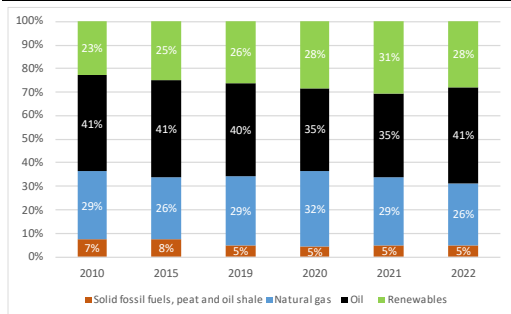


# State of the Energy Union 2024: Croatia

## Key energy figures

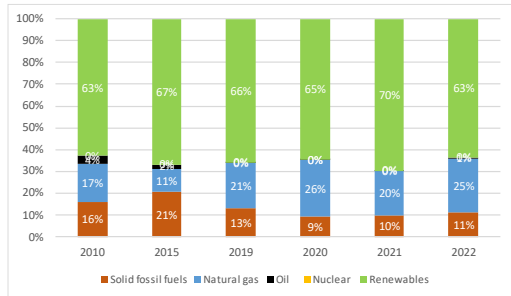
Graph 1: **Energy mix**



(1) The 2022 gross inland energy consumption was 339 314 TJ. (0.6% of the total EU consumption).

Source: Eurostat

Graph 2: **Electricity mix**



(1) The 2022 gross electricity production was 14.1 TWh. (0.5% of the total EU production).

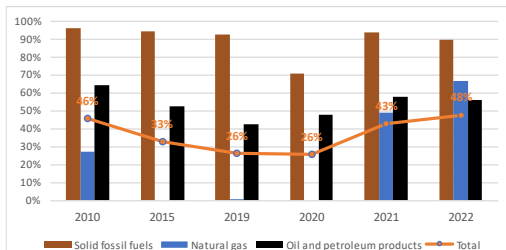
Source: Eurostat

- Fossil fuels account for 72% of Croatia's **energy mix** (compared to 69% at EU level). The share of renewables was 28%.
- The **electricity mix** of Croatia is dominated by renewable energy sources with 63.5% (compared to 39.4% at EU level). Fossil fuels accounted for the remaining 36.5% (compared to 38.6% at EU level).

## Security, solidarity and trust

### 1. DIVERSIFICATION OF ENERGY SOURCES AND REDUCTION OF IMPORT DEPENDENCY

Graph 3: **Import dependency on fossil fuels**



(1) The graph shows the Member States' import dependency on third countries by fuel type.

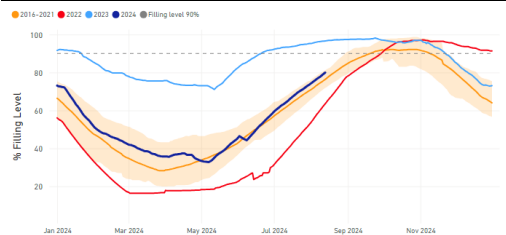
(2) Combustible renewables and electricity are excluded.

(3) The total amount takes into consideration the energy mix of the country.

Source: Eurostat

### 2. FLEXIBILITY OF THE ENERGY SYSTEM

Graph 4: **Storage levels in Croatia**



Source: JRC calculation based on AGSI+ Transparency Platform, 2024

- Croatia has **one underground gas storage facility** with a total capacity of **0.44 bcm**, representing 18% of its annual gas consumption in 2022.
- On 17 August 2024, the country's storage capacity was filled to 82.08%.

# Integrated internal energy market

## 1. ELECTRICITY INTERCONNECTIVITY

Table 1: Electricity interconnectivity

2024	2030 target
36.7 %	At least 15%

1) The electricity interconnectivity is a ratio of electricity import capacity of a given Member State (sum of net transfer capacities of interconnectors with neighbouring Member States) and its total power generation capacity. The 2030 level represents the general interconnectivity target of 15%.

