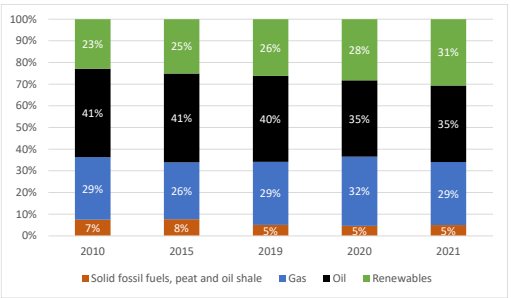
State of the Energy Union 2023 Croatia

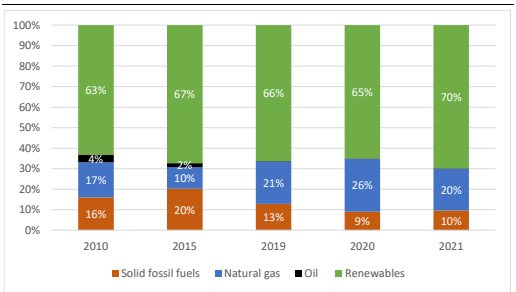
Key energy figures

Graph 1: **Energy mix**



Source: Eurostat

Graph 2: **Electricity mix**



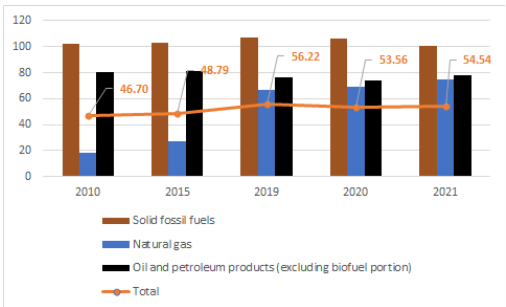
Source: Eurostat

- Fossil fuels still play a substantial role in Croatia's energy mix, but in 2021, the share of renewable energy increased. In total, the share of fossil fuels in Croatia's energy mix was 69%.
- Croatia's **electricity mix is already highly decarbonised, with a 70% share from renewable sources in 2021** and 30% from fossil fuels. However, in 2020, Croatia relied on **natural gas for 71% of its heat** and on primary solid biofuels for up to 24%.

Security, solidarity and trust

1. DIVERSIFICATION OF ENERGY SOURCES AND REDUCTION OF IMPORT DEPENDENCY

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

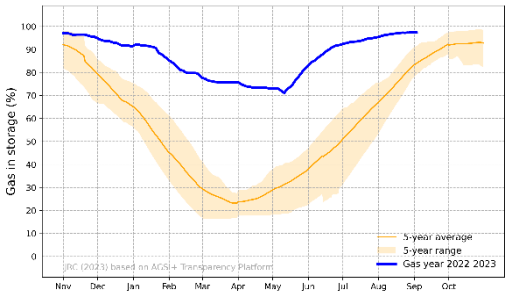


(1) In percentages
(2) Combustible renewables and electricity are excluded
(3) The total amount takes into consideration the energy mix of the country
Source: Eurostat

- Before Russia invaded Ukraine, Croatia was **indirectly dependent on Russian imports through intra-EU trade**. Croatia has an overall high dependence on imported fossil fuels which requires it to step up efforts in the energy transition.
- Croatia is **heavily dependent on gas for its heating,** which is much higher than the EU average (37%). This makes its economy particularly sensitive to global price developments, with implications for energy security and affordability.

2. FLEXIBILITY OF THE ENERGY SYSTEM

Graph 4: **Gas storage levels**



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

- Croatia has **one underground gas storage facility** with a total capacity amounting to **0.49 bcm**.
- On 16 October, the country's storage capacity was filled to **96.19%**.

Integrated internal energy market

1. ELECTRICITY INTERCONNECTIVITY

2023	2030 target
29.46%	At least 15%

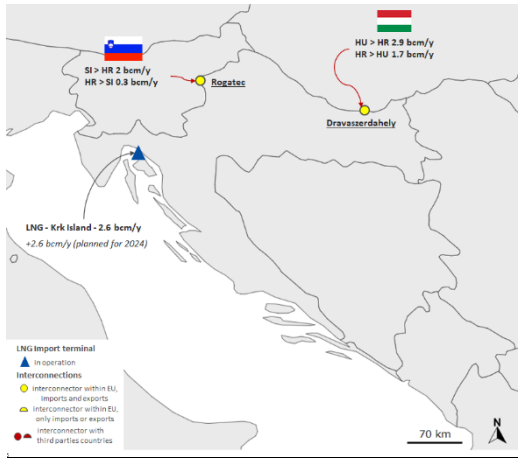
Source: DG ENER's own calculation based on ENTSO-E

