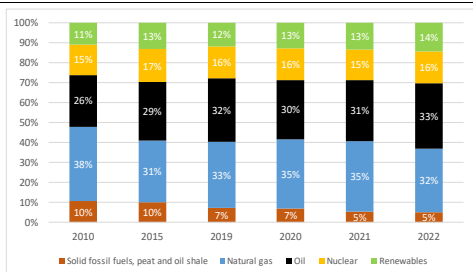


REPowerEU Two Years on_Hungary

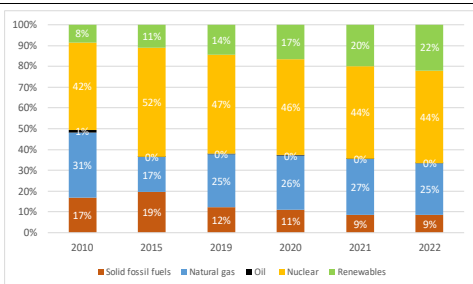
Key energy figures

Graph 1: Energy mix



Source: Eurostat

Graph 2: Electricity mix



Source: Eurostat

Save energy

1. KEY ENERGY SAVINGS MEASURES

Hungary is implementing the following energy efficiency measures:

- **The Energy Efficiency Obligation System:** obliging energy suppliers and distributors to implement programs to deliver yearly savings among final energy users.

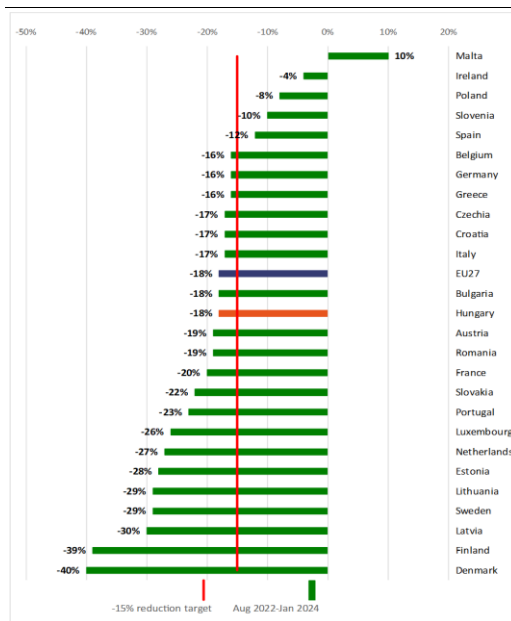
(1) ACER dashboard on emergency measures implemented by the EU MSs and Norway in 2022 in response to energy crisis, Available at: [ACER dashboard on emergency measures implemented by the EU MSs and Norway in 2022](#).

- The **obligation to carry out regular energy inspections** for heating and air-conditioning systems was introduced beginning of 2022.
- Subsidy programs like **Otthon Renovation Aid Scheme or Family Otthon Creation Allowance** continue to support the modernisation of buildings.
- At beginning of 2021, Hungary introduced a renovation **support scheme for vulnerable households** that was extended until end of March 2023.
- In September 2022, in response to the energy crisis, Hungary imposed a 25% reduction in gas consumption on state agencies and state-owned companies and set an 18°C-heating cap for public buildings.
- A programme for promoting energy efficiency in public buildings co-financed from REACT-EU funds and a support scheme for energy efficiency investment in SMEs through Energy Cost and Support Programme⁽¹⁾.
- In the RePowerEU chapter, Hungary foresees a reform and an investment offering technical assistance and financing for energy efficiency measures in residential buildings, with a particular focus on energy poor and vulnerable ones.

2. GAS DEMAND REDUCTION

Hungary has reduced its gas consumption by **18%** in the period **August 2022 – January 2024**, in line with 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

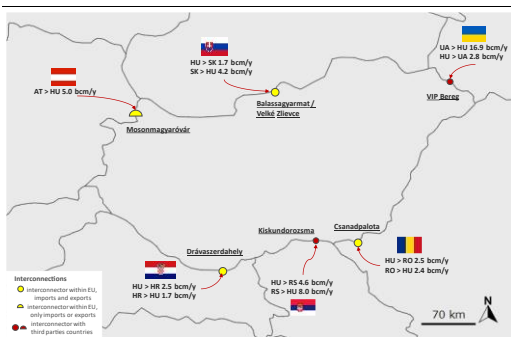
Hungary continues to heavily depend on Russia for most of its imports of fossil fuels and diversification efforts have remained slow. Serbia is the main entry point for Russian gas into the country, following the significant decrease in flows through Ukraine. Following the expiration of the Russia-Hungary transit contract at the end of 2024, Hungary will rely for a dominant share of its supply on a single-entry point, further increasing supply disruption risks.

