FISR2

STRUCTURAL REFORMS BETTER INTEGRATED WITHIN FISCAL FRAMEWORKS

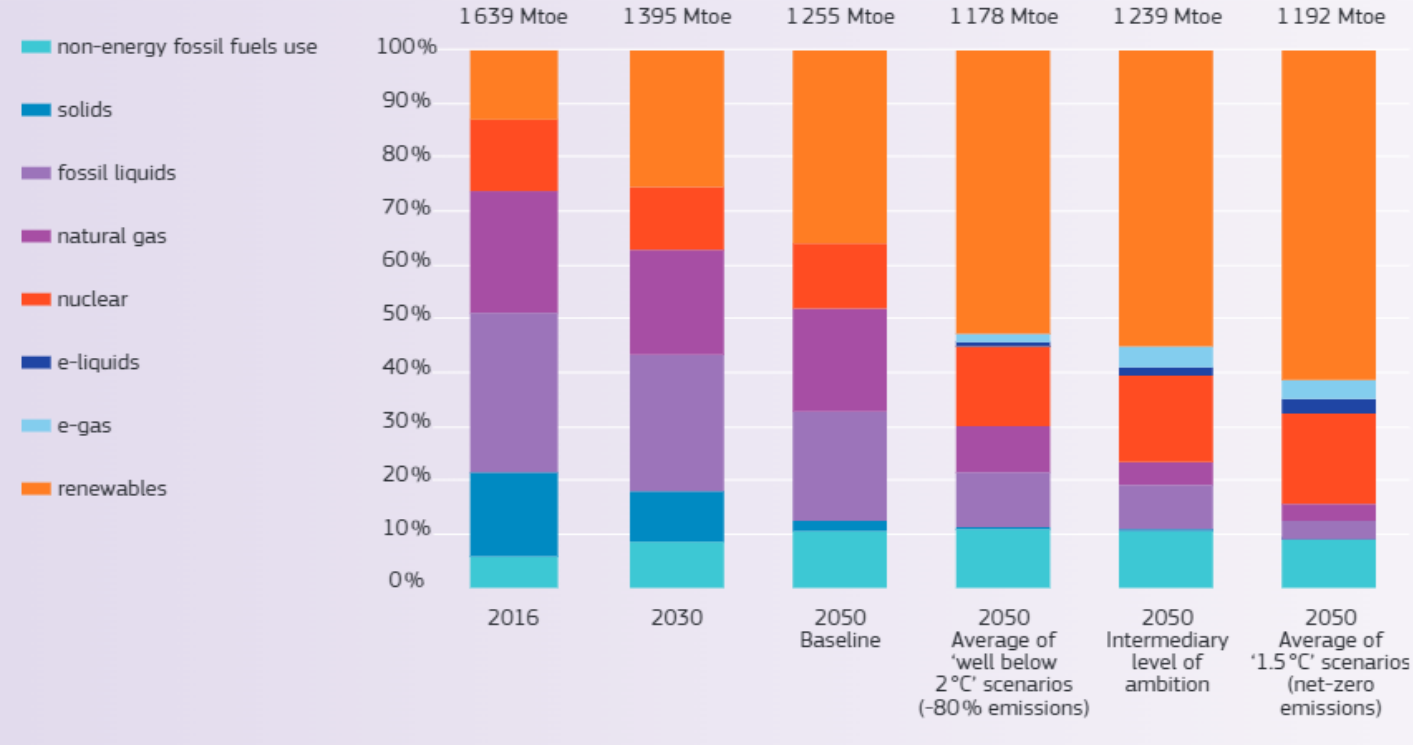
The General Trends in the European Energy Market

Dr. Janez Kopač, 18 February 2025, Ljubljana

CEF
Connect. Learn. Act.

Funded by the European Union

Gross consumption of energy in the EU



Source: European Commission, https://op.europa.eu/en/publication-detail/-/publication/92f6d5bc-76bc-11e9-9f05-01aa75ed71a1

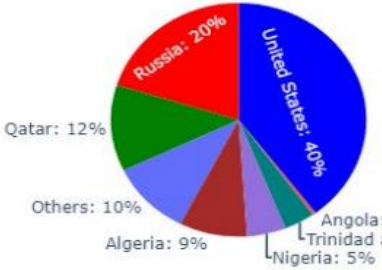
Funded by the European Union

TRENDS ON GAS MARKET

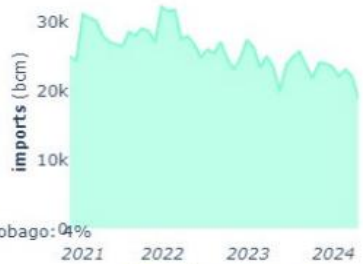
Source: Quarterly report on European gas markets

