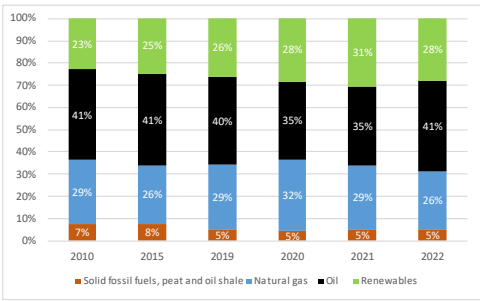
REPowerEU Two Years on_Croatia

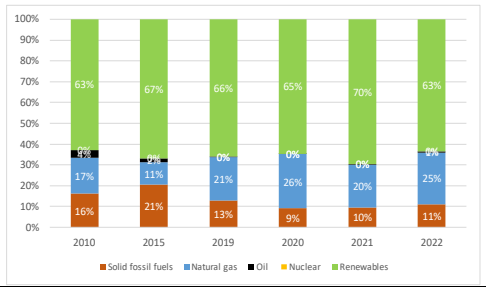
Key energy figures

Graph 1: **Energy mix**



Source: Eurostat

Graph 2: **Electricity mix**



Source: Eurostat

Save energy

1. KEY ENERGY SAVINGS MEASURES

Croatia is implementing energy efficiency measures to contribute to energy security further, such as:

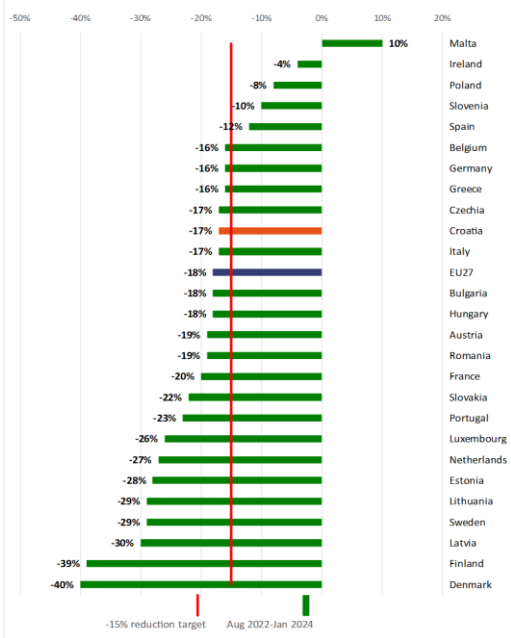
- **Croatia's energy efficiency obligation scheme**, entered into force in 2014 and extended in 2021, is the cornerstone of the country energy efficiency strategy and is expected to deliver a 656 ktoe of final energy savings by 2030, and 70% of the Croatian annual energy savings obligations according to Article 8(7) of the Energy Efficiency Directive[1].
- **Croatia's calls for energy renovation of buildings**, with earmarked EUR 133 million in grants from the Croatian RRP, for renovation of residential buildings, and EUR 1846 million in loans for renovation of multi-apartment buildings, public buildings and buildings with status of a cultural good.
- **Croatia's Environmental Protection and Energy Efficiency Fund** continue to assist with the financing of national energy savings projects and programmes, including the programmes for energy renovation of multi-apartment buildings and single-family houses, as well as with providing assistance with the preparation, implementation and development of programmes and projects.

(1) Croatia Draft Updated NECP 2021-2030.

2. GAS DEMAND REDUCTION

Croatia has reduced its gas consumption by **17%** in the period **August 2022 – January 2024**, below the decrease achieved at EU level (18%) but surpassing the 15% voluntary gas demand reduction agreed at the EU level [2].

Graph 3: **Natural gas demand reduction (August 2022 – January 2024)**



(1) Cyprus does not use natural gas
Source: Eurostat, DG ENER calculations

Diversify energy supplies

1. KEY ACTIONS

Fossil fuels still play an important role in Croatian energy mix, as they accounted for 72% of gross available energy in 2022. This share is expected to marginally decrease to 65% by 2030 [3] Overall, Croatia has a high energy import dependency on non-EU countries, which increased slightly from 47% in 2013 to 60% in 2022.

