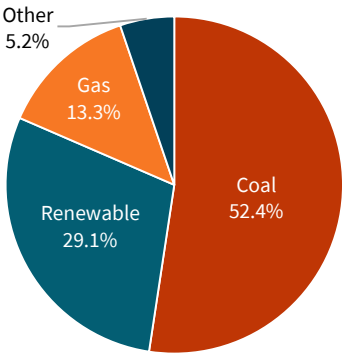


Poland: a just transition case study

Prahalad Prasad (*), Jonas David

Poland is one of the EU countries most exposed to fossil fuels.[1] The country's coal exposure is particularly notable, constituting a 52% share of electricity production as shown in Figure 1. Although progress on other energy sources has cut coal's electricity share from 91% to 52% in the last twenty years, Poland's share of electricity generated from renewable sources remains well below the EU average and the country is still heavily reliant on coal.[2]

Figure 1. Poland's 2025 electricity generation mix. Source: Energy-Charts, Forum Energii.



Meanwhile, Poland's overall primary energy consumption includes 41% coal, 27% oil and 17% gas,[3] with oil products primarily utilised for transport.[4] Much of this oil and gas is imported.

In recent years, Poland has made progress on the transition. Power sector emissions have fallen by 30% in the last two decades and the country has seen rapid growth in solar energy, with 20GW of capacity added from 2020-2025, taking solar's share of electricity generation from 1% to 11%).[5]

As Poland looks to shift away from fossil fuels, this has raised questions around the just aspects of the transition – to ensure this process is fair, inclusive and considers Polish communities that may be impacted. To address this very concern, the EU has allocated EUR3.85bn to five Polish regions as part of its Just Transition Fund,[6] making Poland the largest beneficiary.[7]

This paper will explore how a failure to consider these social aspects could complicate Poland's transition and therefore have financial consequences for bond investors. The key takeaways are:

- **The transition is financially relevant to Poland, due to its EU membership and current lack of energy independence. This leaves Polish government bonds particularly exposed during global energy crises.**
- **Failure to transition in a just manner can have political consequences through elections, creating outcomes that ultimately delay the transition itself.**
- **Poland's 2025 Green Bond Framework update does not include just transition-related projects in the eligible categories, offering engagement opportunities for investors.**

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[1] Pg 11, "Poland Green Bond Framework Presentation", Ministry of Finance, Jun 2025.
[2] "Poland", Ember, 14 Apr 2026.
[3] Pg 7, "Energy Transition in Poland. Edition 2025", Forum Energii, 30 Jul 2025.
[4] "Poland", International Energy Agency, accessed 27 Apr 2026.
[5] "Poland", Ember, 14 Apr 2026.
[6] "EU Cohesion Policy: €3.85 billion for a just transition toward climate neutral economy in five Polish regions", European Commission, 5 Dec 2022.
[7] Pg 25, "To be or not to be continued? Analysis of the Just Transition Fund implementation across six EU countries", Forum Energii, 13 Apr 2026.

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The transition is financially relevant to Poland

A successful transition is not only important for Poland from a sustainability perspective, but is also financially relevant and therefore has implications for its bond investors.

With most renewable energy cheaper than fossil fuels globally,[8] there is significant incentive to transition. For Poland specifically, this incentive is even stronger, given its EU membership and current lack of energy independence.

Emissions Trading Scheme

As an EU member state, Poland is subject to the EU's Emissions Trading System (ETS), a carbon emission trading scheme that aims to reduce GHG emissions by passing the costs of those emissions onto those who generate them.[9]

Poland's main right-wing opposition party, Law and Justice (PiS), has led calls to withdraw from the ETS. However, given the system is part of EU law, failure to comply could result in significant financial penalties.[10] Urszula Zielińska, the Deputy Climate Minister, has warned that leaving the ETS could cost Poland PLN300bn (EUR70.44bn) in foregone EU funding,[11] suggesting that while the scheme imposes short-term costs, it simultaneously allows access to funds to enable the transition away from these high-cost emissions.

Therefore, failure to transition could be financially material for Poland by keeping energy prices high[12] and adding to political pressure to abandon the ETS, which could have subsequent funding implications. On the flipside**, a successful transition to renewables would reduce ETS costs, which could reduce energy bills for Polish consumers and businesses.**

Compliance with EU regulation

As an EU member, Poland must also submit a National Energy and Climate Plan (NECP) to the European Commission.[13] Having submitted its draft plan in April 2024, Poland failed to submit its final NECP, despite two prior warnings. The European Commission subsequently referred the country to the Court of Justice of the EU in October 2025.[14] While there has been little news as to the outcome of this referral since, the prospect of financial sanctions, through penalties or withholding of transition funds, remains possible.