Funded by the European Union

EU gas market fundamentals Q3 2024



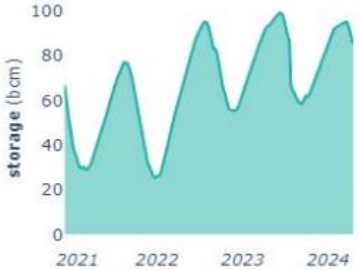
LNG: 21.5 bcm



Gas imports

64bcm

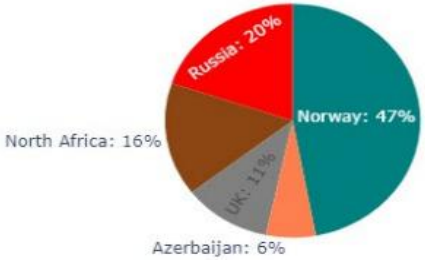
▼−4bcm



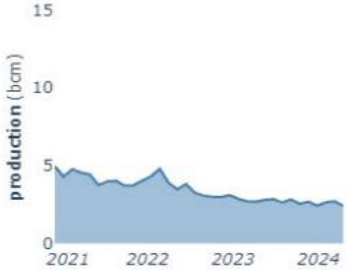
Gas storage

81bcm

▼0bcm



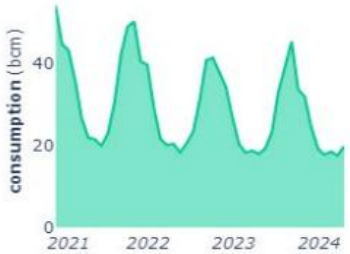
Pipelines: 42.4 bcm



Gas production

8bcm

▼−1bcm



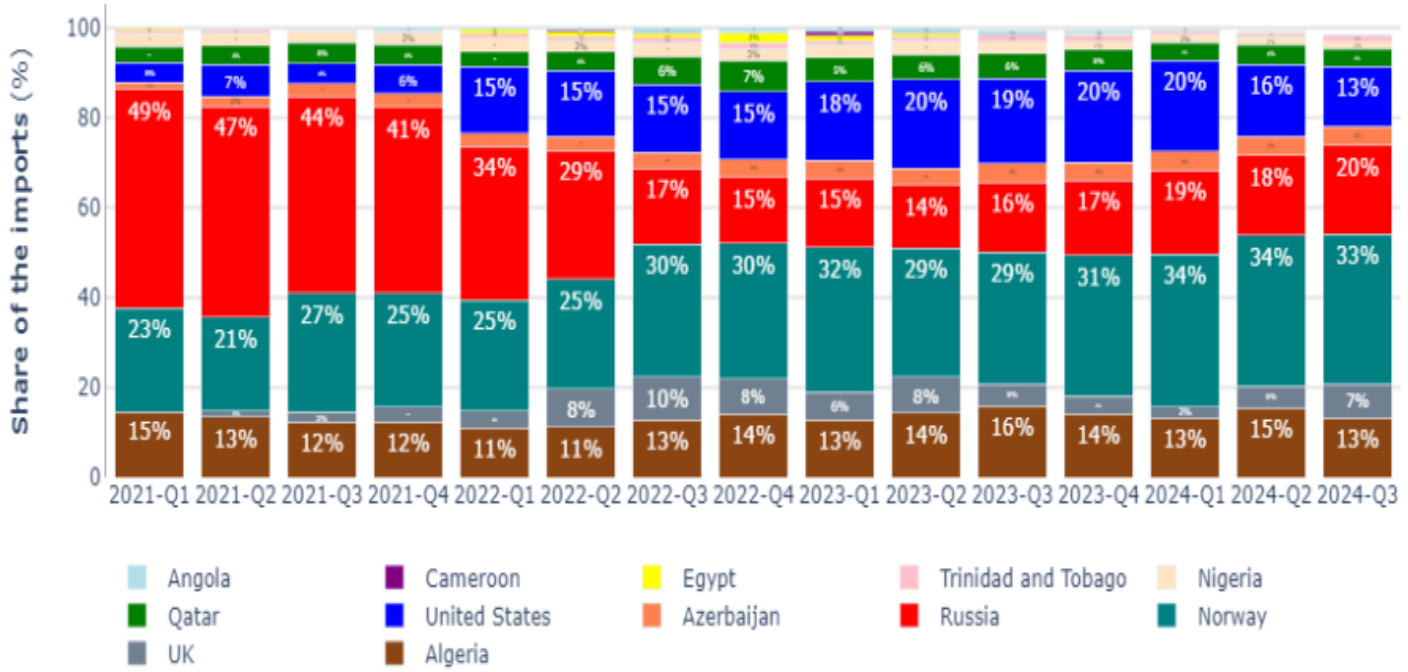
Gas consumption

56bcm

-

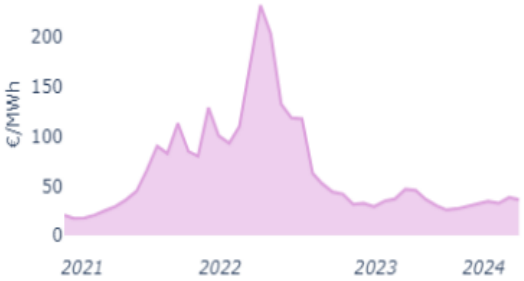
Funded by the European Union

EU gas imports in Q3 2024 - per country



Funded by the European Union

Headline prices for gas and y-o-y comparison, Q3 2024



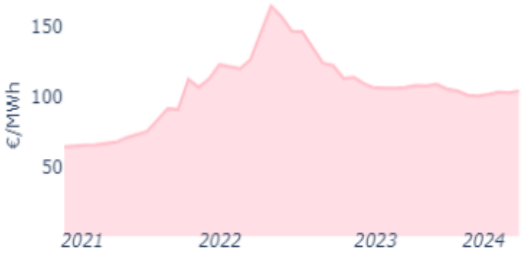
Wholesale prices

36 €/Mwh

▲2€/MWh

Change y-o-y

7%



Retail prices

103 €/MWh

▼−3€/MWh

Change y-o-y

−3%

TTF price: 36 EUR/MWh
Asian price: 41 EUR/MWh
Henry hub: 6,9 EUR/MWh

Weekly evolution of spot and year ahead coal and gas pricesmarket prices

Funded by the European Union

Imports of Russian pipeline gas and LNG

LNG share of EU imports

33%

▼−8%

US share in LNG imports

40%

▼−6%

Pipelines share of EU imports

67%

▲8%

Russian share in pipelines imports

20%

▲6%

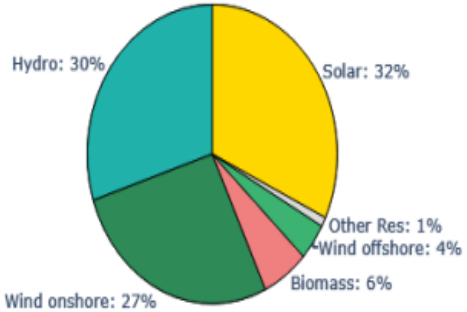
Funded by the European Union

TRENDS ON ELECTRICITY MARKET

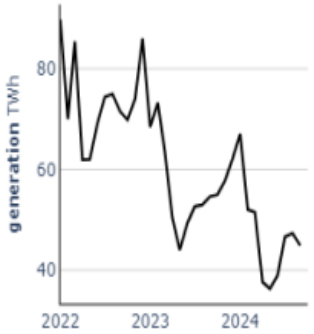
Source: Quarterly report on European gas markets

Funded by the European Union

Electricity generation in Q3- EU



RES generation



Fossil fuel generation

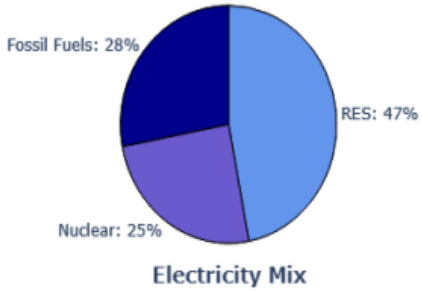
165 TWh

▼−20 TWh

RES generation

277 TWh

▲30 TWh



Electricity Mix

Electricity generation of fossil fuels vs. renewables

Average Generation Share of Fossil Fuels

28 %

▼−4 pp.