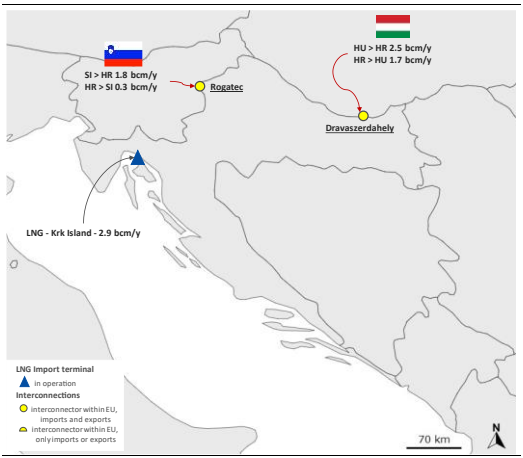
2. GAS INFRASTRUCTURE DEVELOPMENTS

Croatia has quickly reduced its dependency on imported Russian gas by increasing its own production, stepping up the use of an existing LNG terminal. In 2022, Croatia expanded the capacity of the Krk LNG terminal from 2.6 to 2.9 billion cubic meters per year. A final investment decision has been made to further increase the terminal's import capacity to 6.1 billion cubic meters by 2025.

To enable efficient dispatch of natural gas from the expanded Krk terminal within the region, Croatia also plans (in its recovery and resilience plan, RRP) to upgrade its internal transmission infrastructure and interconnection points with Slovenia and Hungary by 2026.

Croatia is also a natural gas producer, with expectations of increasing production from less than 800 million cubic meters in 2023 to over 900 million cubic meters in 2030.

Map 1: **Cross-border gas infrastructure**



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

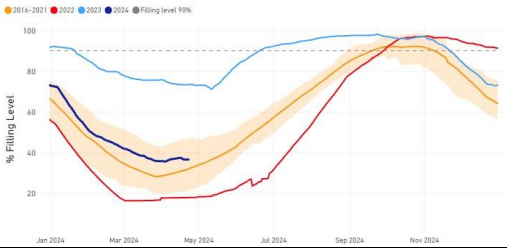
3. GAS STORAGE

Croatia has one underground gas storage facility with a capacity of 0.44 bcm, representing almost 18% of its annual gas consumption in 2022.

Croatia fulfilled its gas storage obligations last winter, reaching 97% by 1 November 2023 [4], and ended the winter season with a storage filled at 35.79% by 1 April 2024.

[2] Council Regulation (EU) 2023/706 of 30 March 2023, amending Regulation (EU) 2022/1369.
[3] According to the Croatian draft updated NECP.
[4] Regulation (EU) 2022/1032 of the European Parliament and of the Council of 29 June 2022 amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage.

Graph 4: **Storage levels in Croatia**



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

Energy platform

- In the **four EU tenders** for joint gas purchase organised **under AggregateEU in 2023**, 113 companies across the EU expressed gas demand of over 54 bcm. 48 suppliers replied with bids of more than 61 bcm, resulting in **over 42 bcm of demand matched**.
- In the **first mid-term tender of 2024**, 19 companies expressed 34 bcm of gas demand for the next 5 years, with **97.4 bcm offered by suppliers**.
- According to the indicative data obtained through AggregateEU, companies from **Croatia** aggregated gas demand of **0.76 bcm** in 2023 under the EU Energy Platform. This represents the equivalent of 30.04% of the country's yearly gas consumption.

