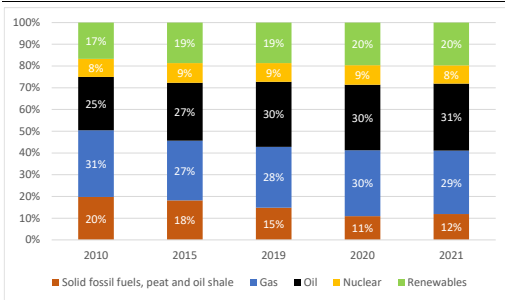


State of the Energy Union 2023 Romania

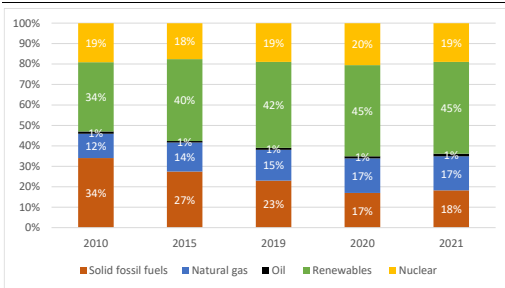
Key energy figures

Graph 1: Energy mix



Source: Eurostat

Graph 2: Electricity mix



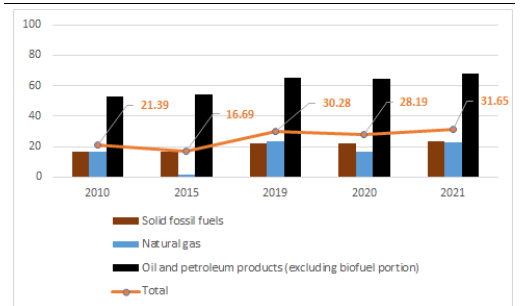
Source: Eurostat

- Fossil fuels still play a substantial role in Romania's energy mix.** The share of natural gas in Romania's energy mix has been stable, from 31% in 2010 to 29% in 2021. The share of coal and coal products dropped from 20% in 2010 to 12% in 2021. On the other hand, the share of oil increased significantly, from 25% in 2010 to 31% in 2021.
- Renewable energy** plays an important role in decarbonising Romania's energy system. However, more efforts are necessary to ensure the renewable energy plays a much more important role in the national energy mix.

Security, solidarity and trust

1. DIVERSIFICATION OF ENERGY SOURCES AND REDUCTION OF IMPORT DEPENDENCY

Graph 3: Import dependency on fossil fuels



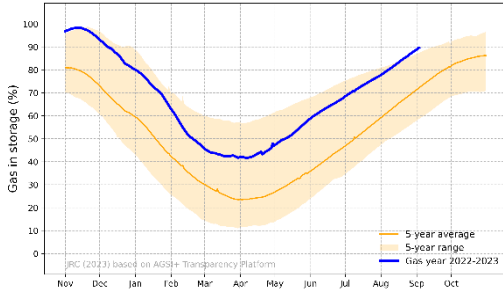
- In percentages
- Combustible renewables and electricity are excluded
- The total amount takes into consideration the energy mix of the country

Source: Eurostat

- Thanks to its significant **internal production of natural gas**, Romania is less exposed to Russian gas than many other Member States.
- It is the **second largest gas producer in the EU** after the Netherlands, able to generate a large part (up to 80%) of the natural gas it needs.

2. FLEXIBILITY OF THE ENERGY SYSTEM

Graph 4: Gas storage levels



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

- Romania has **six underground gas storage facilities** with a total capacity of around **3.36 bcm**.
- On 16 October, the country's storage capacity was filled to **100%**.

