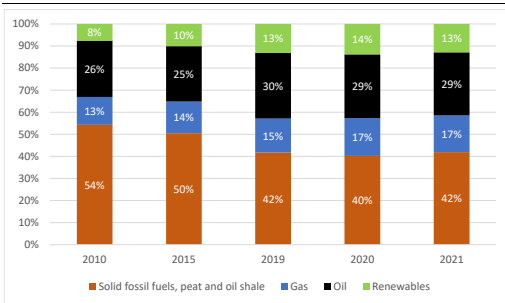


State of the Energy Union 2023 Poland

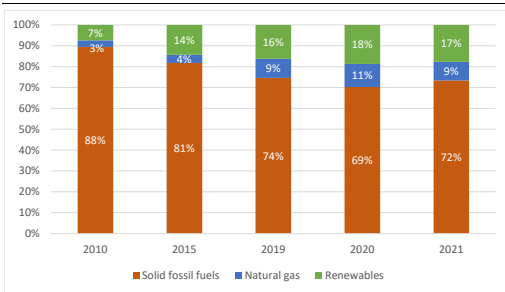
Key energy figures

Graph 1: Energy mix



Source: Eurostat

Graph 2: Electricity mix



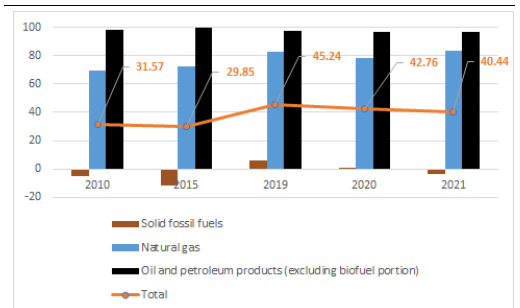
Source: Eurostat

- The Polish energy mix remains heavily dominated by fossil fuels. Approximately **90% of Poland's energy mix in 2021 was derived from fossil fuels**. Coal alone accounts for around 60% of the energy mix and 72% of total electricity generation. Poland allocates more than the EU average to fossil-fuel subsidies, especially for coal and oil.
- Renewable energy sources, which continue to be substantially less subsidised than fossil fuels, **only accounted for around 13% of the energy mix** and only 18% of total electricity generation.

Security, solidarity and trust

1. DIVERSIFICATION OF ENERGY SOURCES AND REDUCTION OF IMPORT DEPENDENCY

Graph 3: Import dependency on fossil fuels



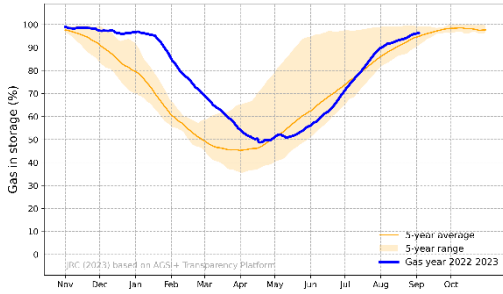
- In percentages
- Combustible renewables and electricity are excluded
- The total amount takes into consideration the energy mix of the country

Source: Eurostat

- Poland's supply diversification efforts in recent years have helped **mitigate the impact of the halt in Russian supplies and avoid major disruptions**. Gazprom no longer supplies it with natural gas as of 28 April 2022, by unilateral decision, following Poland's refusal to pay for gas supplies in roubles.
- Its dependency on Russian gas has been decreasing in the last decade, **from around 76% in 2014 to 55% in 2021**. Before Russia invaded Ukraine, it received the equivalent of 10 billion cubic metres (bcm)/year of natural gas from Gazprom, around 45% of its domestic demand.

2. FLEXIBILITY OF THE ENERGY SYSTEM

Graph 4: Gas storage levels



Source: JRC calculation based on AGSI+ Transparency Platform, 2023

- Poland has **seven gas storage facilities** with a total capacity of **3.73 bcm**.
- On 16 October, the country's storage capacity was filled to **98.81%**.