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[8] "91% of New Renewable Projects Now Cheaper Than Fossil Fuels Alternatives", International Renewable Energy Agency, 22 Jul 2025.

[9] ETS 1 was the first iteration, focusing on the power, industry and aviation sectors, while the upcoming ETS 2 targets fuel combustion in buildings, road transport and additional small industry. Given its heavy reliance on coal, the system is particularly onerous on Poland, with businesses and consumers facing some of the highest energy prices in Europe. As a result, the country is seeking Polish-specific solutions that take into account its situation, as part of reforms to ETS 1 and the implementation of ETS 2.

[10] "Opposition demands Poland leave EU Emissions Trading System", Notes from Poland, 16 Mar 2026.

[11] "Poland will insist on special provisions regarding the ETS", GMK Center, 19 Mar 2026.

[12] "ETS and CO_2 prices: why does Poland pay some of the highest energy bills in Europe?", Enerace, 27 Aug 2025.

[13] This is a mandatory strategic document outlining the policies and actions of member states towards meeting the EU's collective 2030 climate and energy targets, including strategies for GHG reduction, renewable energy and efficiency.

[14] "Commission decides to refer POLAND to the Court of Justice of the European Union for not submitting its final updated National Energy and Climate Plan", European Commission, 8 Oct 2025.

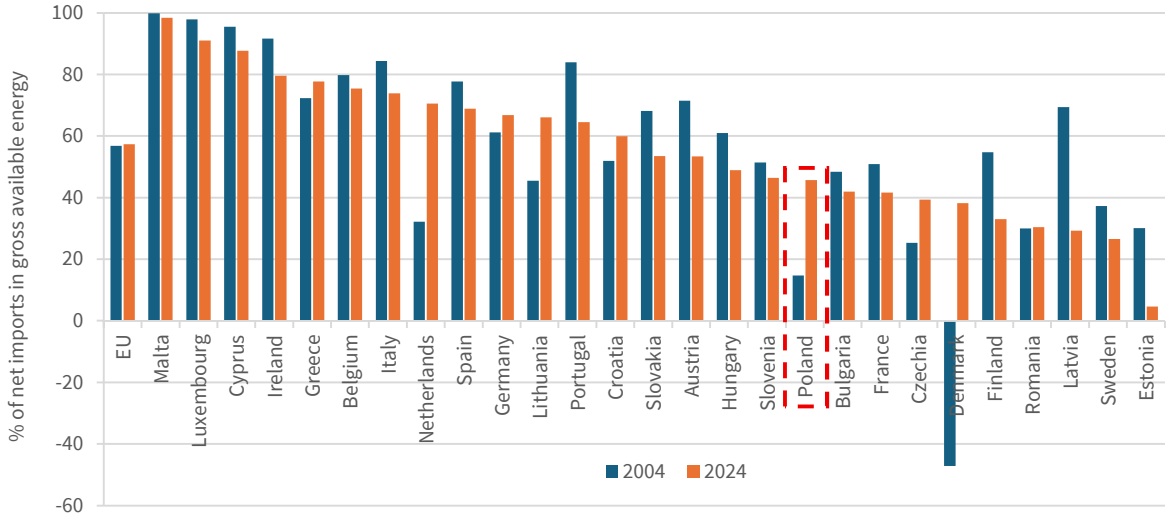
In a separate case, the European Commission deducted EUR68.5mn of Poland's EU funds for continuing extraction at the Turów lignite coal mine, after sending an injunction that required operations to be halted at the mine in May 2021. The decision was upheld by the European Court of Justice.[15]

These cases highlight the potential financial implications for non-compliance with EU regulation and the need for Poland to move away from coal successfully and quickly. **Financing the transition in Poland relies heavily on European funding,[16] meaning its success is dependent on meeting EU regulations and requirements.**

Energy security and independence

The transition is also financially relevant to Poland from the perspective of energy independence. The country's overall dependence on energy imports rose from 15% to 46% between 2004-2024, one of largest increases among EU countries observed in the period, although Poland is in the bottom half for energy import dependency. This is shown in Figure 2 below.

Figure 2. Energy import dependency rate (% of net imports in gross available energy, based on terajoules). Source: Eurostat.