Average Generation Share of Renewables

47 %

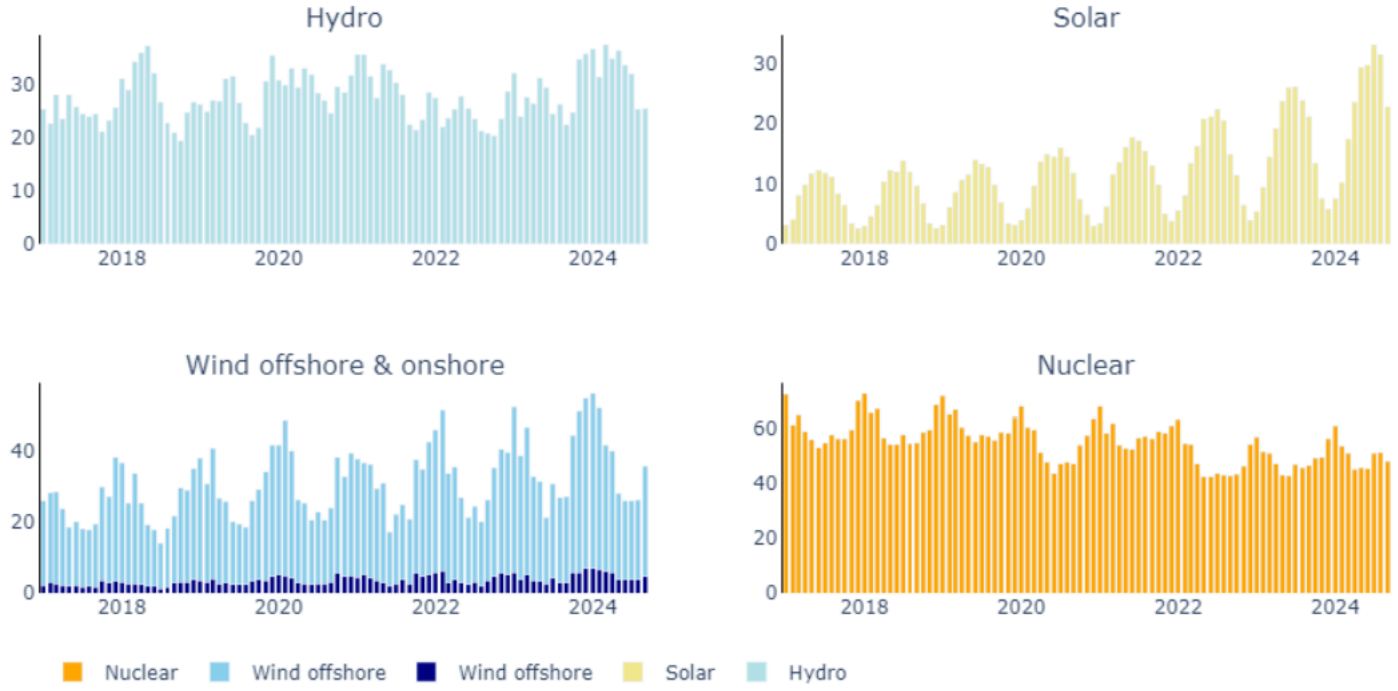
▲3 pp.

Electricity generation in Q3 2024 compared to Q3 2023

Oil	Coal	Gas	RES	Nuclear
3 TWh	20 TWh	80 TWh	277 TWh	151 TWh
▼−9%	▼−28%	▼−14%	▲12%	▲8%