⁽²⁾ Council Regulation (EU) 2023/706 of 30 March 2023, amending Regulation (EU) 2022/1369.

2. GAS INFRASTRUCTURE DEVELOPMENTS

Plans to secure additional supply sources through increased domestic production and drawing from Azeri gas supplies, future production in Romania, and Greek and Turkish LNG via the “Solidarity Ring” project and the Krk terminal (to be expanded from 2.9 to 6.1 bcm/y), have been thwarted by infrastructure bottlenecks in neighbouring countries and the lack of a clear source diversification strategy. Following successful market tests, the Hungarian transmission system operator (TSO) is cooperating with the respective national TSOs to increase the capacity of the interconnection points with Romania and Slovakia. In 2022, Hungary depended on Russia for around 84% of its oil imports, the highest level since 2014. Moreover, MOL refineries are designed to process mainly Russian Urals crude and would require substantial investment to process other crude grades.

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



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

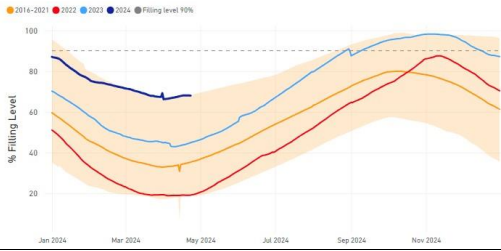
3. GAS STORAGE

Hungary has a large storage capacity of around 6.5 bcm, equal to 67% of its annual gas consumption in 2022. The country operates five underground storage facilities managed by two operators: HEXUM (UGS Szőreg-1) and HGS (Puszttaederics, Zsana-Nord, Kardoskút-Pusztaszolos, Hajdúszoboszló).

Hungary fulfilled its gas storage obligations last winter, reaching 98% by 1 November 2023 ⁽³⁾, and ended the winter season with a storage filled at 66.22% by 1 April 2024.

⁽³⁾ 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 Hungary**



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

4. NUCLEAR FUEL DIVERSIFICATION

The nuclear energy sector still depends on Russian technology, services and nuclear fuel. The Paks NPP currently operates 4 VVER-440 reactors. All four units reached their original 30-year design lifetime between 2012 and 2017 and received a 20-year license extension. In December 2022, the Hungarian Parliament approved plans for the further 20-year lifetime extension of the units meaning that they are now expected to operate until 2052-2057. The nuclear fuel diversification process is progressing, albeit rather slowly. Currently, the Paks NPP is in discussions with alternative fuel suppliers for the nuclear power plant, but the related contracts have not been signed yet. The two new VVER-1200 reactor units (Paks II project) which Hungary plans to finalise by 2030 also have a Russian vendor.

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 **Hungary** aggregated gas demand of **0.64 bcm** in 2023 under the EU Energy Platform. This represents the equivalent of 6.59% of the country's yearly gas consumption.

(4) International Renewable Energy Agency (2024). Renewable capacity statistics 2024

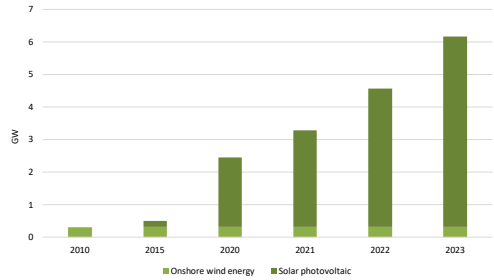
Produce clean energy

1. INSTALLED RENEWABLE ELECTRICITY CAPACITY, IN WIND AND SOLAR

In **2023**, Hungary installed around 1.6 GW of renewable electricity capacity, bringing the total to **6.8 GW** (vs. 3.9 GW in 2021).

In **2023**, the annual growth rate of installed renewables power capacity rose to **31.1%** compared to 29.2% in 2021⁽⁴⁾.

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, Hungary installed 0 MW of wind power capacity (vs. 1 MW in 2021).

(3) In 2023, Hungary installed 1.6 GW of solar photovoltaic capacity (vs. 0.8 GW in 2021).

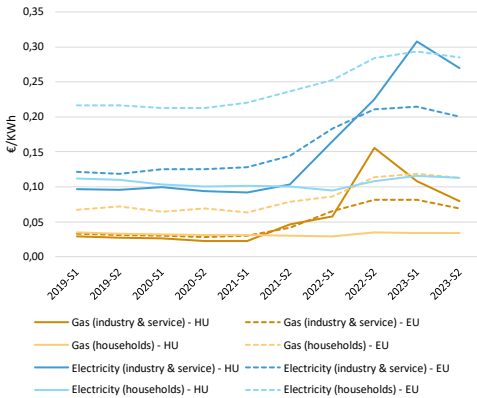
Source: IRENA, Renewable capacity statistics, 2024

2. ELECTRICITY INFRASTRUCTURE DEPLOYMENT

Hungary electricity system is well interconnected. Interconnection capacities are available with all neighbouring countries and in total their capacity reaches 50% of the total domestic generation capacities.