Source: European Commission's own calculations based on the ENTSO-E Winter Outlook 2023-2024 data

## 2. ENERGY TRANSMISSION INFRASTRUCTURE

Map 1: Cross-border electricity infrastructure



Source: DG ENER map recreation (based on ENTSO-E)

Map 2: Cross-border gas infrastructure



(1) ACER, 2024 Retail Market Monitoring Report, Energy retail and decarbonisation (forthcoming).

(1) The capacities are based on ENTSO-G 2024 capacity dataset (as of 11 January 2024) and the ENTSO-G Transparency Platform. Source: DG ENER map recreation (based on ENTSO-G)

## 3. MARKET INTEGRATION

### Rollout of electricity smart meters

- In Croatia there is a limited rollout of smart meters (19%) as there is no positive rollout decision yet adopted.<sup>(1)</sup>

### Diversification of gas supplies

- In 2023, Croatia had 8 natural gas supply sources, compared to 6 in 2021. Its three largest suppliers accounted for 71%, with the United States being the main supplier, holding a share of 35%. In 2021, the United States with 31%, its own domestic production with 26%, and Russia (16%) were Croatia's biggest natural gas supply sources.<sup>(2)</sup>

## 4. ENERGY POVERTY, SOCIAL CLIMATE PLAN AND JUST TRANSITION

Table 2: Energy poverty

Indicator	Evolution compared to			EU average
	2023	2021	2017	
EED NECPs four main indicators				
Inability to keep home adequately warm	6.2	+ 0.5 pp	-1.2 pp	10.6
Arrears on utility bills	11.6	-3.6 pp	-9.4 pp	6.9
Share of pop. With leak, damp or rot in dwelling	5.6	-3.8 pp (2020)	-6.8 pp	15.5
AROP (At risk of poverty)	19.3	+ 0.1 pp	-0.7pp	16.2

Source: Eurostat

### Social Climate Plan

- Member States need to submit these plans to the European Commission by June 2025.
- Maximum financial allocation for Croatia: EUR 1 403 million or 1.94 % of total SCF.

### Just Transition Plan

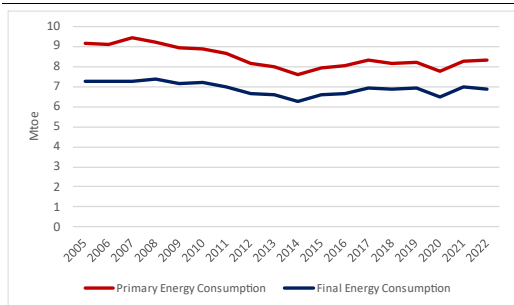
- The Croatian Territorial Just Transition Plans (TJTP) outline the transition away from fossil fuels and heavy industry in the coal and carbon-intensive regions of Međimurje County, Osijek-Baranja County, Požega-Slavonia County, Virovitica-Podravina County, Zadar County. The plans set out how the Just Transition Fund (JTF), with a national allocation of EUR 185 million, will support the development of renewable energy sources, economic diversification, and modernisation of industries. Croatia confirmed a commitment to phase out coal by 2033.

(2) ACER-CEER Annual Report Monitoring: the Internal Gas Market in 2022 and 2023.

# Energy efficiency

## 1. ENERGY EFFICIENCY

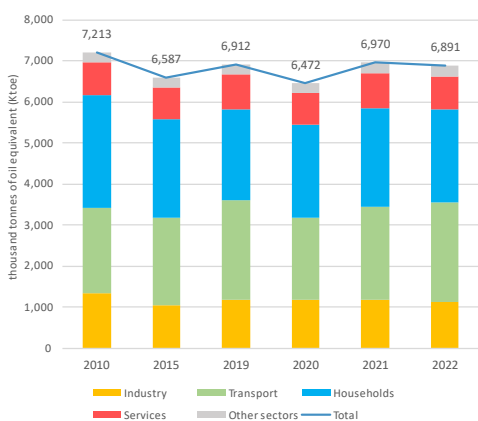
Graph 5: Primary and final energy consumption



Source: Eurostat

- In 2022, Croatia's **Primary Energy Consumption (PEC)** amounted to 8.3 Mtoe, 0.4% higher than in 2021, while its **Final Energy Consumption (FEC)** amounted to 6.9 Mtoe, 1.1% lower than in 2021.