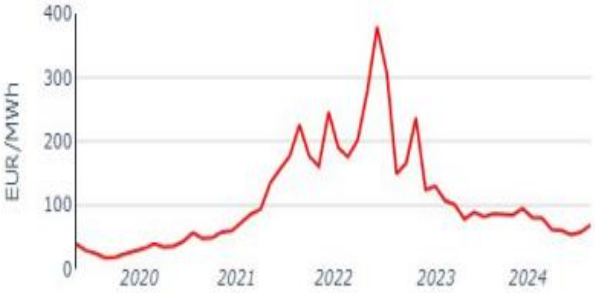
Funded by the European Union

Monthly renewable electricity generation - EU



Funded by the European Union

Electricity prices Q3 2024



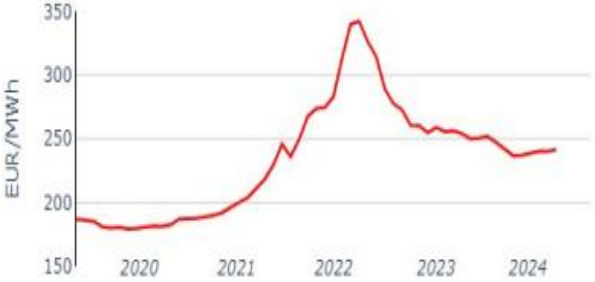
Wholesale prices

78 €/MWh

Change y-o-y

−8%

▼−7 €/MWh



Retail prices

241 €/MWh