2. ENERGY TRANSMISSION INFRASTRUCTURE

Map 1: **Cross-border electricity interconnections**

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

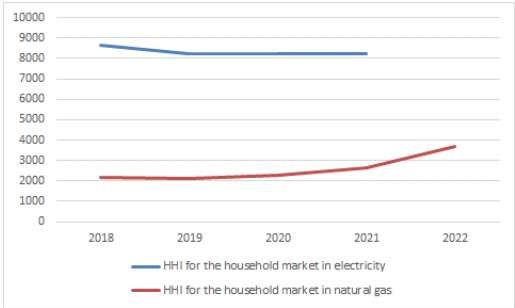
Map 2: **Cross-border gas interconnections**



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) Data regarding the HHI for household market in electricity for 2022 is not available
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

- Croatia had a low electricity smart meter rollout, with 19% of household consumers being equipped with smart meters in 2022. (2)

4. ENERGY POVERTY AND JUST TRANSITION

Table 1: **Energy poverty**

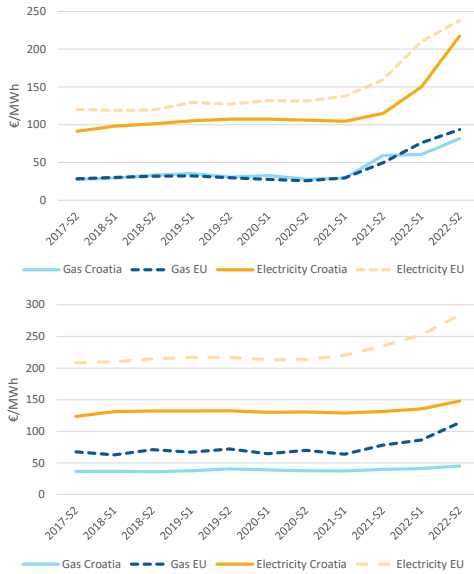
	Croatia			EU		
	2020	2021	2022	2020	2021	2022
Arrears on utility bills (households %)	13.6%	15.2%	14.5%	6.5%	6.4%	6.9%
Inability to keep home adequately warm (household %)	5.7%	5.7%	7.0%	7.5%	6.9%	9.3%
Population living in dwelling with presence of lead, damp and rot (population %)	9.4%	:	:	14.8%	:	:

Source: Eurostat

- **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, with a national allocation of 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.

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

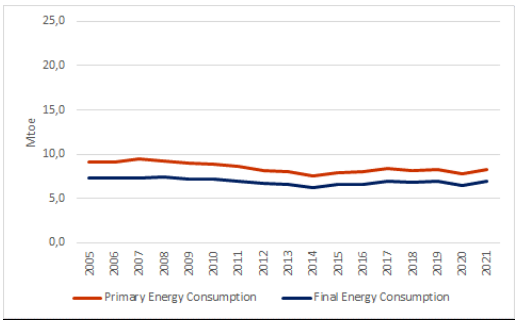
(1) CEER 2023 out of ACER´s Energy Retail and Consumer Protection 2023 Market Monitoring Report.

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

Energy efficiency

1. ENERGY EFFICIENCY

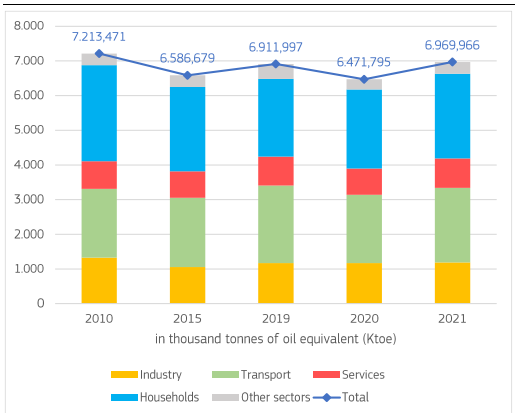
Graph 7: **Primary and final energy consumption**



Source: Eurostat

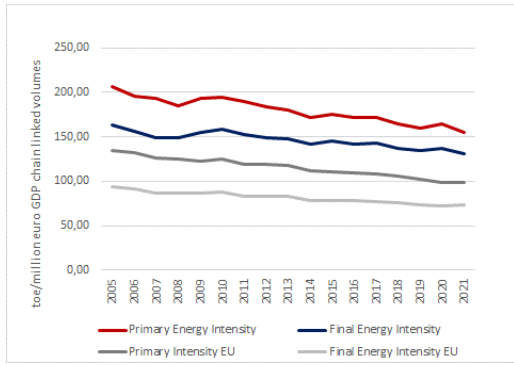
- In 2021, Croatia's **Primary Energy Consumption (PEC)** amounted to 8.27 Mtoe, 0.7% higher than in 2019, while its **Final Energy Consumption (FEC)** amounted to 6.97 Mtoe, 0.8% higher than in 2019, to a large extent due to the COVID-19 crisis recovery.