While Figure 1 highlights how coal powers most of the country's electricity generation, Poland's overall primary energy consumption includes 41% coal, 27% oil and 17% gas,[17] with oil products primarily utilised for transport.[18] Its significant rise in energy imports can partially be explained by the country's transition away from domestically extracted coal to other sources of energy. Indeed, the oil and gas' share in Poland's energy supply has increased by 66% and 70% respectively between 2000-2024, while coal's share has fallen by 44% in this period.[19]

However, 97% of Poland's crude oil is imported, with the imports covering 82% of gas demand.[20] This import dependency means the country is significantly exposed to price volatility that disrupts energy markets, as evidenced by the aftermath of Russia's invasion of Ukraine in 2022 and the recent Iran crisis. Prior to the Russia-Ukraine conflict, Poland was heavily reliant on Russian

[15] "EU court rejects Poland's appeal against €68.5 million coal mine fines", Notes from Poland, 22 Jan 2026.
[16] Pg 27, "To be or not to be continued? Analysis of the Just Transition Fund implementation across six EU countries", Forum Energii, 13 Apr 2026.
[17] Pg 7, "Energy Transition in Poland. Edition 2025", Forum Energii, 30 Jul 2025.
[18] "Poland", International Energy Agency, accessed 27 Apr 2026.
[19] Ibid.
[20] "Energy Transition in Poland. Edition 2025", Forum Energii, 30 Jul 2025.

energy, seeing 55%, 66% and 75% of natural gas, oil and coal imports from Russia respectively.[21] As European countries looked to pivot away from Russian fossil fuels, oil and gas prices surged, leading to significant inflation. Given its exposure to Russian energy, Poland was heavily impacted, seeing the one of the highest EU inflation rates in December 2022, with its Eastern European peers topping the table.[22]

Although Poland has since diversified away from Russian fossil fuels, it is now one of the countries most significantly exposed to a prolonged closure of the Strait of Hormuz,[23] especially as over half of its crude oil imports come from Saudi Arabia.[24] Given transport is Poland's largest sector for energy consumption, and transport energy use is dominated by oil products, the country is acutely susceptible to global oil price volatility. Indeed, Poland announced a package of measures to curtail rising fuel costs in March 2026, including cutting VAT on fuel and reducing excise duty, after retail diesel prices hit record highs.[25] In the longer term, the country's shift to electric vehicles (EVs) to reduce oil consumption is underway, with 2025 a record year for new EV registrations.[26]

Therefore, while Poland has shifted away from coal in recent decades, it has increased dependency on oil and gas, meaning it is highly exposed to international energy crises. Rather than returning to domestic coal to insulate itself from these crises, the country must use this opportunity to accelerate the transition to renewables.

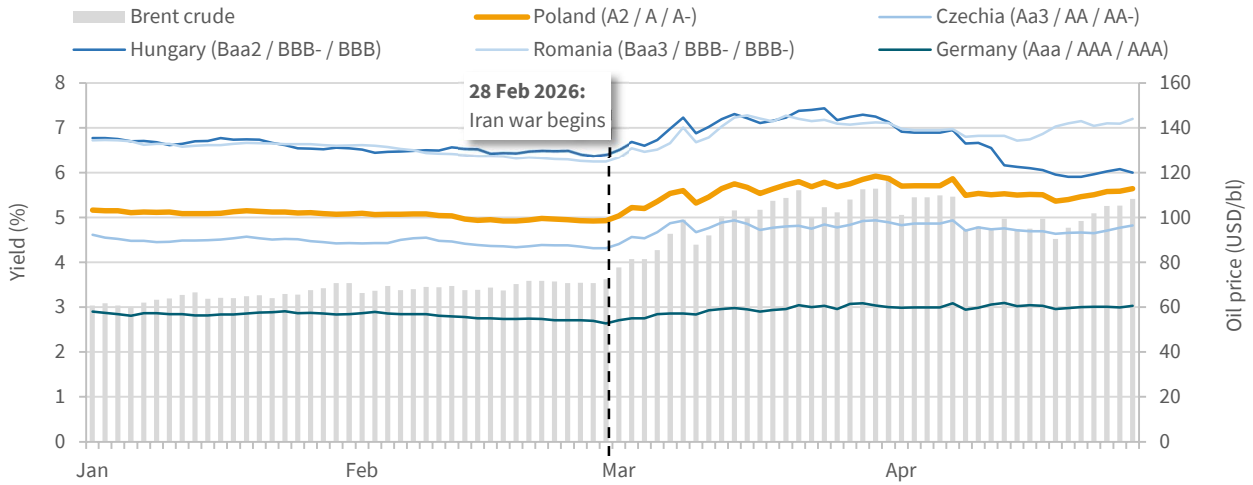
Government bond yields amid higher energy prices

Recent tensions in the Middle East triggered a spike in oil prices above USD100 (Brent crude), compared to levels around USD66 in mid-February. Energy importers like Poland are particularly exposed to such an energy price shock. Poland's high import dependence and shift away from Russia as a supplier[27] exposes the country to recent market stress.