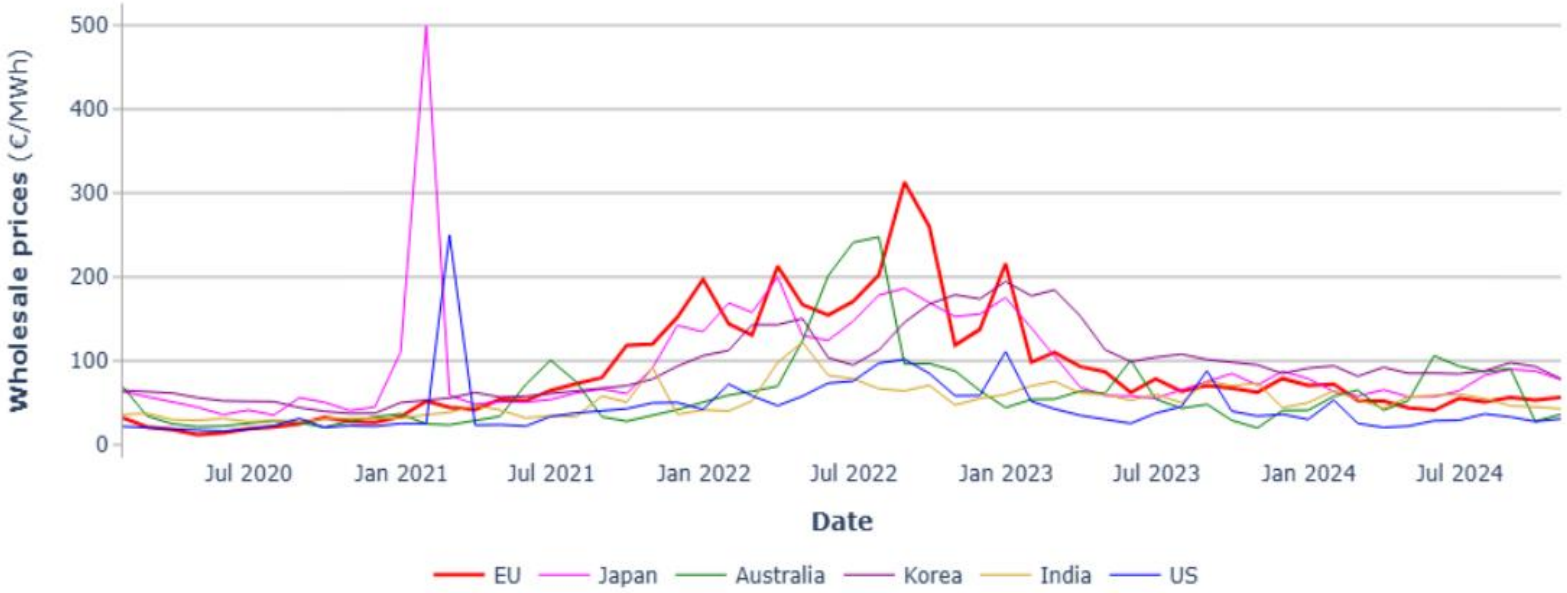
Change y-o-y

−6 %

▼−15 €/MWh

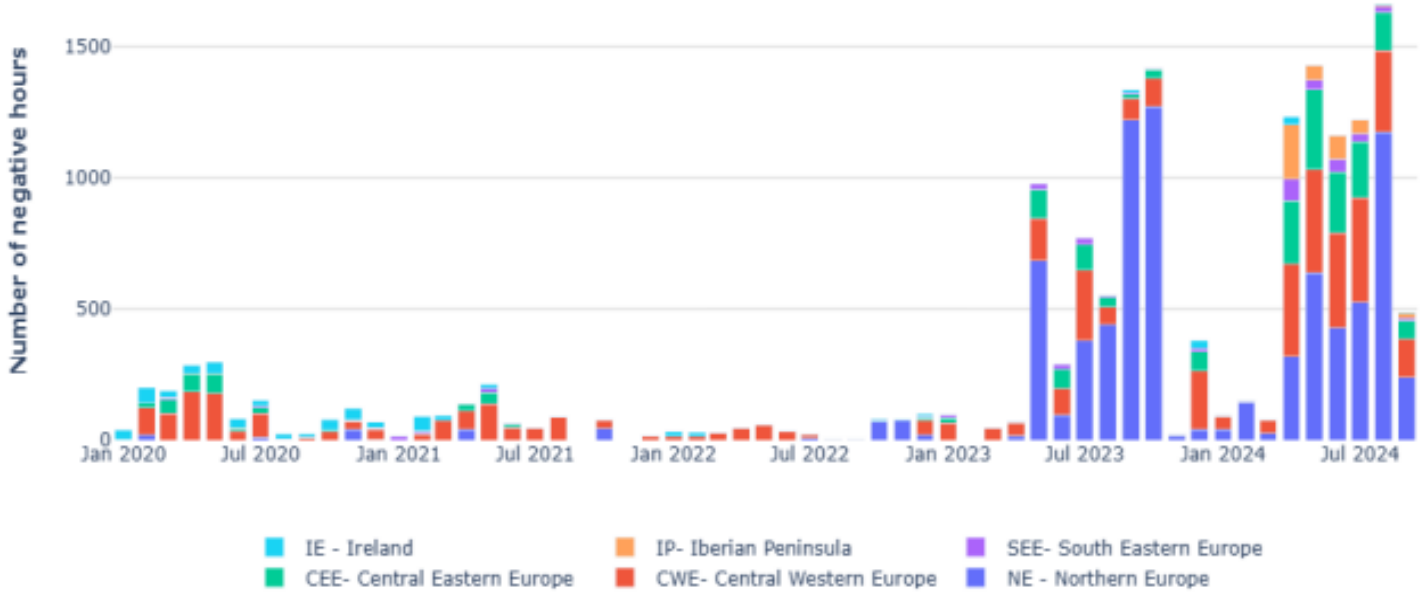
Funded by the European Union

Monthly average wholesale electricity prices

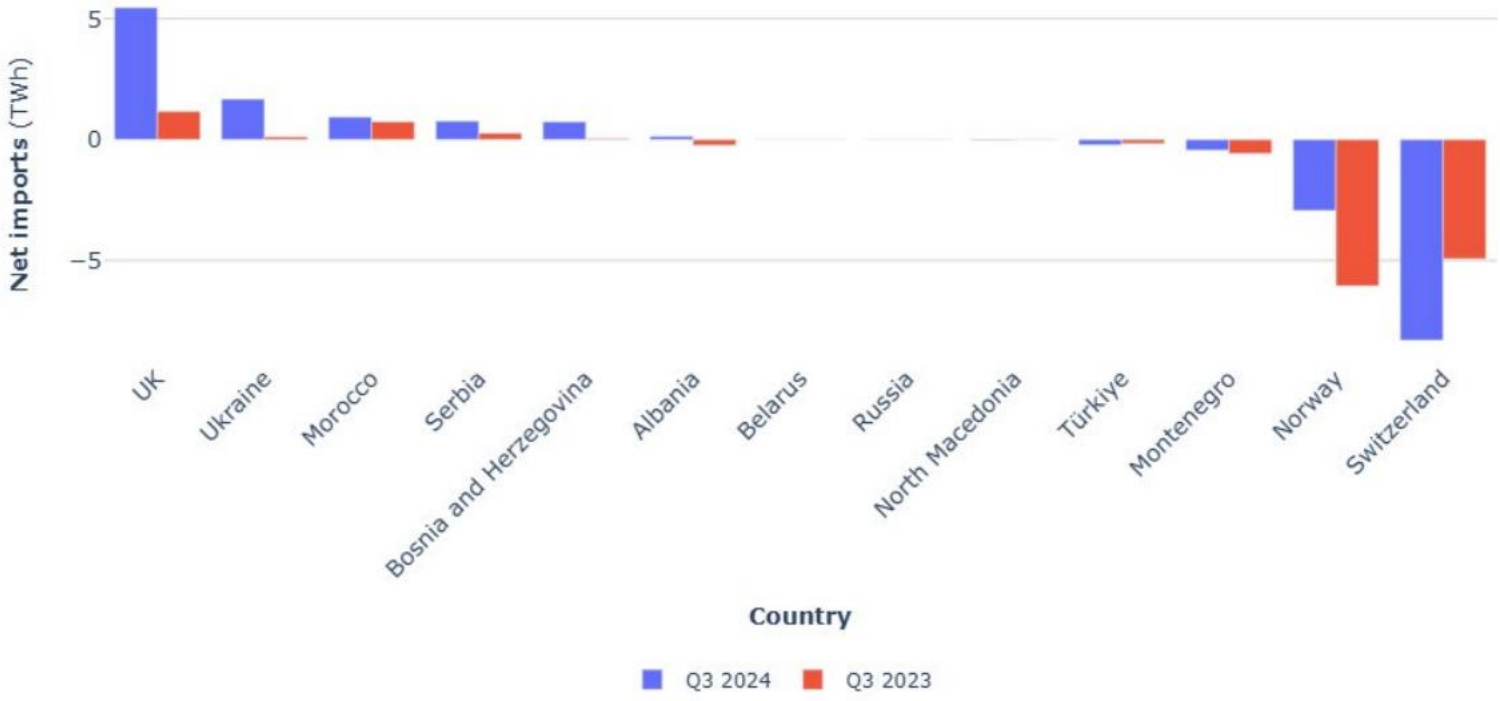


Funded by the European Union

Number of negative hourly wholesale prices on selected day-ahead trading platforms