Integrated internal energy market

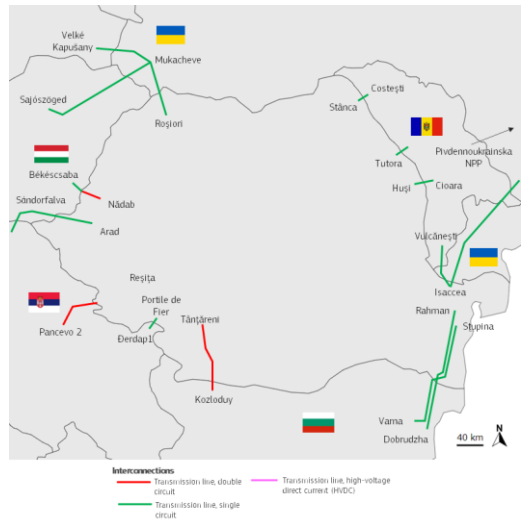
1. ELECTRICITY INTERCONNECTIVITY

2023	2030 target
18.27%	At least 15%

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

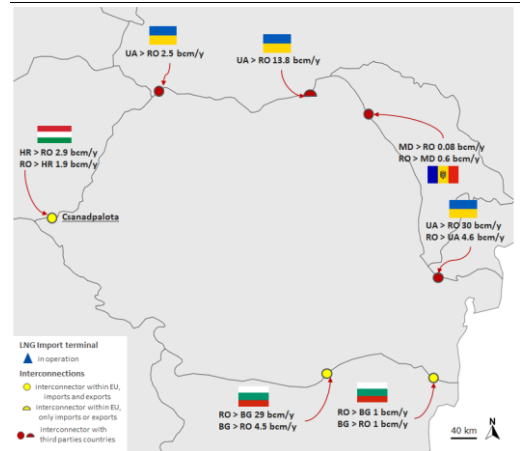
2. ENERGY TRANSMISSION INFRASTRUCTURE

Map 1: Cross-border electricity interconnections



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

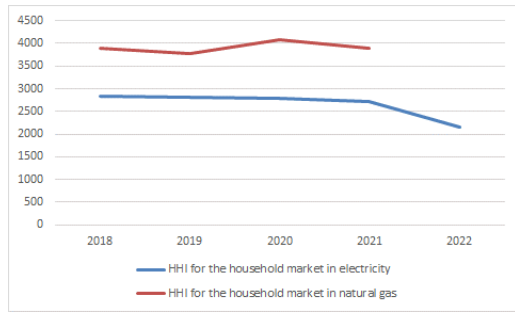
Map 2: Cross-border gas interconnections



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



(1) No data available for HHI in natural gas household markets in 2022.

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

- In 2022 in Romania, the market share of the three largest suppliers reached 67% for electricity.

Rollout of electricity smart meters

- Data on the % of household consumers equipped with smart meters in 2022 is not available. ⁽¹⁾

4. ENERGY POVERTY AND JUST TRANSITION

Table 1: Energy poverty

	Romania			EU		
	2020	2021	2022	2020	2021	2022
Arrears on utility bills (households %)	13.9%	7.3%	17.8%	6.5%	6.4%	6.9%
Inability to keep home adequately warm (household %)	10.0%	10.1%	15.2%	7.5%	6.9%	9.3%
Population living in dwelling with presence of lead, damp and rot (population %)	10.0%	-	-	14.8%	-	-

Source: Eurostat

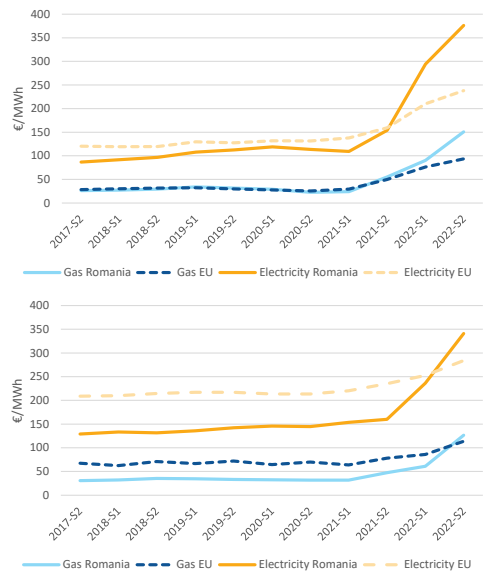
- **Just transition plan:** The Romanian Territorial Just Transition Plans (TJTP) outline the transition away from coal mining in regions such as the Jiu Valley. The plans set out how the Just Transition Fund (JTF), with a national allocation of 2.1€ billion, will support the development of renewable energy sources, economic diversification, and modernisation of industries. The regions that will receive support from the JTF are primarily those heavily