To assess the bond market impact of the shock, we investigated the local currency government bond yields of Poland and other relevant countries in the region this year.[28] We also plotted the Brent crude oil price alongside.

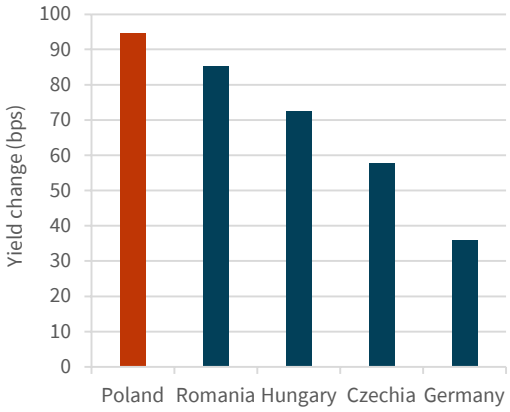
[21] "The end of energy resource imports from Russia?", Forum Energii, 28 Feb 2022.
[22] HICP monthly inflation data (annual rate of change). Source: Eurostat, accessed 15 Apr 2026.
[23] "Not all Emerging Markets are equal: Hormuz, triple deficits, and the new energy risk premium", Allianz, 17 Mar 2026.
[24] "Poland expects trade with Saudi Arabia to grow to $10 billion, finance and economy minister tells Arab News", Arab News, 10 Feb 2026.
[25] "Poland to cut VAT on fuel as diesel prices hit all-time high", Notes from Poland, 26 Mar 2026.
[26] "Poland's Electric Vehicle Revolution – Full 2025 Analysis", European Alternative Fuels Observatory, 3 Feb 2026.
[27] Forum Energii estimates the value of net imports of energy and fuel raw materials at PLN112bn in 2024 (equivalent to over EUR25bn): crude oil accounts for 54%, natural gas for 23% and coal for 2%. Saudi Arabia has become the largest energy supplier, accounting for more than 50% of Poland's oil imports. Source: "Energy Transition in Poland - Edition 2025", Forum Energii.
[28] The countries selected are regional comparables from the J.P. Morgan GBI-EM index. Germany has been included as a proxy for EUR benchmark yields. Source: GBI-EM, J.P. Morgan, 31 July 2024.

Figure 4. Brent crude oil price vs Poland and regional comparable local-currency government bond yields, 2026 YTD. Source: AFII, Bloomberg Finance L.P., accessed 27 Apr 2026.



As shown in Figure 3, yields remained relatively stable until the end of February, but increased in March amid the US-Iran conflict and subsequent rise in global oil prices. In Figure 4, we investigated the government bond yield changes specifically during March 2026.[29]

Figure 3. Change in government bond yields (10yr, local currency), March 2026. Source: AFII, Bloomberg Finance L.P., accessed 27 Apr 2026.



Notwithstanding a better credit rating and lower yields than some other countries (e.g. Hungary and Romania), Poland stands out as the country with the highest yield increase. As summarised in more detail in the Appendix, oil price changes were a statistically significant driver of Poland's yield during that period of market stress, as it was for the other countries in the region.

The secondary market pricing impacts the funding costs for new debt issuance in the primary market, thereby creating fiscal headwinds.[30] A lower dependence on energy imports could reduce the market sensitivity to external shocks in the medium to longer term.

After this initial shock via market sentiment, higher energy prices are expected to negatively impact growth, inflation and external balances.[31] This additional pressure comes at a time when Poland's fiscal position is already weak with a general government deficit of 7% in 2025 – well above the median for similar countries.[32] In this environment, the government will have limited room to cushion the impact of energy prices on the economy, implying additional pressure on companies and households.

[29] March was selected to capture the upward movement in oil prices (which fell at the start of April) and avoids the political noise generated by the election in Hungary.

[30] Engaging with issuers in the primary issuance process can often be effective. For further details, please see our bondholder engagement toolkit: "Finding your voice: tools for better bondholder engagement on climate and nature risk", AFII, 5 Dec 2025.