Integrated internal energy market

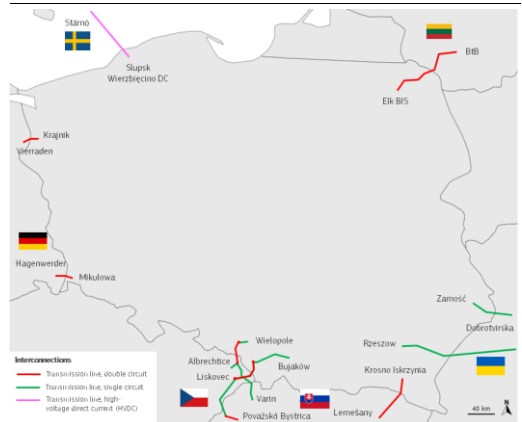
1. ELECTRICITY INTERCONNECTIVITY

2023	2030 target
5.54%	At least 15%

Source: DG ENER's own calculation based on ENTSO-E

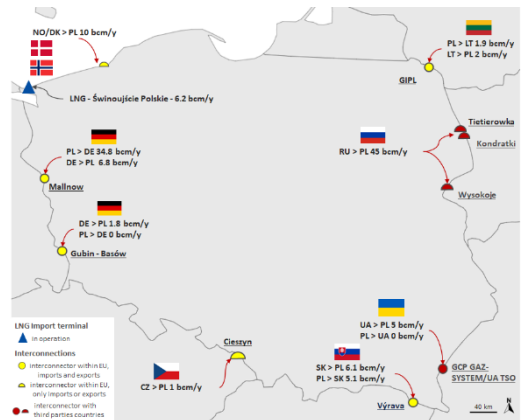
2. ENERGY TRANSMISSION INFRASTRUCTURE

Map 1: Cross-border electricity interconnections



Source: European Commission map recreation (based on ENTSO-E)

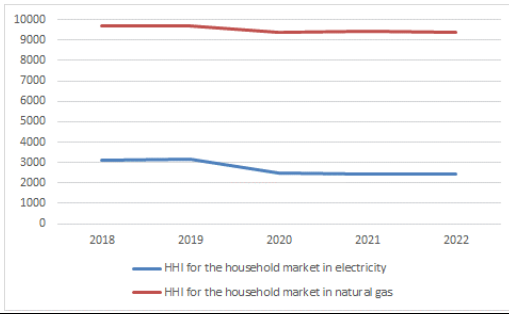
Map 2: Cross-border gas interconnections



Source: European Commission map recreation (based on ENTSO-G)

3. MARKET INTEGRATION

Graph 5: Index of concentration (HHI) for the household markets in electricity and natural gas



Source: CEER 2023 out of ACER's Energy Retail and Consumer Protection 2023 Market Monitoring Report.

- Data regarding the market share of the three largest suppliers in 2022 is not available.⁽¹⁾

Rollout of electricity smart meters

- Poland had a low electricity smart meter rollout, with 18.7% of household consumers being equipped with smart meters in 2022. 80% of consumers are planned to be equipped with smart meters later than 2024.⁽²⁾

4. ENERGY POVERTY AND JUST TRANSITION

Table 1: Energy poverty

	Poland			EU		
	2020	2021	2022	2020	2021	2022
Arrears on utility bills (households %)	4.7%	5.2%	4.5%	6.5%	6.4%	6.9%
Inability to keep home adequately warm (household %)	3.2%	3.2%	4.9%	7.5%	6.9%	9.3%
Population living in dwelling with presence of lead, damp and rot (population %)	6.0%	:	:	14.8%	:	:

Source: Eurostat

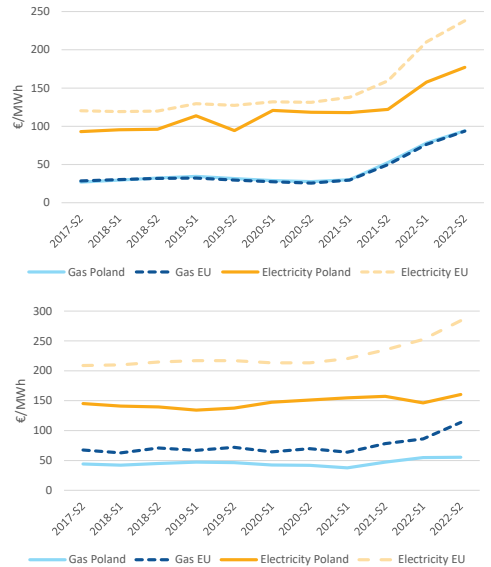
- Just transition plan:** Poland's territorial just transition plans focus on the phase-out of coal by 2030 in the coal mining regions of **Lower Silesia, Łódzkie, Malopolska, Śląskie, Wielkopolskie**. The plans outline how the Just Transition Fund, with a national allocation of 3.8€ billion, will support economic diversification, decarbonisation and

⁽¹⁾ CEER 2023 out of ACER's Energy Retail and Consumer Protection 2023 Market Monitoring Report.

modernization of industries and coal phase out. Coal phase-out commitment 2049.

