETS (through a narrowing of the allowance supply gap) will in turn translate directly into **greater opportunities for financing of the energy transition**.

Setting an ambitious date will also **reduce the waste of public funds** associated with the ever-increasing costs of maintaining coal-fired power generation and supporting the economically unviable hard coal mining sector.

4. How? What steps need to be taken to implement this plan

a) Coal Commission with expert background and wide empowerment

The basic tool for achieving the goal of phasing out coal-fired power generation by 2035 should be the establishment of a Coal Commission. The main task of the Coal Commission would be **to develop a detailed plan for the closure of coal-fired power generation in Poland and to adjust the operational plans of Polish mines accordingly.** This is a solution that has been successfully tested in the process of moving away from coal in Germany or the Czech Republic.

The Commission would be responsible for implementing the aspirational end date for the coal phase-out, together with the adoption of milestones for the amount (in GW) of coal capacity phased out in intermediate years (e.g., 2027, 2030, 2033), **as well as for adjusting the coal mining output to the expected demand.**

The composition of the Coal Commission should **represent a wide range of stakeholders—representatives of the government, coal regions, leading industry associations, employers, trade unions as well as expert, scientific and non-governmental organisations.**

The work of the Commission should be supported by access to reliable data and analysis, in particular an analysis of the national coal resources, both on the supply and demand side, taking into account, among others:

- Cost projections of individual mines, together with possible ways of reducing fixed costs;
- a summary of the technical conditions of coal-fired power plants, with particular emphasis on the challenges associated with the technical wear and tear of individual coal units;
- investment capabilities for Polish energy groups.

The Coal Commission should also work on **protective measures for the mining regions (a just transition) and a new social agreement** adjusted to the coal phase-out date, while **respecting the government's financial obligations towards current employees** in the sector. Multi-billion-dollar subsidies to the mining industry for the next several years do not seem desirable, necessary or regulatorily feasible.

b) Organisational transformation—unbundling of coal assets

A further tool to achieve the end goal of moving away from coal could be the spin-off of coal assets (not necessarily to a single entity), or another form of restructuring. **As a first step, an urgent audit of the current concept of unbundling coal assets and the status of work on it should be performed.** The main elements of this audit should include:

- a re-assessment of the market valuation of generation assets to be spun-off from state-owned companies to a separate entity/entities;
- State Treasury guarantees needed for implementation of the asset spin-off;
- verification of arrangements with financial institutions for the transfer of debt;
- determination of whether the spin-off will constitute state aid and will need to be notified.

Based on the outcome of this audit, it will be possible to develop and agree with key stakeholders a concept for the unbundling of coal assets or another mechanism to enable State Treasury companies to continue investing in the energy transition.

An alternative solution is to decide to leave the assets in their current organisational structures and give a broad mandate to the companies' management boards to make decisions based solely on economic considerations.

c) Plugging the capacity gap and implementation of market and financial mechanisms

The phase-out of coal-fired power generation will only succeed if the conditions are created to invest in the system components that will fill this gap. Market mechanisms should be adapted to fully transmit investment signals and ensure efficient price discovery in all markets. Subsidisation of specific customer groups should only take place in exceptional cases—the market should be liquid and transparent. Reforming the capacity market towards even greater activation of energy storage, demand side and low-carbon flexible sources will also help to ensure energy security.

As part of the work on the strategic documents (NECP, energy policy), a coherent vision of quantitative targets for the various elements that complement the system and allow it to run safely under conditions of a high share of renewable sources should be developed and mechanisms for their implementation should be planned.

d) Introduction of a support mechanism for the early retirement of coal-fired capacity

In this context, it makes sense **to consider the possibility of introducing financial incentives for power generators that decide to retire profitable, newer coal units early**, under the so-called *Early Decommissioning Mechanism* (EDM). According to EU state aid rules, such support is possible by tendering for support for early decommissioning and receiving compensation in return. However, the condition for obtaining support should be reliable market and regulatory forecasts of lost revenues for generators due to early closure of units. The mechanism should only be considered in situations of excess capacity in the national electricity system.