[31] According to ING, a 10% increase in oil prices could result in 0.3pp higher inflation, -0.15pp lower real GDP, and a current account deterioration by -0.15%. Source: "Energy shock 2.0 – who breaks, who bends in Central and Eastern Europe", ING, 21 Apr 2026.

[32] "Fitch Affirms Poland at 'A-'; Outlook Negative", Fitch Ratings, 27 Feb 2026.

A successful shift away from fossil fuels to renewables would enable Poland to gain greater energy independence and therefore mean its bonds (and by extension, funding costs) are less exposed to the energy shocks seen in the past few years. As highlighted, this could have long-term benefits to the country's overall fiscal position.

Social concerns present execution risk to Poland's transition

A successful transition is financially relevant to Poland, given the country's EU membership and the current context of energy security.

However, there are social factors that could complicate the execution of the transition. In our previous case study on the US utility American Electric Power (AEP), we outlined how failing to ensure a fair outcome for communities dependent on the coal industry for employment can result in setbacks to a successful transition, through project delays, strike action and litigation.[33] The same argument can be applied to Poland if the country's coal-related workers are not considered as part of the transition.

A key difference between a corporate such as AEP and a sovereign such as Poland, however, is an individual's respective ability to respond to an unjust transition. While corporate employees can, for example, launch strike action, a sovereign can see political consequences that slow the transition if the shift away from fossil fuels is not fair and inclusive. In the case of a democracy such as Poland, citizens disenfranchised by green or transition-friendly policies can vote for candidates against such policies, who can delay or ultimately block the transition from happening.

Indeed, last year saw conservative candidate Karol Nawrocki win the Polish presidential election, supported by the right-wing populist PiS party. The president of Poland is the head of state and has the power to veto legislation, while prime minister Donald Tusk is the head of government. As Poland is governed by a pro-European centrist coalition, this has created a political stalemate, especially as Tusk's government does not possess the three-fifths majority required to overturn the president's veto power.[34]

In relation to the transition, Nawrocki's victorious campaign involved championing the coal industry and strongly opposing the EU's Green Deal, labelling this 'eco-madness'.[35] Following his election, the president immediately used his veto power to block legislation designed to ease rules around building onshore wind farms. He has also indicated that he will continue to defend the coal and agriculture industries. Nawrocki even proposed a referendum to allow Poles to vote on rejecting the EU Green Deal during his campaign.[36] Such volatile policies can deter the long-term investments needed to build renewables.

Amid concerns around energy prices and security, the transition can perhaps be politicised and therefore delayed, if social aspects are not considered.[37] In this case, the EU's transition targets may not have accounted for Poland's energy context or Poland may not have adequately addressed the just aspects of its transition. The reality could be a combination, but the outcome is

[33] "American Electric Power: a just transition case study", AFII, 30 Jan 2026.
[34] "Poland: The Tusk government and the 2025 presidential election", House of Commons Library, 3 Jul 2025.
[35] "How President-elect Nawrocki could lock Poland into a fossil fuel past", New Eastern Europe, 22 Jul 2025.
[36] "Poland's new president vetoes bill loosening wind turbine law, freezing energy prices", Notes from Poland, 21 Aug 2025.
[37] "The city caught in the middle of the big energy shift debate", BBC News, 30 Apr 2026.

that a political candidate has leveraged anti-green sentiment as part of a campaign to win political power and subsequently used this power to delay the transition.

The scope of a just transition

As outlined, Poland's energy mix and import dependency means it has been heavily exposed to recent energy shocks from the Russia-Ukraine war and the Iran crisis. Coupled with the country's EU obligations, the transition is a necessity for Poland, especially with renewable energy now cheaper than coal for electricity generation. However, failure to do so in an inclusive manner can be capitalised on politically, with the consequences ultimately jeopardising the progress of the transition itself.

With regards to the impact of shifting away from coal, there will likely be effects on workers, who may need to be reskilled and redeployed, while simultaneously a wider impact on energy prices, subject to the success of the transition.

Our previous paper on AEP acknowledged the differences in the 'scope' of the just transition, which can have a narrow focus on labour issues, or a broader scope that considers social justice and the impacts on vulnerable groups in society. Given the relatively small number of workers still employed in the coal industry in Poland (c.80,000 out of a labour force of 18mn, compared to 400,000 in the 1990s), and the current concerns around energy poverty in light of rising energy bills, it seems more appropriate for investors to use a wider scope when analysing Poland's just transition, especially as concerns around energy costs are very likely to have political implications.