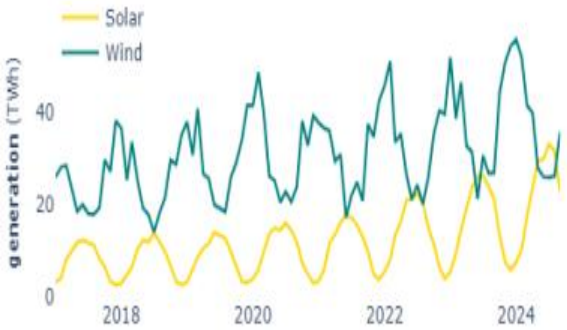


EU electricity exchanges netted in Q 3 2023 and 2024



Funded by the European Union

Renewable energy generation Q3 2024 - EU



Renewable energy generation: +16 %

Hydro

83 TWh

▲9 TWh

Solar

87 TWh

▲16 TWh

Wind onshore

76 TWh

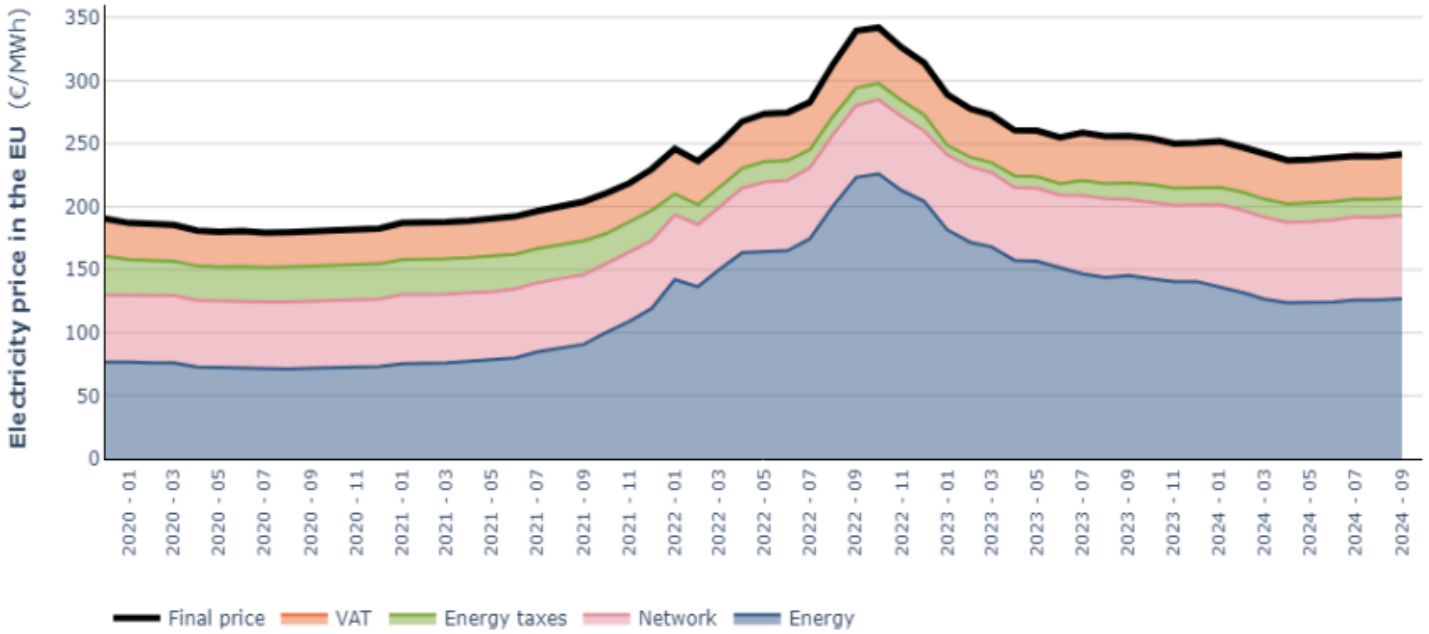
▲1 TWh

Wind offshore

12 TWh

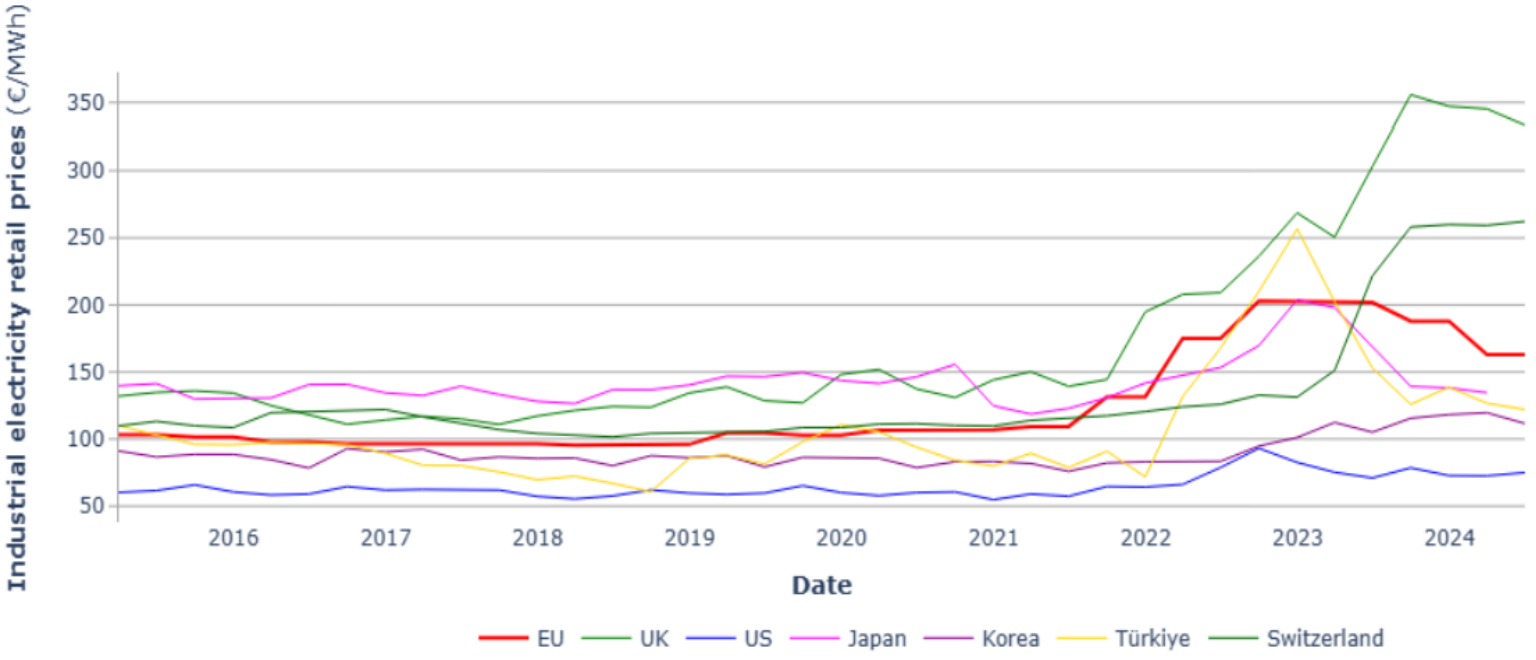
▲2 TWh

Monthly average electricity prices for households



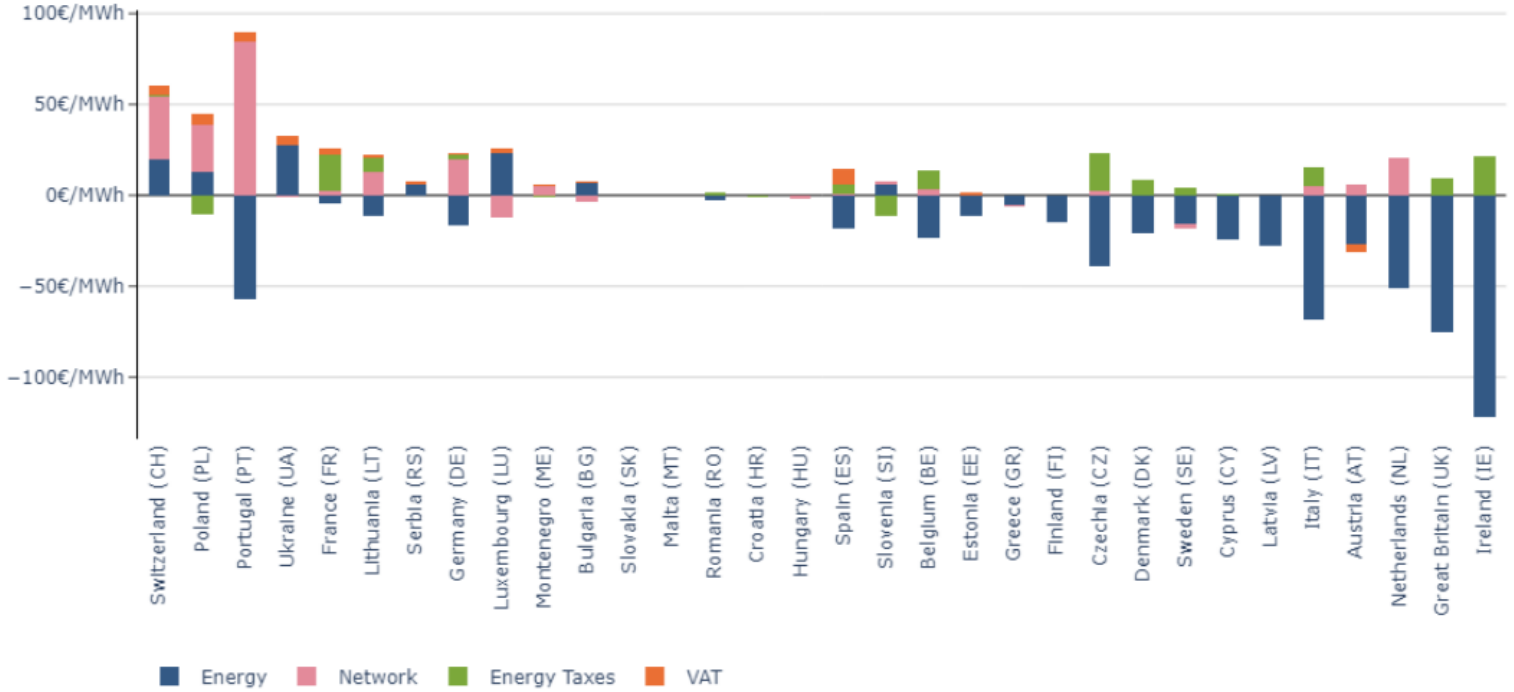
Funded by the European Union

Retail electricity prices paid by industrial customers in the EU and its main trading partners