5. ENERGY PRICES

Graph 6: Energy retail prices for industry (top) and households (bottom)



(1) On electricity, the band consumption is for DC households and ID for industry.

(2) On gas, the band consumption is D2 for households and I4 for industry.

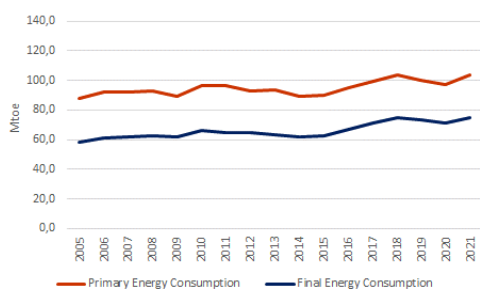
Source: Eurostat

⁽²⁾ ACER, CEER. Energy Retail and Consumer Protection, 2023 Market Monitoring Report.

Energy efficiency

1. ENERGY EFFICIENCY

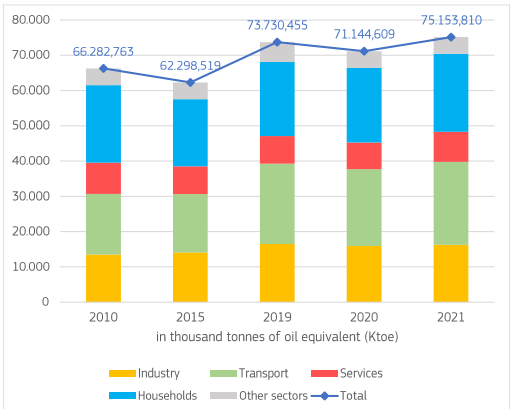
Graph 7: Primary and final energy consumption



Source: Eurostat

- In 2021, Poland's **Primary Energy Consumption (PEC)** amounted to 103.95 Mtoe, 3.7% higher than in 2019, while its **Final Energy Consumption (FEC)** amounted to 75.15 Mtoe, 1.9% higher than in 2019, to a large extent due to the COVID-19 crisis recovery.

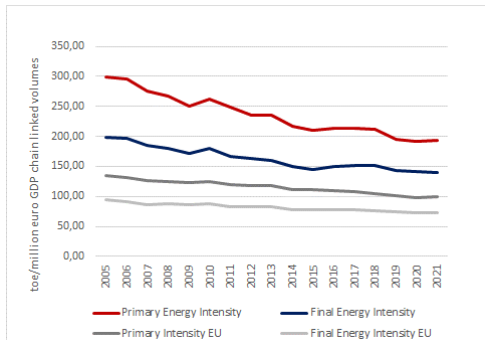
Graph 8: Final energy consumption per sector



(1) Final energy consumption excludes consumption of the energy sector (including transformation and distribution losses) and non-energy use of energy carriers.

Source: Eurostat

Graph 9: Primary and final energy intensity



Source: Eurostat

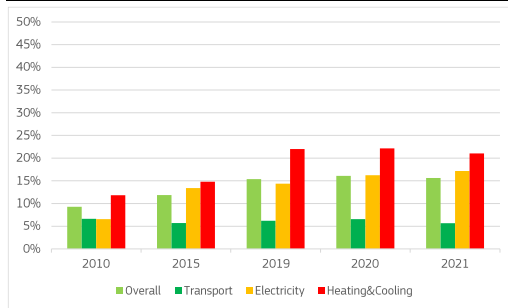
2. ENERGY SAVINGS IN BUILDINGS

- In 2020 there were **6.2 million of residential buildings** in Poland.
- As per its 2020 Long Term Renovation Strategy (LTRS), **Poland** targets to achieve **-4%** of energy savings **by 2030** compared to **year 2018** in the building sector.
- In 2021, the final energy consumption of residential buildings **decreased by 10.82%** compared to 2019.
- The sales of heat pumps amounted to **207 992 units** in 2022 representing an increase of **112%** compared to 2021, as per the European Heat Pump Association (EHPA).

Decarbonisation and climate action

1. SECTORAL SHARE OF RENEWABLE ENERGY

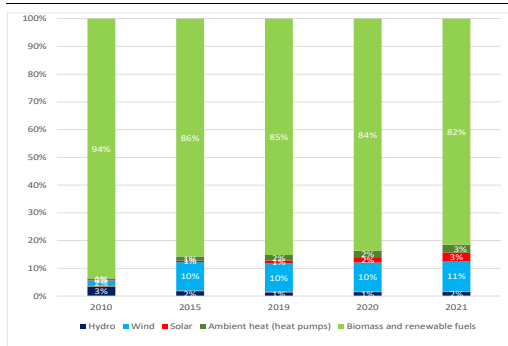
Graph 10: Share of renewable energy sources



(1) In % of gross final consumption of energy.