⁽¹⁾ ACER, CEER. Energy Retail and Consumer Protection, 2023 Market Monitoring Report.

dependent on industries such as coal mining. Coal phase-out commitment in 2032.

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

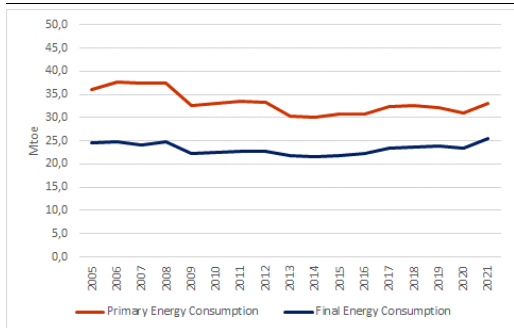
(2) On gas, the band consumption is D2 for households and I4 for industry

Source: Eurostat

Energy efficiency

1. ENERGY EFFICIENCY

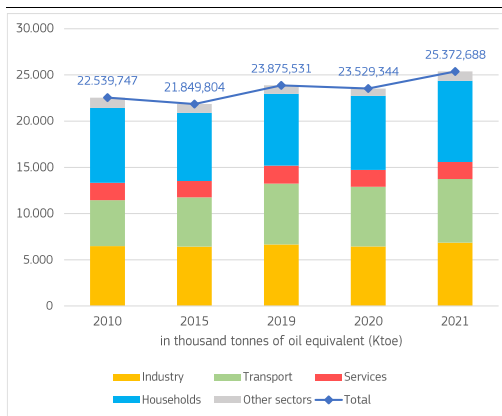
Graph 7: Primary and final energy consumption



Source: Eurostat

- In 2021, Romania's **Primary Energy Consumption (PEC)** amounted to 33.09 Mtoe, 3.2% higher than in 2019, while its **Final Energy Consumption (FEC)** amounted to 25.37 Mtoe, 6.3% higher than in 2019, to a large extent due to the COVID-19 crisis recovery.

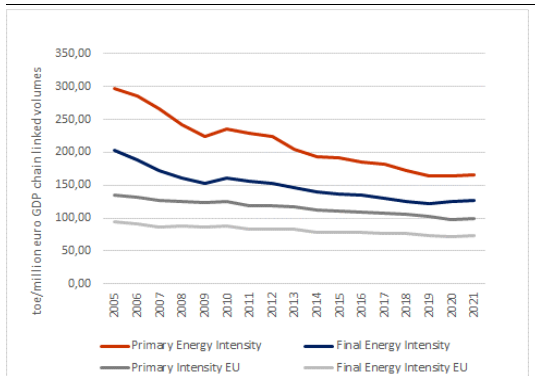
Graph 8: Final energy consumption by sector



(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

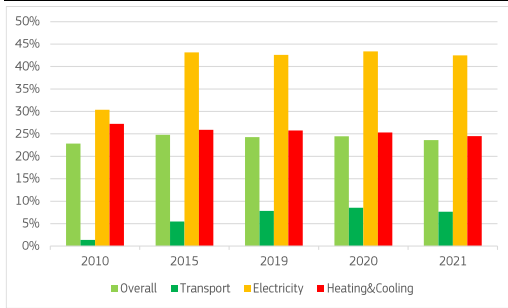
2. ENERGY SAVINGS IN BUILDINGS

- In 2020 there were **5.3 million of residential buildings** in Romania.
- As per its 2020 Long Term Renovation Strategy (LTRS), **Romania** targets to achieve **-9%** of energy savings **by 2030** compared to **2020** in the building sector.
- In 2021, the final energy consumption of residential buildings **decreased by 3.02%** compared to 2019.
- As per the European Heat Pump Association (EHPA), there are no data available for Romania.