Graph 6: Final energy consumption by sector

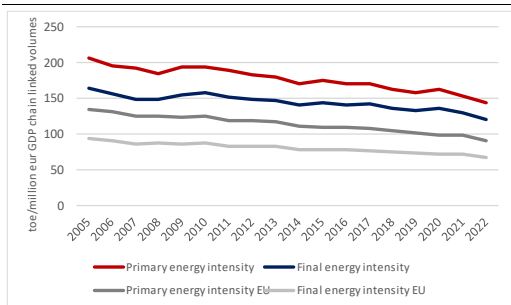


(1) Final energy consumption excludes consumption of the energy sector (including transformation and distribution losses) and non-energy use of energy carriers.

Source: Eurostat

<sup>(3)</sup> Following JRC's methodology (see for reference "Energy Consumption and Energy Efficiency trends in the EU, 2000 – 2020).

Graph 7: Primary and final energy intensity



Source: Eurostat

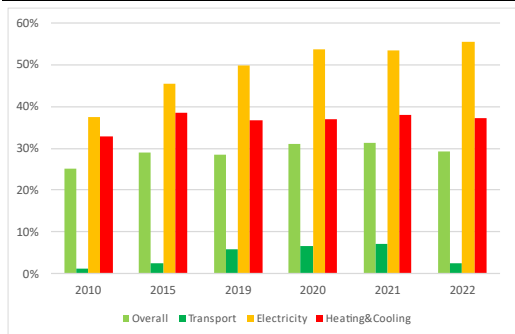
## 2. ENERGY PERFORMANCE OF BUILDINGS

- In 2022, Final Energy Consumption (FEC) in the Croatian **residential sector** was **2.3 Mtoe**, representing a **reduction of 6.3%** compared to 2021. In the **services sector**, FEC was **0.8 Mtoe**, with an **4.6% decrease** compared to 2021. However, climate corrected data<sup>(3)</sup> show a **residential FEC increase of 4.8%** from 2021 to 2022, indicating that the above reduction is mostly climate-related (e.g. milder winter) rather than linked with an improvement of the building stock.
- Heating and cooling account for around **80%** of the country's residential final energy consumption, with renewables supplying approximately **37%** of the gross final energy consumption for heating and cooling. As per the European Heat Pump Association (EHPA), there are no data available for Croatia.
- In 2023, **11.6%** of the total population was experiencing difficulties on paying their utility bills while **6.2%** was not able to keep their home adequately warm over the cold periods of the year (with a mixed evolution compared to 2021, when such figures were, respectively, 15.2% and 5.7%). This underlines the importance to increase rate and depth of building renovation, specifically of worst-performing buildings.

# Decarbonisation and climate action

## 1. SECTORAL SHARE OF RENEWABLE ENERGY

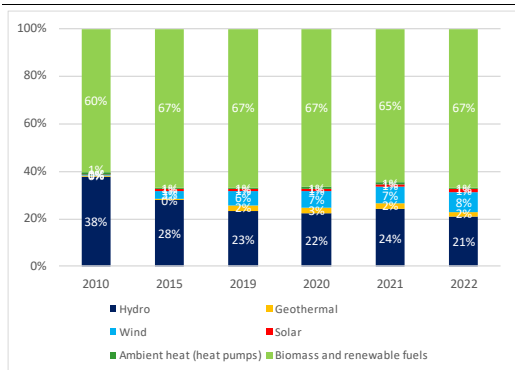
Graph 8: Share of renewable energy sources



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

Source: Eurostat

Graph 9: Renewable energy mix

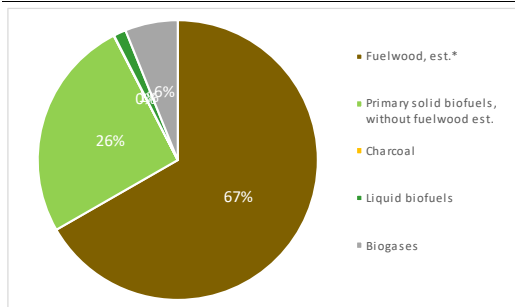


(1) In % of gross final consumption of energy.