A successful shift away from fossil fuels to domestic renewables could bring down energy bills (via lower ETS costs and less vulnerability to global price volatility). This would signify a socially positive outcome for poorer households, highlighting how the transition can be just even in a highly coal-dependent nation. This does not mean coal workers should be neglected solely for a fast transition. Retraining and redeployment remain important, and Poland is prioritising support for coal regions through the EU Just Transition Mechanism funding. Meanwhile, lower debt financing costs could result in more government funding available to support a just transition.

Therefore, a just analysis of the country could not only factor in the labour impact of the transition away from coal, but the impact of lower energy costs for vulnerable groups.

How is Poland addressing the just transition?

Poland has acknowledged its need to transition, requiring over EUR220bn for renewable energies and grid upgrades to reach carbon neutrality by 2050.[38] The country aims to raise its renewable energy share of electricity generation to 50% by 2030 and is advancing on this front – June 2025 was the first month where renewable energy generation overtook coal, and the first time where coal powered electricity generation fell below 50% for a full quarter.[39]

As the transition accelerates in Poland, the country does also appear to be making progress on addressing the social risks to the transition. Although President Nawrocki vetoed the onshore wind bill last year, he later approved a law enabling coal mine closures and providing compensation payments to affected workers, marking a moment of political alignment between the Tusk-led government and opposition president. Nawrocki's support stemmed from coal miners' support for

[38] Pg 11, "Poland Green Bond Framework Presentation", Ministry of Finance, Jun 2025.
[39] "Renewable energy generation overtakes coal for the first time in Poland", Beyond Fossil Fuels, 3 Jul 2025.

the bill, highlighting how, when social concerns are addressed, political agreement can follow and the just transition can progress.[40]

Poland is also the largest beneficiary of the EU Just Transition Fund, with five coal dependent regions receiving EUR3.85bn. As of October 2025, 12.5% of this funding had been spent, with a further 73.3% already allocated to economic, environmental and social projects. The remainder has yet to be allocated. A recent report highlights how implementation of the funding *"has been hindered by the lack of a clear national just transition strategy and limited coordination between the ministries"*, but it has at least initiated long-term planning in the regions and *"a debate on the energy transition in territories where this had never taken place before"*.[41]

Although a just transition features as Pillar 1 of the country's strategic Energy Policy of Poland until 2040 (EPP2040) plan,[42] it could perhaps be better integrated into decision-making.

The role of bond markets

Given the investment required to fund Poland's transition, the country will likely utilise capital markets significantly in the coming years. Poland was the first sovereign to issue a green bond in 2016 and has subsequently issued several green bonds, denominated in EUR and JPY. An overview is provided in the Appendix.

Looking at Poland's EUR bond curve (Figure 5), green bonds currently account for 4.25bn of debt outstanding in EUR, illustrating how Poland aims to engage investors on its transition strategy.

Figure 5. Poland's EUR bond curve (bonds with maturity >1yr). Source: Bloomberg Finance L.P., accessed 28 Apr 2026.

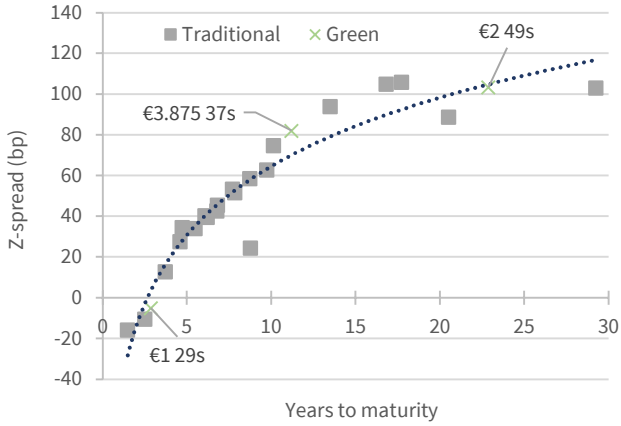
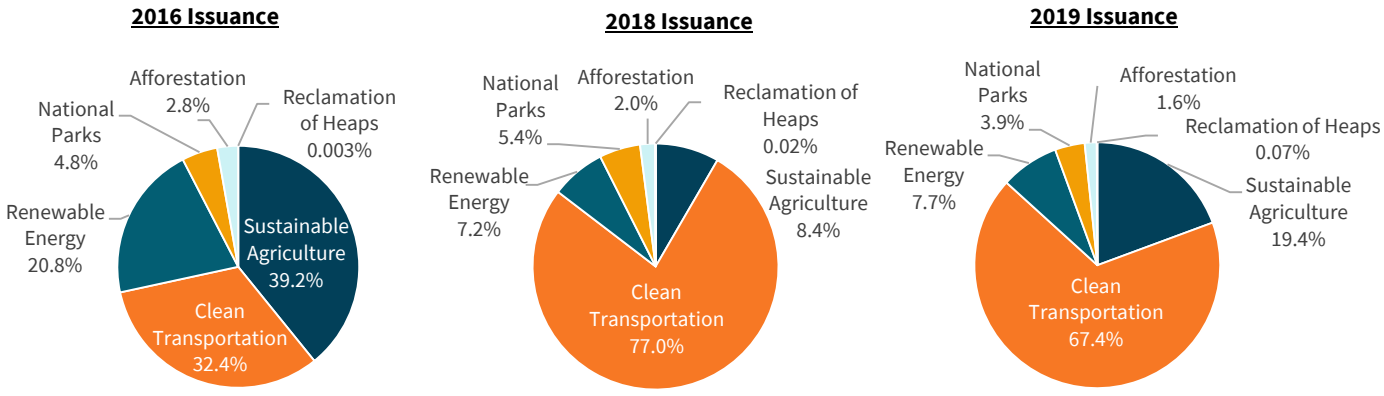