Energy price developments

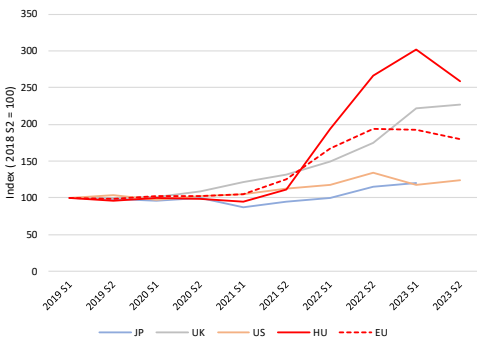
Graph 6: **Hungary's energy retail prices for households and industry & service**



- (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 HU), 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

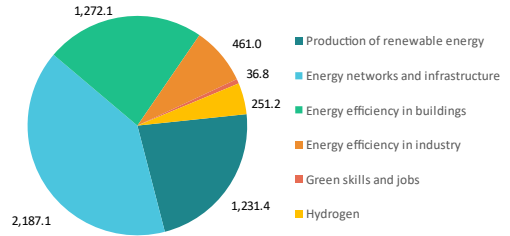
Source: Eurostat, IEA

Smartly combine investments and reforms in the RRP

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

- Approved by Council: on 8 December 2023
- Total amount: EUR 10.4 billion
- Amount allocated for energy: EUR 5.4 billion
- Climate tagging: RRP: 66.9 %; REPowerEU chapter: 91.7 %

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



Source: European Commission

Tangible results: reforms & investments

- **Energy efficiency in industry:** installation of 197 MW of renewable energy system capacity out of which 100 MW of electricity and heat storage development for the storage of renewable energy to be connected to the microgrid networks. Installation of 50 microgrid networks and of 10 MW of electric/geothermal heat pumps.
- **Energy efficiency in public buildings:** energy renovation of 1 924 000 square meters in public buildings and higher education institutions with the need to achieve primary energy savings of at least 30%.
- **Energy efficiency in households:** at least 7 300 households will have their windows replaced as part of their energy system improvement package.
- **Energy networks:** support the installation of 816.569 electricity smart meters.
- **Energy infrastructure:** Reform to improve the transparency, predictability and availability of the grid connection procedure focused on 1) grid connection authorisation for weather-dependent renewable power plants and 2) harmonisation of the electricity grid connection procedure by distribution system operators.

Highlights of the National Energy and Climate Plan

- The **draft updated NECP** was submitted to the European Commission in August 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

Hungary has limited domestic PV manufacturing capacity compared to the total solar energy capacity installed in the country. One Hungarian manufacturer stands as the sole active player, operating one production facility with an annual cell manufacturing capacity of approximately 100MW. It has ambitious plans to expand this capacity significantly, targeting a range of 500-600MW in the coming years.

Hungary is positioning itself as one of the world's leading batteries suppliers for EVs. A South-Korean multinational operates a prominent battery cell plant in Göd, recently expanded to a total capacity of 30,000 MWh. The same company has announced an investment project of nearly EUR 62 million in September 2023, to boost research and development activities in Göd. Another South Korean company operates a plant in Komárom with a capacity of 7 500 MWh. In 2023, several manufacturers – mainly Chinese – announced around EUR 10 billion of investment in battery manufacturing. A planned joint Chinese-German investment project in Debrecen is worth more than EUR 7.3 billion and would have a total capacity of 100GWh. This would be the largest battery manufacturing plant in Europe. Hungary's appeal for battery producers is also explained by the presence of a significant number of automotive manufacturers already based in the country. Adding to the momentum, a prominent Chinese company announced plans in December 2023 to construct a new EV plant near the southern Hungarian city of Szeged.

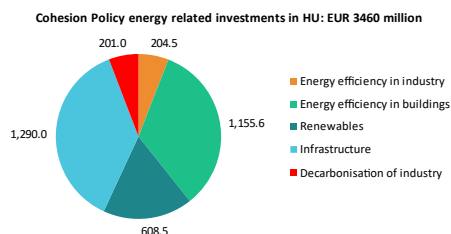
⁽⁵⁾ <https://cohesiondata.ec.europa.eu/d/hgyj-gyin>

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 ⁽⁵⁾