Decarbonisation and climate action

1. SECTORAL SHARE OF RENEWABLE ENERGY

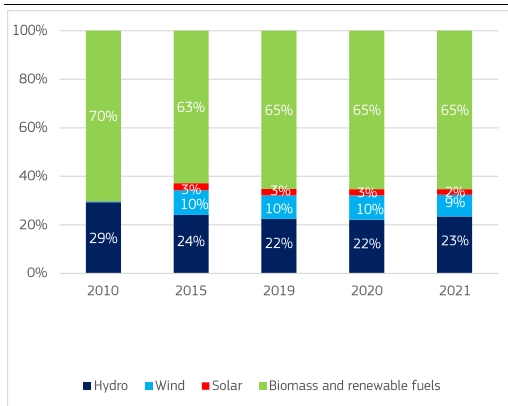
Graph 10: Share of renewable energy sources



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

Source: Eurostat

Graph 11: Renewable energy mix

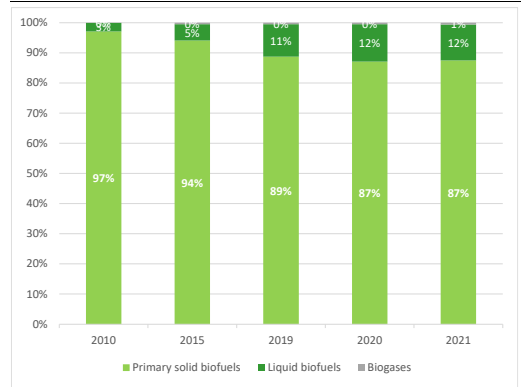


(1) In % of gross final consumption of energy.

Source: Eurostat

2. BIOENERGY DEMAND

Graph 12: Bioenergy mix

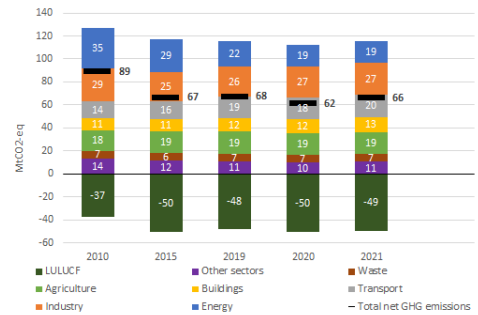


(1) Composition of bioenergy, in % of gross inland consumption of energy.

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.

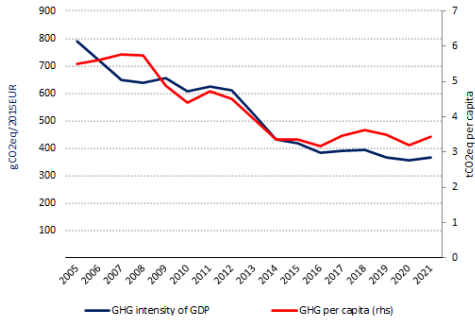
(2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use.

(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 366 gCO₂eq/2015EUR, Romania lies above the EU average in terms of GHG intensity of GDP.
- With 3 tonnes of CO₂ equivalent per capita, Romania is below the EU average in terms of GHG emissions per capita.
- For more detailed information on country profiles see [Progress made in cutting emissions \(europa.eu\)](https://europea.eu).

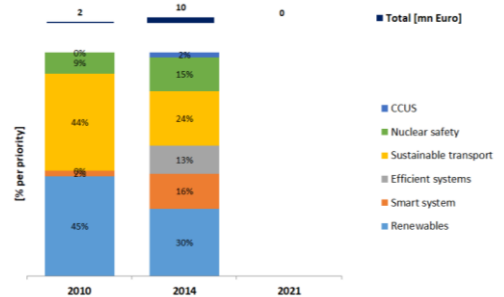
(2) Renewables, smart system, efficient systems, sustainable transport, CCUS and nuclear safety, COM(2015) 80 final ('Energy Union Package').