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

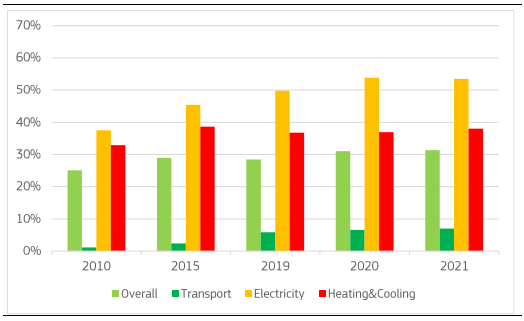
2. ENERGY SAVINGS IN BUILDINGS

- In 2020, there were **762.398 thousand** of **residential buildings** in **Croatia**.
- As per its 2020 Long Term Renovation Strategy (LTRS), **Croatia** foresees that the energy consumed in the building sector **will increase 2 % by 2030** compared to 2017.
- In 2021, the final energy consumption of residential buildings **decreased by 4.27%** compared to 2019.
- As per the European Heat Pump Association (EHPA), there are no data available for Croatia.

Decarbonisation and climate action

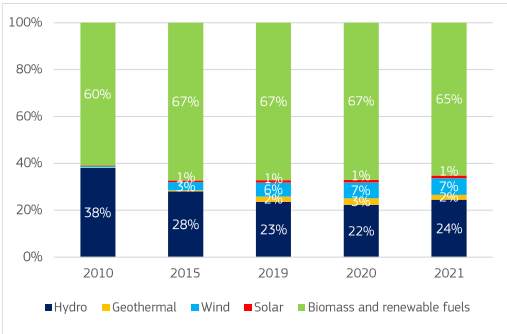
1. SECTORAL SHARE OF RENEWABLE ENERGY

Graph 10: **Share of renewable energy sources**



(1) In % of gross final consumption of energy
Source: Eurostat

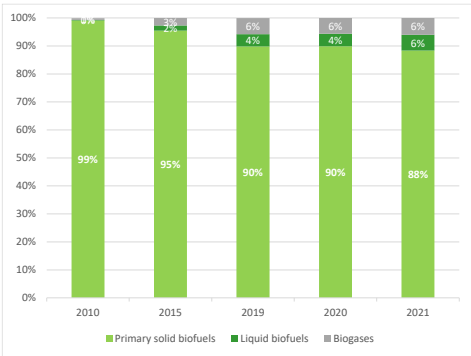
Graph 11: **Renewable energy mix**



(1) In % of gross final consumption of energy
Source: Eurostat

2. BIOENERGY

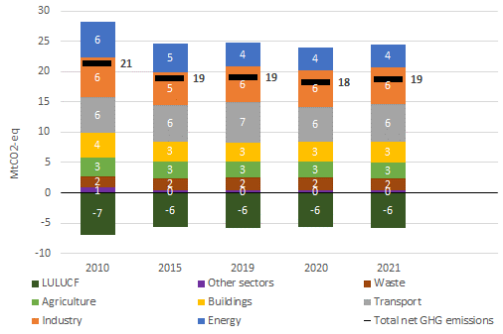
Graph 12: **Bioenergy mix**



(1) Composition of bioenergy, in % of gross inland consumption of energy
Source: Eurostat

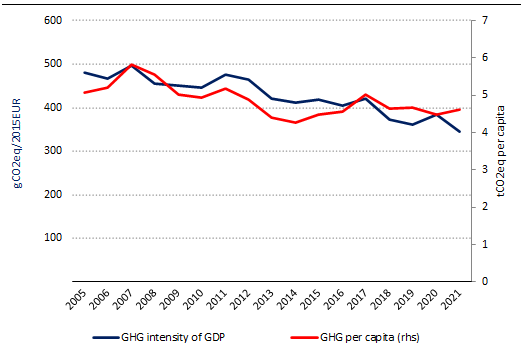
3. GREENHOUSE GAS EMISSIONS

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).