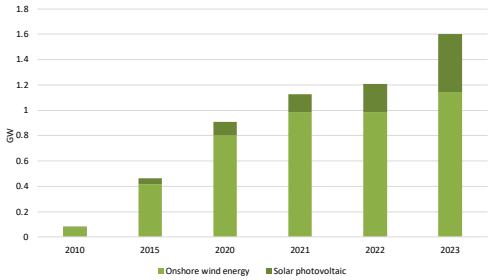
Produce clean energy

1. INSTALLED RENEWABLE ELECTRICITY CAPACITY, IN WIND AND SOLAR

In **2023**, Croatia installed 395 MW of renewable electricity capacity, bringing the total to **4 GW** (vs. 3.5 GW in 2021).

In **2023**, the annual growth rate of installed renewables power capacity rose to **11%** compared to 7.2% in 2021[5].

Graph 5: **Installed solar and wind power capacity (in GW)**



(1) The renewable power capacity data reflects the capacity installed and connected at the end of the calendar year.
(2) In 2023, Croatia installed 156 MW of wind power capacity (vs. 186 MW in 2021).
(3) In 2023, Croatia installed 239 MW of solar photovoltaic capacity (vs. 30 MW in 2021).
Source: IRENA, Renewable capacity statistics, 2024

2. ELECTRICITY INFRASTRUCTURE DEPLOYMENT

Croatia is well interconnected with the neighbouring countries which is reflected in an electricity interconnection level well above the 15% target for 2030. Croatia is carrying out investment under its RRP to strengthen the grid, though further investment in grid development projects would facilitate the integration of renewables, making the energy system more efficient and avoiding energy losses, namely by rewiring existing lines.

The process of upgrading 550 km of the country's high voltage network (220/110 kV) and the underground cables that connect the six islands to the mainland network is progressing.

Two Projects of Common Interest (PCI) have recently been completed, namely the Slovenia-Croatia-Hungary electricity line and the smart electricity grid project Sincro. Grid between Croatia and Slovenia, increasing interconnectivity in the region and allowing for more efficient integration of renewable energy sources.

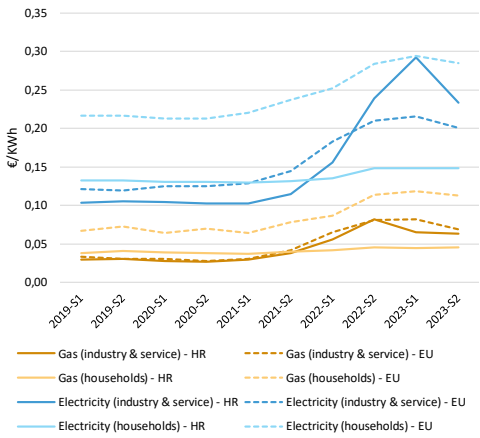
The implementation of the priorities defined in the recently endorsed CESEC Electricity and Renewable Energy Action Plan[6] will be crucial for accelerated infrastructure development and market integration.

[5] International Renewable Energy Agency (2024). Renewable capacity statistics 2024.

[6] CESEC Electricity and Renewable Energy Action Plan (2024).

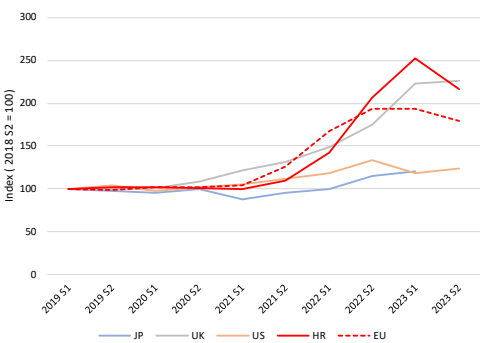
Energy price developments

Graph 6: **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 7: **Trends in electricity prices for non-household consumers (EU and foreign partners)**