Source: Eurostat

Graph 11: Renewable energy mix

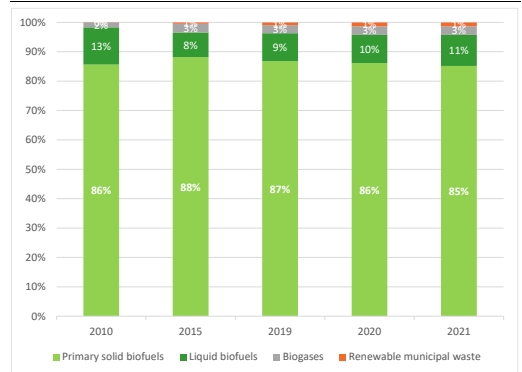


(1) In % of gross final consumption of energy.

Source: Eurostat

2. BIOENERGY DEMAND

Graph 12: Bioenergy mix

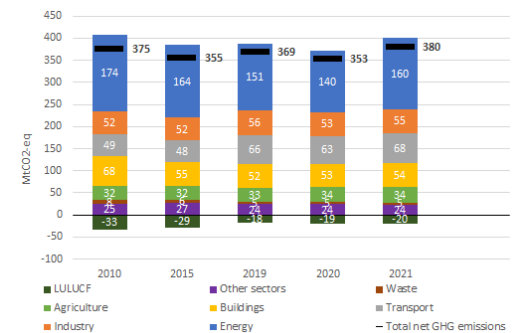


(1) Composition of bioenergy, in % of gross inland consumption of energy.

Source: Eurostat

3. GREENHOUSE GAS EMISSIONS

Graph 13: Greenhouse gas emissions by sector



(1) Energy sector refers to electricity and heat production and petroleum refining.

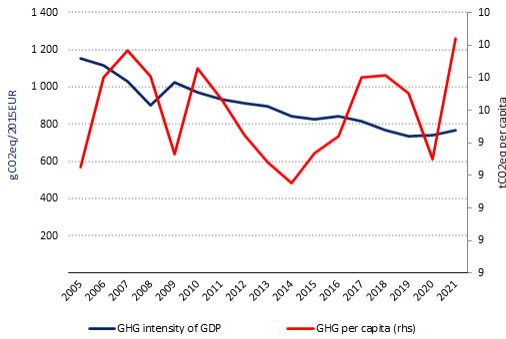
(2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use.

(3) Buildings include emissions from energy use in residential and tertiary buildings, and energy use in agriculture and fishery sectors.

(4) Total net GHG emission including LULUCF and excluding international aviation.

Source: EEA

Graph 14: **GHG per capita and GHG intensity of GDP**



(1) Total greenhouse gas emissions, including LULUCF and excluding international aviation.

Source: Greenhouse gas inventory 1990-2021 (EEA). Real GDP in 2015-prices (AMECO, European Commission). Population (Eurostat).

- With 768 gCO₂eq/2015EUR, Poland lies above the EU average in terms of GHG intensity of GDP.
- With 10 tonnes of CO₂ equivalent per capita, Poland is above the EU average in terms of GHG emissions per capita.
- For more detailed information on country profiles see [Progress made in cutting emissions \(europa.eu\)](#).

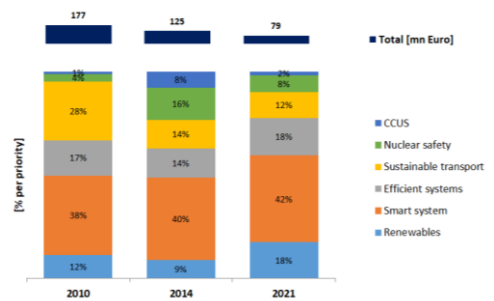
Research, innovation and competitiveness

1. INVESTMENT IN R&I

- Public investment in research and innovation (R&I) in Energy Union priorities⁽³⁾ decreased from 0.031% in 2014 to 0.014% in 2021 (share of GDP).

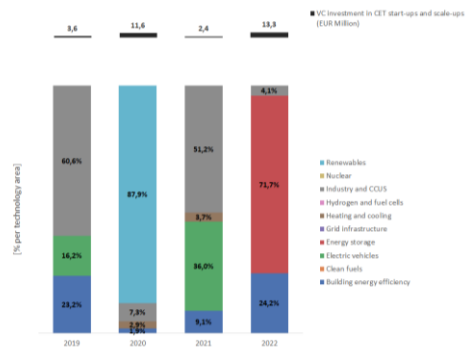
⁽³⁾ Renewables, smart system, efficient systems, sustainable transport, CCUS and nuclear safety, COM(2015) 80 final ('Energy Union Package').