Source: Eurostat

## 2. BIOENERGY MIX

Graph 10: Bioenergy mix



(1) In % of gross final consumption of energy (2022).

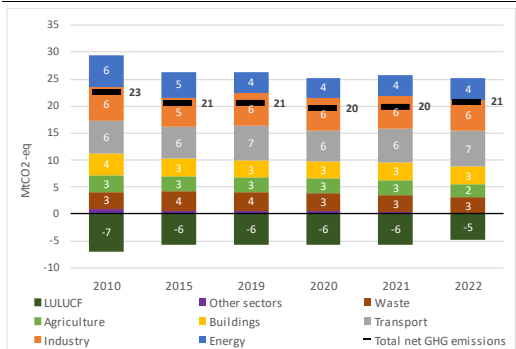
(2) \* Fuelwood estimate, based on the Primary solid biofuels consumption in Other sectors, Eurostat and industry secondary data, DG ENER estimations.

Source: Eurostat and DG ENER

- For more information see the dedicated [website on biomethane country fiches](#).

## 3. GREENHOUSE GAS EMISSIONS

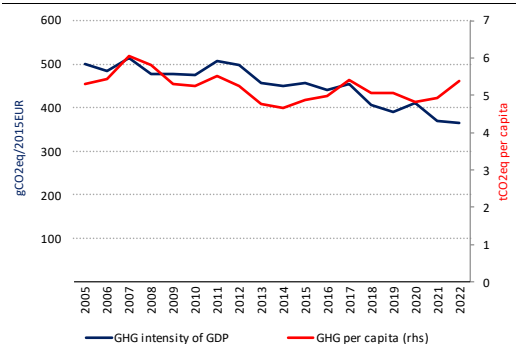
Graph 11: Greenhouse gas emissions by sector



Based on UNFCCC GHG Inventory reporting as per the IPCC categories: (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: Greenhouse gas inventory 1990-2022 (EEA)

Graph 12: GHG per capita and GHG intensity of GDP



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

Source: Greenhouse gas inventory 1990-2022 (EEA). Real GDP in 2015-prices (AMECO, European Commission). Population (Eurostat).

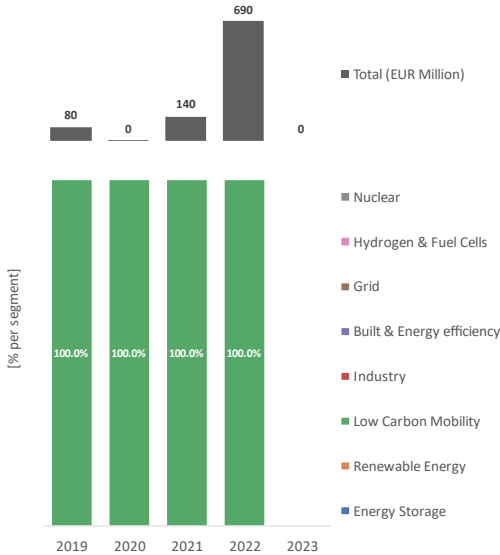
- With 364 gCO2eq/2015EUR, Croatia lies above the EU average in terms of GHG intensity of GDP.
- With 5 tonnes of CO2 equivalent per capita, Croatia is below the EU average in terms of GHG emissions per capita.
- For more detailed information on country profiles see [Progress on climate action \(europa.eu\)](#).

# Research, innovation and competitiveness

## 1. INVESTMENT IN R&I

- Data related to public investment in Energy Union R&I priorities<sup>(4)</sup> are not available<sup>(5)</sup>.

Graph 13: **Venture capital investment in net-zero 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 net-zero energy sector.