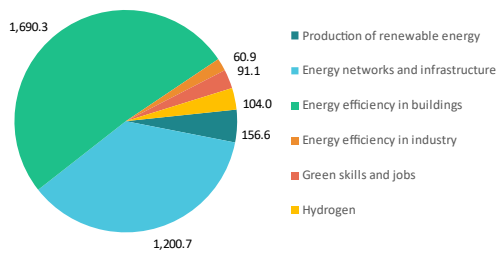
(1) For Eurostat data (EU and HR), the band consumption is ID referring to large-sized consumers with an annual consumption of between 2 000 MWh and 20 000 MWh, such as in electricity intensive manufacturing sectors, and gives an insight into international competitiveness
(2) JP = Japan
Source: Eurostat,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

Smartly combine investments and reforms in the RRP

Amended Recovery and Resilience Plan (RRP), including a REPowerEU chapter:

- Approved by Council: 8 December 2023
- Total amount: EUR 10 billion
- Amount allocated for energy: EUR 3.3 billion [7]
- Climate tagging: RRP: 39 %; REPowerEU chapter: 62.6 %

Graph 8: **Energy-related investments in the RRP (in EUR million)**



Source: European Commission

Tangible results: reforms & investments

- **Energy efficiency**: energy renovation of over 540 000 m^2 of multi-dwelling buildings as well as over 650.000 m^2 of public buildings and over 595 000 m^2 of public buildings damaged by the earthquakes all of which achieving a reduction on energy consumption for heating by at least 50% and deliver an increase of 30% primary energy savings.
- **Infrastructure:** Upgrade of 550 km of high and medium voltage power lines and upgrade of electricity underground cables connecting 6 islands to the mainland grid. Replacement of eight old electricity transformers and reconstruction of two electrical substations on high voltage power transmission system. Installation of 100 000 electricity smart meters and of energy battery storage with a capacity of 100 MWh by 2026.
- **Renewables:** reform to improve the uptake of renewable energy sources and investments in at least 1 500 MW of new installed renewables capacity connected to the grid by 2024 and in the drilling of four exploration geothermal wells.
- **Hydrogen:** installation of 10MW of renewable hydrogen power production capacity (by electrolysis) to be operational by 2025 and

[7] EUR 559 million of gas infrastructure are included in "Energy networks and infrastructure".

launch of public tender for an additional 20MW of production capacity.

Highlights of the National Energy and Climate Plan

- The **draft updated NECP** was submitted to the European Commission in July 2023.
- Member States are due to submit their **final updated NECP by 30 June 2024**, taking into account the Commission recommendations.
- For more information see the dedicated webpage of the European Commission on the NECPs.

Strengthening competitiveness with the Net Zero Industry Act

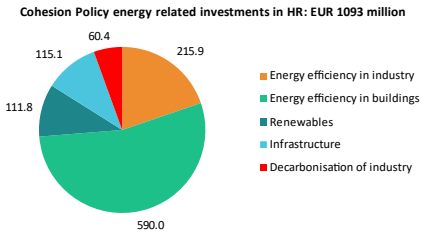
Croatia has some footprint in the manufacturing of PV modules, as well as battery manufacturing, where an increase is expected in the coming years. Although exhibiting one of the lowest solar power generation portfolios, Croatia has a module manufacturing capacity of approximately one million modules 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 mass production set to start in 2025. Croatia remains fully dependent on imports for wind rotor components.

Other EU initiatives

Cohesion Policy provides significant support to REPowerEU in all EU MS, with a total of EUR 89 billion worth of investments focusing on regions most in need in the energy transition.

Most resources concentrate on energy efficiency in the buildings sector (i.e. 720 000 dwellings across the EU will be renovated and public buildings will decrease their energy consumption by 6000 GWh/year) and on energy infrastructure (i.e. 4.9 GWh of additional electricity storage deployed), followed by renewables (e.g. 9.5 GW of additional renewable energy capacities installed).

Graph 9: **2021-2027 energy-related investments in the Cohesion Funds supporting REPowerEU**



Source: Cohesion Open Data[8]

[8] https://cohesiondata.ec.europa.eu/d/hgyj-gyin