Graph 15: **Public investment in Energy Union R&I priorities**



Source: JRC SETIS (2023)

Graph 16: **Venture capital investment in clean energy technology (start-ups and scale-ups)**

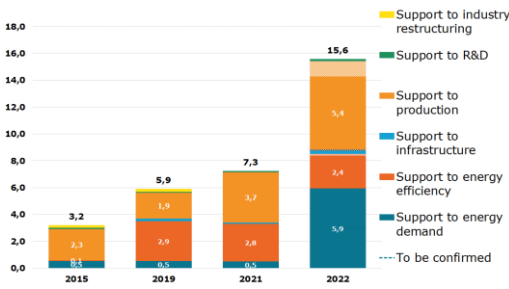


(1) Firms typically use venture capital to expand, break into new markets, and grow faster. Venture capital is essential for the growth of innovative firms and it is key to foster the EU's competitiveness and to strengthen the EU's technology sovereignty in the clean energy sector.

Source: JRC SETIS (2023)

2. ENERGY SUBSIDIES

Graph 17: Energy subsidies by purpose

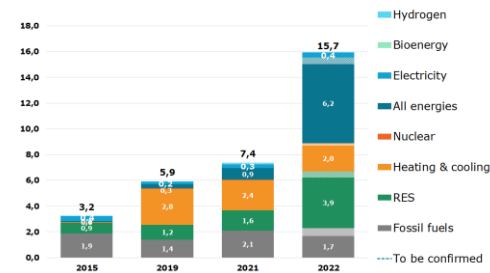


(1) Subsidies in EUR 2022 billion

(2) Some 2022 data were not fully available or validated at the time the study was completed (August 2023). For missing 2022 values, 2021 data were taken as a basis for an estimate. The estimated data are referred to as 'to be confirmed' in the graphs and indicated by hatching.

Source: Enerdata. Inventory of energy subsidies in the EU27 - 2023 edition.

Graph 18: Energy subsidies by carrier



(1) Subsidies in EUR 2022 billion

(2) Some 2022 data were not fully available or validated at the time the study was completed (August 2023). For missing 2022 values, 2021 data were taken as a basis for an estimate. The estimated data are referred to as 'to be confirmed' in the graphs and indicated by hatching.

Source: Enerdata. Inventory of energy subsidies in the EU27 - 2023 edition

European Semester 2023

Country Specific Recommendation (Energy):

Accelerate the phase-out of fossil fuels and the deployment of renewable energy. Reform the legal framework for grid connection permitting and for renewable energy sources, including energy communities, biomethane and renewable hydrogen. Implement measures to promote energy

⁽⁴⁾ Council of the European Union 9847/1/23.

savings and gas demand reductions. Scale up investment in energy efficiency for buildings and decarbonise the heat supply in district heating to address energy poverty. Step up policy efforts aimed at the provision and acquisition of the skills needed for the green transition, including for building renovation.⁽⁴⁾

For more information see the [2023 European Semester Country Reports](#).

National Energy and Climate Plan (NECP)

- **The draft updated NECP** was not submitted yet to the European Commission.
- For more information see the dedicated [webpage of the European Commission on the NECPs](#).

Recovery and Resilience Plan (RRP) and REPowerEU chapter

- **The Polish RRP was approved by the Council on 17 June 2022.**
- The implementation of the measures proposed in the RRP would allow Poland to access **EUR 23.9 billion in grants** and **EUR 11.5 billion in loans**.
- **42.7%** of these funds are **allocated** for measures contributing **to climate objectives**.
- The Commission has not disbursed so far funds to Poland. No payment request has been submitted so far.
- On 31 August Poland submitted a **request to revise its RRP**, adding a **REPowerEU chapter**, which is currently being assessed by the Commission.
- The amended RRP takes into account the **revised RRF grant allocation** for Poland decreased to EUR 22.5 billion. It includes also the EUR 2.76 billion **REPowerEU grant allocation**. Poland has also requested EUR 23 billion **additional loans**. The **total amount available** is therefore EUR 59.76 billion.

- For more information visit the [Recovery and Resilience Scoreboard \(europa.eu\)](https://european-council.europa.eu/media/e0000000-0000-0000-0000-000000000000/asset/document/2020/05/20200514_recovery_and_resilience_scoreboard_en.pdf).