**Source:** JRC elaboration based on PitchBook data (08/2024)

## 2. NET-ZERO ENERGY TECHNOLOGIES

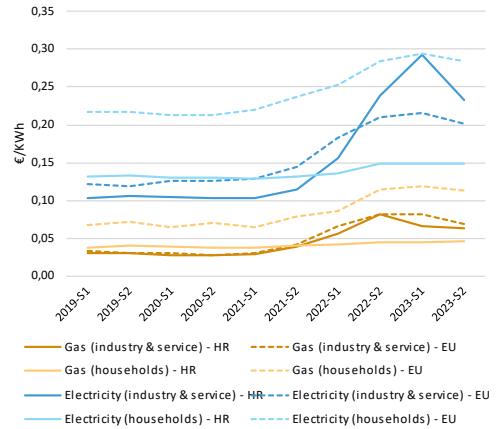
- Croatia has some footprint in the manufacturing of PV modules, as well as battery manufacturing, where an increase is expected in the coming years. Croatia has a module manufacturing capacity of approximately one million modules a year, which translates into roughly 330 MW, operated by a Croatian producer based in Varaždin. There is some battery manufacturing taking place domestically, such as in Križevci. Also, battery management systems are designed and produced by a local automotive manufacturer, which also has plans to launch a new division dedicated to stationary energy storage systems (ESS), with

<sup>(4)</sup> Renewables, smart system, efficient systems, sustainable transport, CCUS and nuclear safety, COM(2015) 80 final ('Energy Union Package').

mass production set to start in 2025. Croatia remains fully dependent on imports for wind rotor components.

## 3. ENERGY PRICES DEVELOPMENT

Graph 14: **Croatia's energy retail prices for households and industry & service**



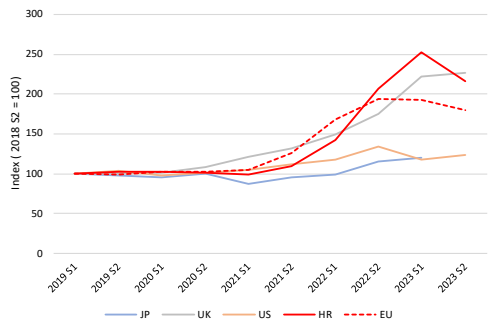
(1) For industry, consumption bands are I3 for gas and IC for electricity, which refer to medium-sized consumers and provide an insight into affordability.

(2) For households, the consumption bands are D2 for gas and DC for electricity.

(3) Industry prices are shown without VAT and other recoverable taxes/levies/fees as non-household consumers are usually able to recover VAT and some other taxes.

**Source:** Eurostat

Graph 15: **Trends in electricity prices for non-household consumers (EU and foreign partners)**



(1) For Eurostat data (EU and HR), the band consumption is ID referring to large-sized consumers with an annual consumption of between 2 000 MWh and 20 000 MWh, such as in electricity intensive manufacturing sectors, and gives an insight into international competitiveness.

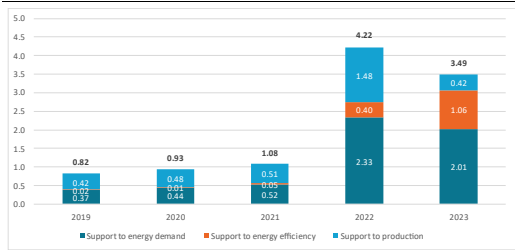
(2) JP = Japan

**Source:** Eurostat, IEA

<sup>(5)</sup> Source: JRC SETIS 2024

## 4. ENERGY SUBSIDIES

Graph 16: Energy subsidies by purpose

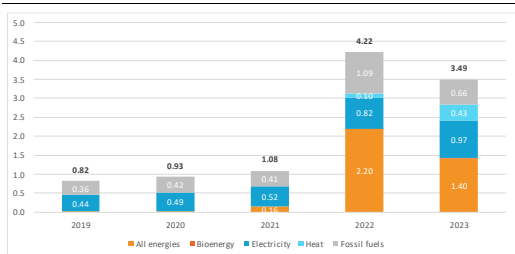


(1) Subsidies in EUR 2023 billion

(2) Some 2023 data were not fully available or validated at the time the study was completed (August 2024). For missing 2023 values, 2022 data were taken as a basis for an estimate.