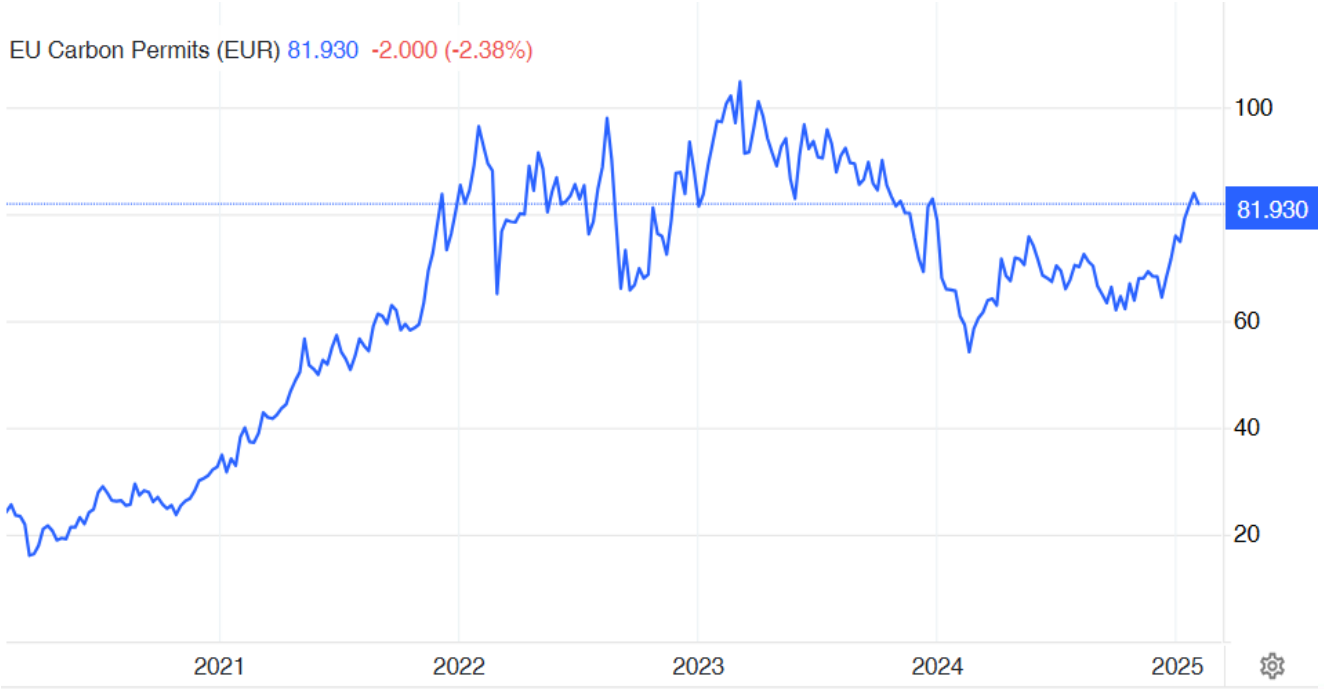
Funded by the European Union

Y-o-y change in cost components of electricity prices



Funded by the European Union

Carbon emissions allowances prices - EU



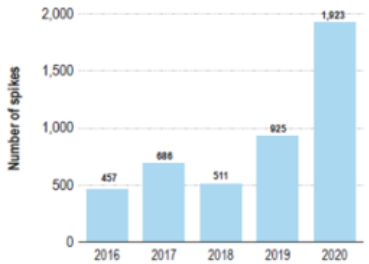
Funded by the European Union

Greater penetration of renewables 1 - (more binomial distribution of wholesale el.prices)

Greater penetration of renewables-based electricity
2019 2030
34% -> 65-70-75%

Renewables-based generation characterised by zero or very low marginal costs	Variability of production of renewables-based generation requires back-up resources
Many hours with very low or zero (or even negative) electricity prices	Price spikes to allow the recovery of fixed costs of renewables-based generation and back-up resources