Figure 6 below shows how the proceeds were allocated for each issuance under the 2016 Green Bond Framework.

Figure 6. Allocation of Poland's EUR 2016, 2018 and 2019 green bonds. Source: Green Bond Framework Presentation, Republic of Poland Ministry of Finance, June 2025.



[40] "Poland's president signs bill facilitating coal mine closures and compensation for miners", Notes from Poland, 15 Dec 2025.
[41] Pg 29, "To be or not to be continued? Analysis of the Just Transition Fund implementation across six EU countries", Forum Energii, 13 Apr 2026.
[42] "Energy Policy of Poland until 2040 (EPP2040)", Ministry of Climate and Environment, 2 Feb 2021.

In 2025, Poland updated its framework, including a just transition in the narrative section. However, while the importance of the subject is acknowledged in the framework and the EPP2040 strategy, it is not explicitly included in the eligible projects, suggesting that future labelled issuance may not be directly linked to supporting a fair and inclusive transition.

Figure 6 also illustrates how in previous green transactions, proceeds do not appear to have been allocated to just transition specific outcomes, such as retraining, increasing affordability or helping vulnerable communities.

Therefore, while there may be implicit social benefits via the transition, such as lower energy bills, just transition considerations do not appear to be driving how Poland has and will allocate bond proceeds, despite the country acknowledging the importance of the issue in its Green Bond Framework. This has also been observed in other sovereign frameworks and allocation reports.[43]

Given the high relevance of Poland's transition, there could also be an opportunity to expand green bond issuance into local markets, thereby creating means for domestic investors to more actively support the government's transition effort.

Considering elevated fiscal deficits and ongoing financing needs, labelled bonds offer an opportunity to attract sustainability-oriented investors, with several of them paying attention to social considerations in their analysis.

Poland aims to issue EUR10-12bn of foreign currency bonds this year[44] and has issued c.EUR9.5bn so far. An overview of Poland's 2026 YTD foreign currency issuance is shown in Table 1 below and highlights how EUR336mn of the total has been labelled.

Table 1. Poland 2026 YTD foreign currency issuance. Source: Bloomberg Finance L.P., accessed 26 Apr 2026.

ISIN	Pricing Date	Currency	Coupon	Maturity	Amount Issued (mn)	EUR equiv. (mn)	ESG Label
XS3268040964	8 Jan 2026	EUR	2.875%	15 Jan 2031	2,000	2,000	-
XS3268043554	8 Jan 2026	EUR	3.625%	15 Jun 2036	1,250	1,250	-
JP561600AS27	6 Feb 2026	JPY	1.880%	13 Feb 2029	116,900	625	-
JP561600DS24	6 Feb 2026	JPY	2.220%	13 Feb 2031	62,700	336	Green
JP561600BS26	6 Feb 2026	JPY	2.900%	13 Feb 2036	11,800	63	-
JP561600CS25	6 Feb 2026	JPY	3.650%	13 Feb 2046	20,200	109	-
US857524AJ17	7 Apr 2026	USD	4.625%	14 Apr 2031	1,000	851	-
US857524AK89	7 Apr 2026	USD	5.375%	14 Apr 2036	2,500	2,129	-
US857524AL62	7 Apr 2026	USD	6.125%	14 Apr 2056	2,500	2,129	-

With a portion of financing left to be raised this year and considering the significant funding requirements going forward, fixed income investors have an opportunity to raise the importance of a just transition with policymakers to ensure that social concerns are being addressed.[45] In practice, this could involve reiterating social concerns linked to the transition, asking for related reporting and how the EU Just Transition Fund money is being utilised. Investors could also query the latest status of ETS 2 negotiations and whether Poland-specific carve-outs have been achieved.