Source: Enerdata. Inventory of energy subsidies in the EU27 – 2024 edition

Graph 17: Energy subsidies by carrier



(1) Subsidies in EUR 2023 billion

(2) Some 2023 data were not fully available or validated at the time the study was completed (August 2024). For missing 2023 values, 2022 data were taken as a basis for an estimate.

Source: Enerdata. Inventory of energy subsidies in the EU27 – 2024 edition

## European Semester 2024

- **No Country Specific Recommendation for Energy<sup>(6)</sup>**
- For more information see the [2024 European Semester Country Report](#).

## National Energy and Climate Plan (NECP)

- The **draft updated NECP** was submitted to the European Commission in July 2023.
- Member States were due to submit their **final updated NECP by 30 June 2024**, taking into account the Commission recommendations.
- **The final updated NECP** was not submitted yet to the European Commission.

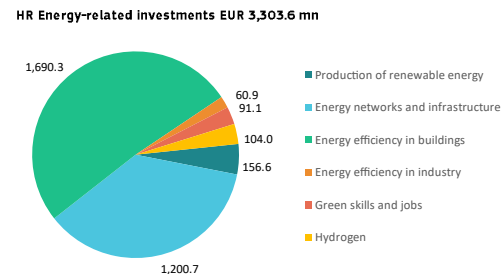
<sup>(6)</sup> Council of the European Union 11703/24.

- For documents and information see the dedicated [webpage of the European Commission on the NECPs](#).

## Recovery and Resilience Plan (RRP and REPowerEU chapter)

- The Croatian RRP has a total allocation of EUR 5.8 billion in grants and EUR 4.2 billion in loans, with 39% of available funds supporting climate objectives.
- **EUR 3.3 billion are allocated to energy-related measures**, with the largest amount for **energy efficiency in buildings** [EUR 1.7 billion]:
  - **Renovation of at least 619 000 m<sup>2</sup> residential buildings, 1.25 million m<sup>2</sup> of public buildings** and 31 000 m<sup>2</sup> of buildings with the status of a cultural good, achieving at least 50% reduction on energy consumption for heating and an increase of 30% primary energy savings.
- In July 2024 the Commission disbursed the 5<sup>th</sup> payment of EUR 821.7 million to Croatia. The 6<sup>th</sup> payment request is expected by the end of 2024.

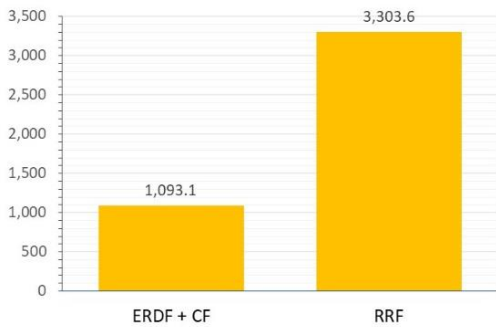
Graph 18: Energy-related investments in the RRP (in EUR million)



Source: European Commission

## EU Funds supporting energy related investments

Graph 19: **Energy-related investments across EU funds (in EUR million) (\*)**



(\*) European Regional Development Fund (ERDF) + Cohesion Fund (CF): comprise EU grants & national cofinancing; RRF: comprise grants & loans. Investment categories can also differ across funds.

**Source:** European Commission

- **Innovation Fund: EUR 121.4 million.** For more information see the webpage [innovation-fund-projects-country\\_en](#).
- **Modernisation Fund: EUR 262 million** (approved and/or confirmed Investments from 2021-2024). For more information see the webpage [modernisationfund.eu](#).
- **CEF-Energy: EUR 7.6 million** (0.4% of total EU contribution, for 2021-2027). For more information see [CINEA's Project Portfolio dashboard](#).