Day ahead negative prices in EU

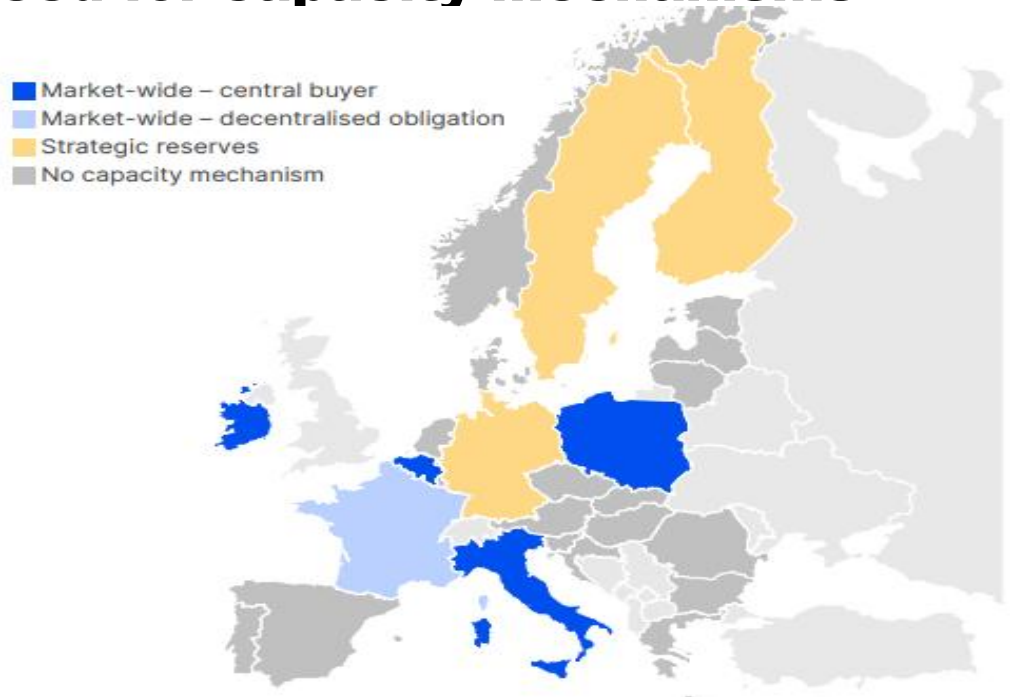


Source: ACER

Day ahead price spikes in EU

Funded by the European Union

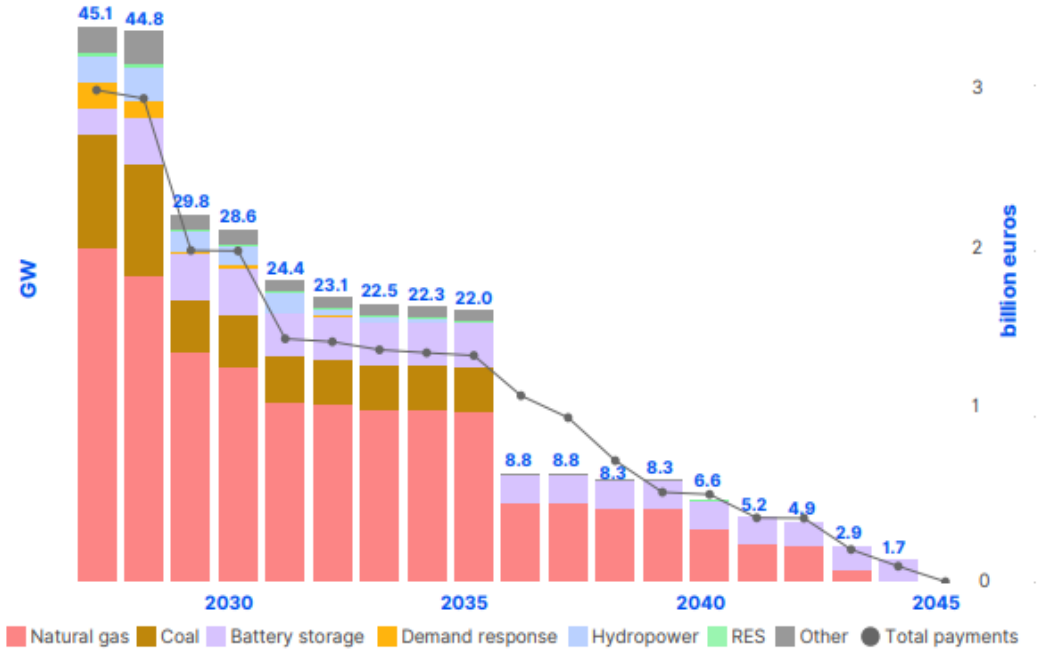
Greater penetration of renewables 2 - need for capacity mechanisms



Source:ACER, 2024

Funded by the European Union

Total payments and capacities awarded long-term contracts under market-wide capacity mechanisms by technology

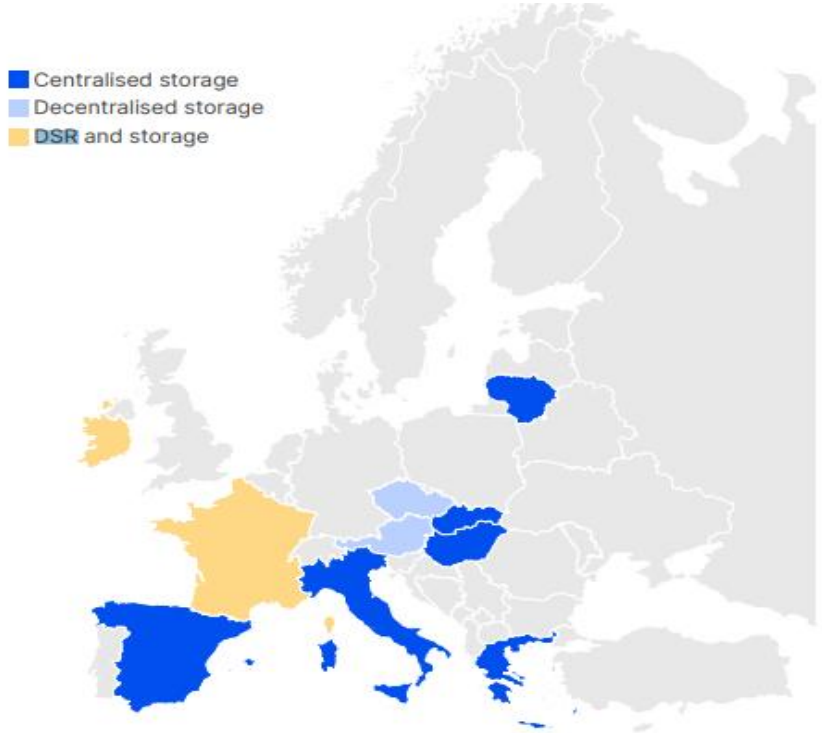


Generation capacity that emits more than 550 g of CO2 of fossil fuel origin per kWh is not eligible !!!

Source: ACER, 2024

Funded by the European Union

Greater penetration of renewables 3 – need for demand side response and storage



Source: ACER 2024

Funded by the European Union

Lessons learned in 2022 – mostly reflected in new Electricity Market Design

- gas-fired generation is still the price-setting technology
- current regulatory framework regarding long-term instruments - insufficient to protect from excessive volatility
- unexpectedly high commercial returns for inframarginal generators
- extreme price volatility and short-term emergency interventions undermine investment signals
- short-term markets are ensuring an efficient dispatch of all resources, maximizing renewables, but the integration of flexibility sources (storage, demand response) is not happening fast enough
- retail markets need to protect further and empower consumers
- network tariffs – from flow-based to capacity-based

Funded by the European Union

Draghi report on European competitiveness

- **High Energy Costs Impacting Competitiveness**
- **Coordinated taxation**
- **Advocacy for Decarbonization**
- **Investment in Renewable Energy and Infrastructure**
- **Energy Market Reforms**:
(current market design with hourly auctions not appropriate for the integration of renewable energy sources)
- **Regulation to Prevent Speculative Behavior** (how to exclude the influence of the price of gas, particularly via derivatives?)

Funded by the European Union

Competitiveness Compass - latest policy papers of the European Commission

The EU must thus accelerate the clean energy transition and promote electrification. However, **some of the cost components of energy prices can be mitigated in the short term, as they are determined by inefficiencies in the design of network tariffs and taxation or a lack of energy market integration.** These issues will be addressed by the **Affordable Energy Action Plan (Q1 2025)**, through a range of measures to ensure that households and industrial customers have wider direct access to low-cost energy. The plan will help leverage the energy cost reduction benefits coming from **further market integration, expand the use of guarantees and risk reduction instruments to facilitate the conclusion of long-term power purchase agreements, incentivize industrial customers to provide demand flexibility services,** and **encourage a fair allocation of energy system costs through better-designed tariffs.**

Funded by the European Union

Thank you

Dr. Janez Kopač

janez.kopac@gmail.com

WhatsApp: ++43 664 849 83 30

Funded by the European Union