Research, innovation and competitiveness

1. INVESTMENT IN R&I

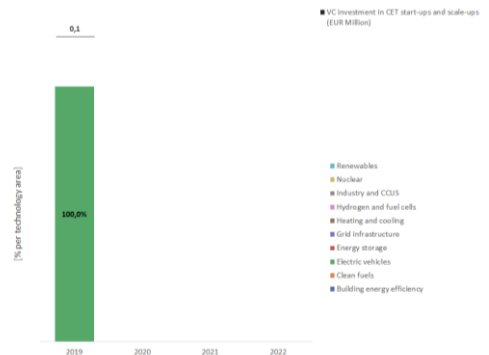
- Public investment in research and innovation (R&I) in Energy Union priorities⁽²⁾ decreased from 3.145% in 2014 to 0.045% in 2021 (share of GDP).

Graph 15: Public investment in Energy Union R&I priorities⁽³⁾



Source: JRC SETIS (2023)

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



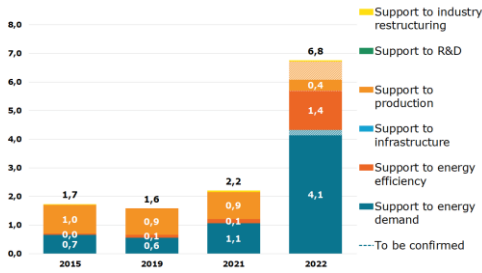
(1) Firms typically use venture capital to expand, break into new markets, and grow faster. Venture capital is essential for the growth of innovative firms, and it is key to foster the EU's competitiveness and to strengthen the EU's technology sovereignty in the clean energy sector.

Source: JRC SETIS (2023)

(3) For 2021, there is no breakdown in Energy Union priorities available.

2. ENERGY SUBSIDIES

Graph 17: Energy subsidies by purpose

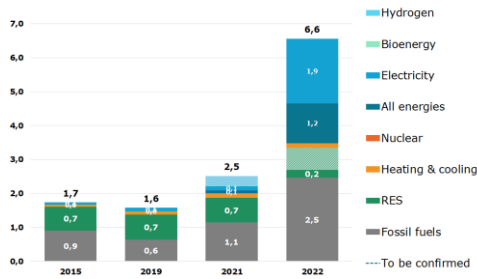


(1) Subsidies in EUR 2022 billion.

(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):

Reduce reliance on fossil fuels and accelerate the clean energy transition, in particular by deploying renewable energy faster and improving grid capacity to allow new capacity to operate in the market. Increase energy efficiency and the

ambition of building renovation efforts, including by providing better access to information and sustainable finance options. Step up policy efforts aimed at the provision and acquisition of the skills needed for the green transition.⁽⁴⁾

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

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 Romanian RRP was approved by the Council on 29 October 2023.**
- The implementation of the measures proposed in the RRP would allow Romania to access **EUR 14.2 billion in grants** and EUR 14.9 billion in loans.
- **41%** of these funds are **allocated** for measures contributing to **climate objectives**.
- **The Commission disbursed so far EUR 9.12 billion to Romania.** A 2nd payment request was disbursed on 29 September 2023.
- On 8 September 2023 Romania submitted a **request to revise its RRP**, adding a **REPowerEU chapter**.
- The amended RRP takes into account the **revised RRF grant allocation** for Romania, which decreased to EUR 12.1 billion. It includes also the EUR 1.4 billion **REPowerEU grant allocation** and EUR 43.2 million **voluntary transfer from the Brexit Adjustment Reserve**. The **total amount available** is therefore EUR 28.5 billion.
- For more information visit the [Recovery and Resilience Scoreboard](#).

⁽⁴⁾ Council of the European Union 9849/1/23.