Eventually, an unsuccessful transition creates risk for the Polish economy and population, particularly via higher energy prices, with negative implications for bond investors.

[43] "Lost in translation? Just transition in the labelled bond market", Just Transition Finance Lab, 10 Mar 2026.
[44] "Poland Taps Foreign Debt Markets with $6 Billion Sale", Bloomberg, 7 Apr 2026.
[45] "Finding your voice: tools for better bondholder engagement on climate and nature risk", AFII, 5 Dec 2025.

Conclusions

Poland's current dependence on fossil fuels means a successful transition is financially relevant to the country. As Poland is a member of the EU, its current energy mix means it is subject to high ETS costs, yet a shift to renewables could bring these costs down for businesses and consumers. Meanwhile, Poland is reliant on the EU for transition-related funding. A failure to meet EU climate regulation could jeopardise this, delaying the move away from fossil fuels.

Energy security and independence also render a successful transition financially relevant to Poland. The country has seen a significant rise in energy import dependency in the past 20 years and having faced the inflationary consequences of Russia's invasion of Ukraine, it is now significantly exposed to the Iran crisis. This is relevant for fixed income investors. Poland's local currency bond yields widened significantly in March 2026, thereby raising its funding costs and potentially creating future fiscal headwinds.

However, social risks can complicate the execution of transition. This has been observed in democratic Poland, with citizens electing an anti-green President, who in turn can use his political power to delay the transition. Therefore, for the shift away from fossil fuels to be successful, it must be fair and inclusive. Otherwise, there can be political consequences.

Poland is making progress on achieving a just transition and the topic is now very much part of the national agenda. Given the level of investments required to decarbonise in the coming years, bond markets will play an important role. As such, investor engagement on social risks is important, as failure to address these could hinder the shift away from fossil fuels.

Appendix

A) Regression analysis. Source: AFII, Bloomberg Finance L.P.

$$\Delta y_{(i,\,t)} = \alpha_i + \beta_1 \cdot \Delta Brent_t + \beta_2 \cdot \Delta Bund_t + \beta_3 \cdot \Delta VIX_t + \varepsilon_{i,\,t}$$

The analysis covers one calendar month of daily observations. The dependent variable in each equation is the daily change in the country's 10-year sovereign bond yield. Three independent variables were included:

- Δ **Brent price (%)**: the variable of primary interest, capturing the direct oil price signal
- Δ **Bund 10Y yield (bps)**: controls for global duration re-pricing driven by core EU rate dynamics, which affects all CEE bond markets independently of oil
- Δ **VIX (%)**: controls for global risk sentiment, capturing the propensity of international investors to sell CEE bonds in risk-off episodes

Regression results

	Constant	Coefficients including significance level[46]		
		β_Brent	β_Bund	β_VIX
Poland	-0.037	1.353***	0.346	0.326***
Czechia	-1.051	1.178***	0.210	0.316***
Hungary	-1.836	1.414*	0.824**	0.242
Romania	-0.327	2.022***	-0.172	-0.217

B) Overview of Poland's green bond issuance to date. Source: Bloomberg Finance L.P., accessed 29 Apr 2026

ISIN	Pricing Date	Currency	Coupon	Maturity	Amount Issued (mn)	Green Bond Framework
XS1536786939	12 Dec 2016	EUR	0.500%	20 Dec 2021	750	2016
XS1766612672	31 Jan 2018	EUR	1.125%	7 Aug 2026	1,000	2016
XS1958534528	28 Feb 2019	EUR	1.000%	7 Mar 2029	1,500	2016
XS1960361720	28 Feb 2019	EUR	2.000%	8 Mar 2049	500	2016
XS3109460959	30 Jun 2025	EUR	3.875%	7 Jul 2037	1,250	2025
JP561600DS24	6 Feb 2026	JPY	2.220%	13 Feb 2031	62,700	2025

[46] *** p<0.01, ** p<0.05, * p<0.10

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