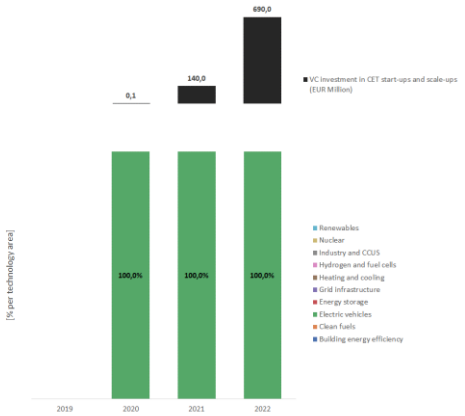
- With 346 gCO2eq/2015EUR, Croatia lies above the EU average in terms of GHG intensity of GDP.
- With 5 tonnes of CO2 equivalent per capita, Croatia is below the EU average in terms of GHG emissions per capita.
- For more detailed information on country profiles see Progress made in cutting emissions (europa.eu).

Research, innovation and competitiveness

1. INVESTMENT IN R&I

- Data for public investment in Energy Union R&I priorities are not available.

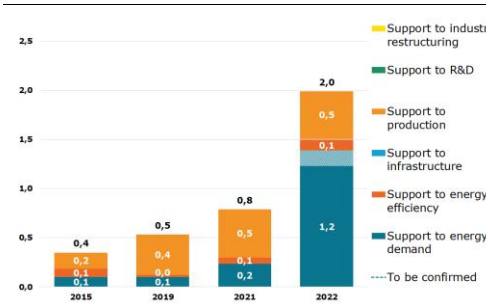
Graph 15: **Venture capital investment in clean energy technology (start-ups and scale-ups)**



(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*

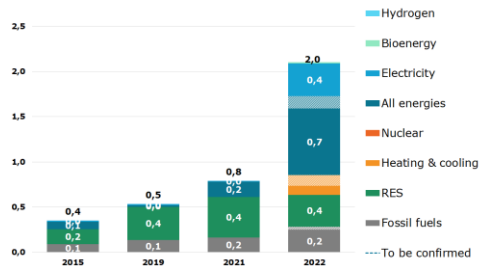
2. ENERGY SUBSIDIES

Graph 16: **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 17: **Energy subsidies by carrier**



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

European Semester 2023

Country Specific Recommendation (Energy):

Reduce overall reliance on fossil fuels by accelerating the deployment of renewables, in particular wind, solar, and geothermal sources, by focusing on finalising the incomplete legislative framework, streamlining administrative procedures for permitting, simplifying the procedures for installing renewable energy sources (i.e. solar photovoltaic facilities) in multi-apartment buildings and by providing more legal uncertainty. Support small-scale renewable energy generation capacity. Further upgrade electricity transmission and distribution grids, in particular by improving the transmission links between the north and south of the country, and advancing the roll-out of smart meters. Accelerate the implementation of energy efficiency measures, including the installation of heat pumps. Reduce dependence on fossil fuels in the transport sector by promoting sustainable solutions, in particular rail and the electrification of road transport. Step up policy efforts aimed at the

provision and acquisition of the skills needed for the green transition.[3]

For more information see the 2023 European Semester Country Report for Croatia.

National Energy and Climate Plan (NECP)

- **The draft updated NECP** was submitted to the European Commission in July 2023.

- For more information see the dedicated webpage of the European Commission on the NECPs

Recovery and Resilience Plan (RRP) and REPowerEU chapter

- **The Croatian RRP was approved by the Council on 28 July 2021.**
- The implementation of the measures proposed in the RRP would allow Croatia to access **EUR 6.3 billion in grants**.
- **40%** of these funds are **allocated** for measures contributing to **climate objectives**.
- **The Commission disbursed so far EUR 2.22 billion to Croatia.** A 3rd payment request was submitted on 24 July 2023 and it's currently under assessment.
- On 31 August 2023, Croatia submitted a **request to revise its RRP**, adding a **REPowerEU chapter**.
- The amended RRP takes into account the **revised RRF grant allocation** for Croatia decreased to EUR 5.5 billion. It includes also the EUR 269 million **REPowerEU grant allocation** and EUR 7.2 million **voluntary transfer from the Brexit Adjustment Reserve**. Croatia has also requested EUR 4.4 billion in **loans**. The **total amount available** is therefore EUR 10.2 billion.
- For more information visit the Recovery and Resilience Scoreboard.

[3] Council of the European Union 9835/1/23