



European Union Agency for the Cooperation
of Energy Regulators

Annual report on ACER market monitoring efforts & broader ACER planning

The European Parliament's ITRE Committee
Brussels, 3 December 2024

Christian Zinglensen, *ACER Director*

Status of EU energy markets

- *Electricity*
- *Gas*
- *Hydrogen*

EU competitiveness & energy

- *Leveraging our internal energy market*
- *Digitalisation and flexibility*
- *Addressing rising energy system costs*

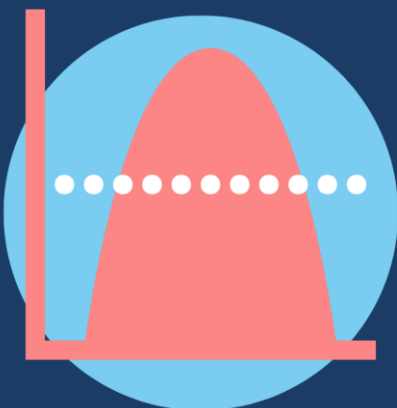
ACER planning, priorities & needs up ahead

Briefly on EU markets: Electricity

Member States benefit from market integration

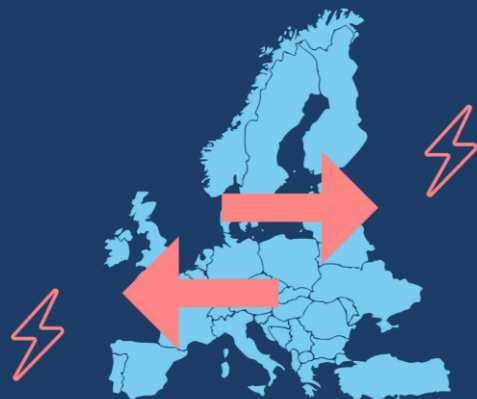
30 – 50%

Currently available
capacity for cross-border
trade in meshed areas

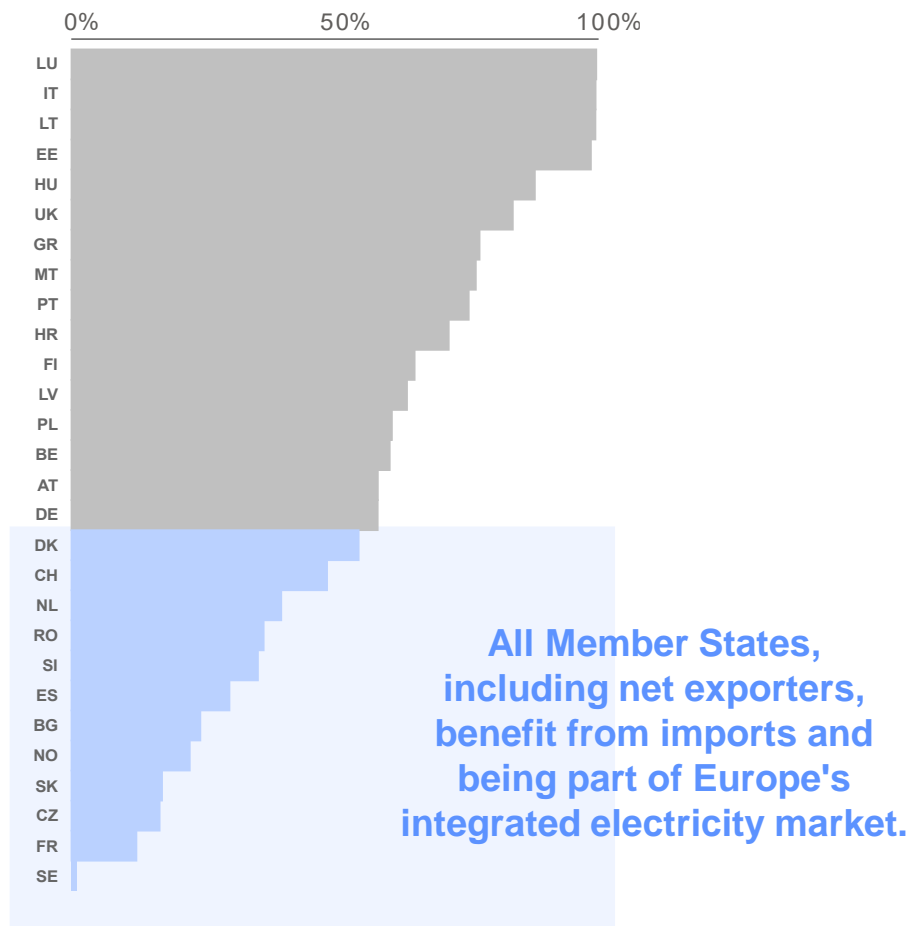


70 %

Minimum 2026 target for
capacity available for
cross-border trade

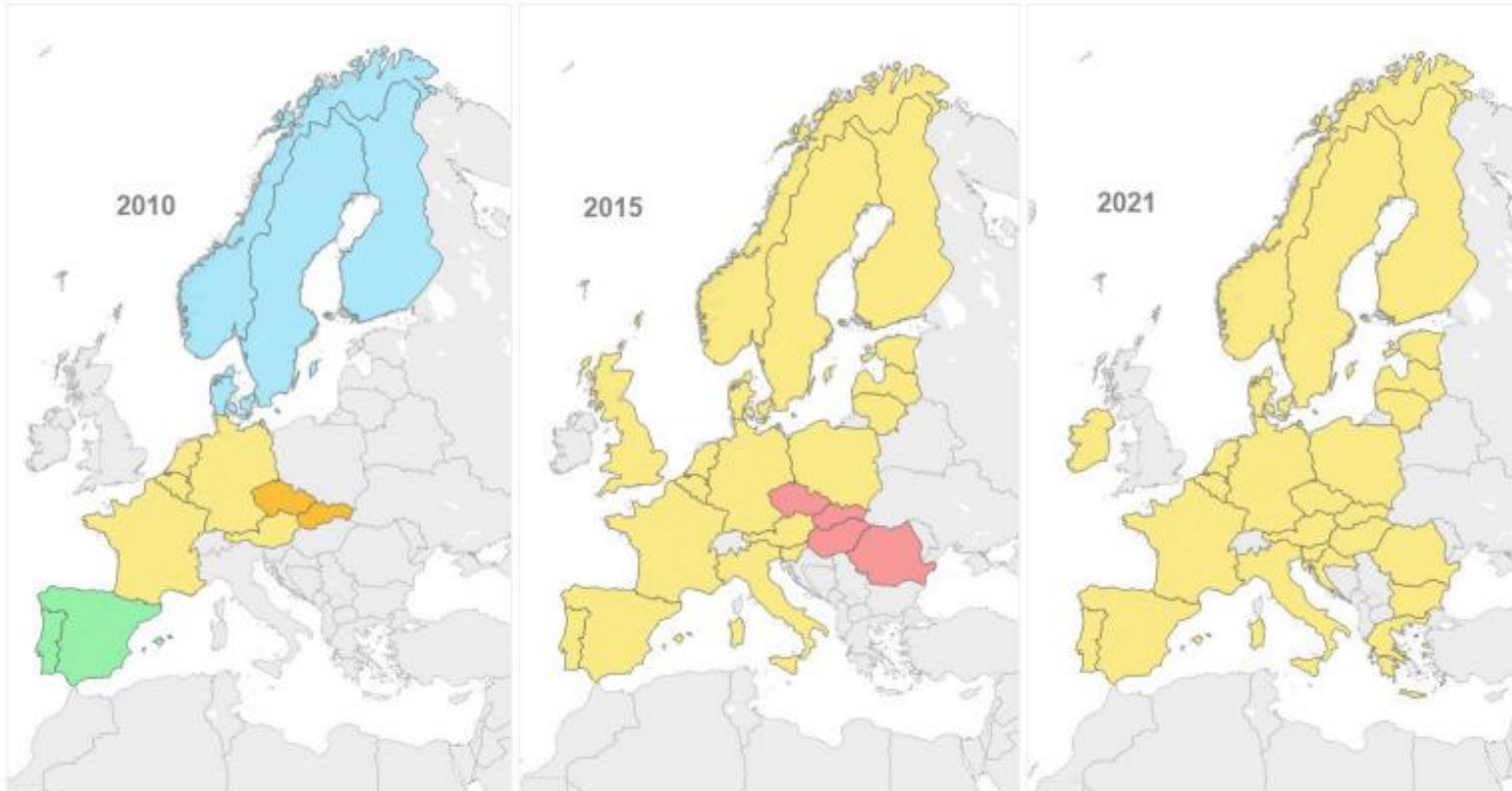


Percentage of electricity net import hours in the EU-27/EEA(Norway), Switzerland, 2023



The benefits of integrated electricity markets

Evolution of EU wholesale electricity day-ahead market coupling, 2010-2021

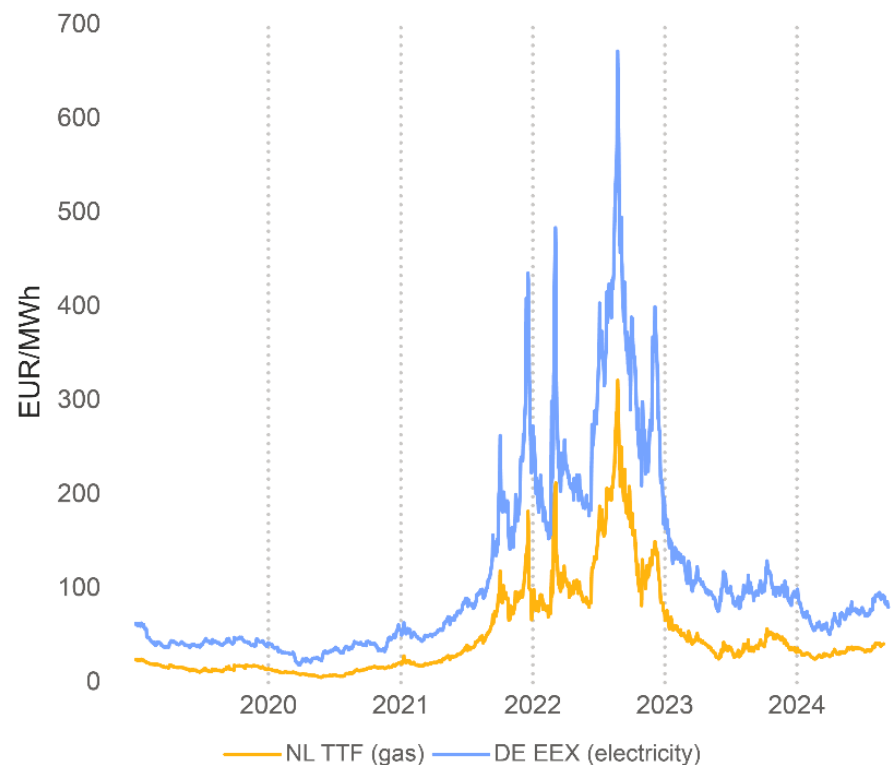


How large are the benefits from cross-border trade in the EU?

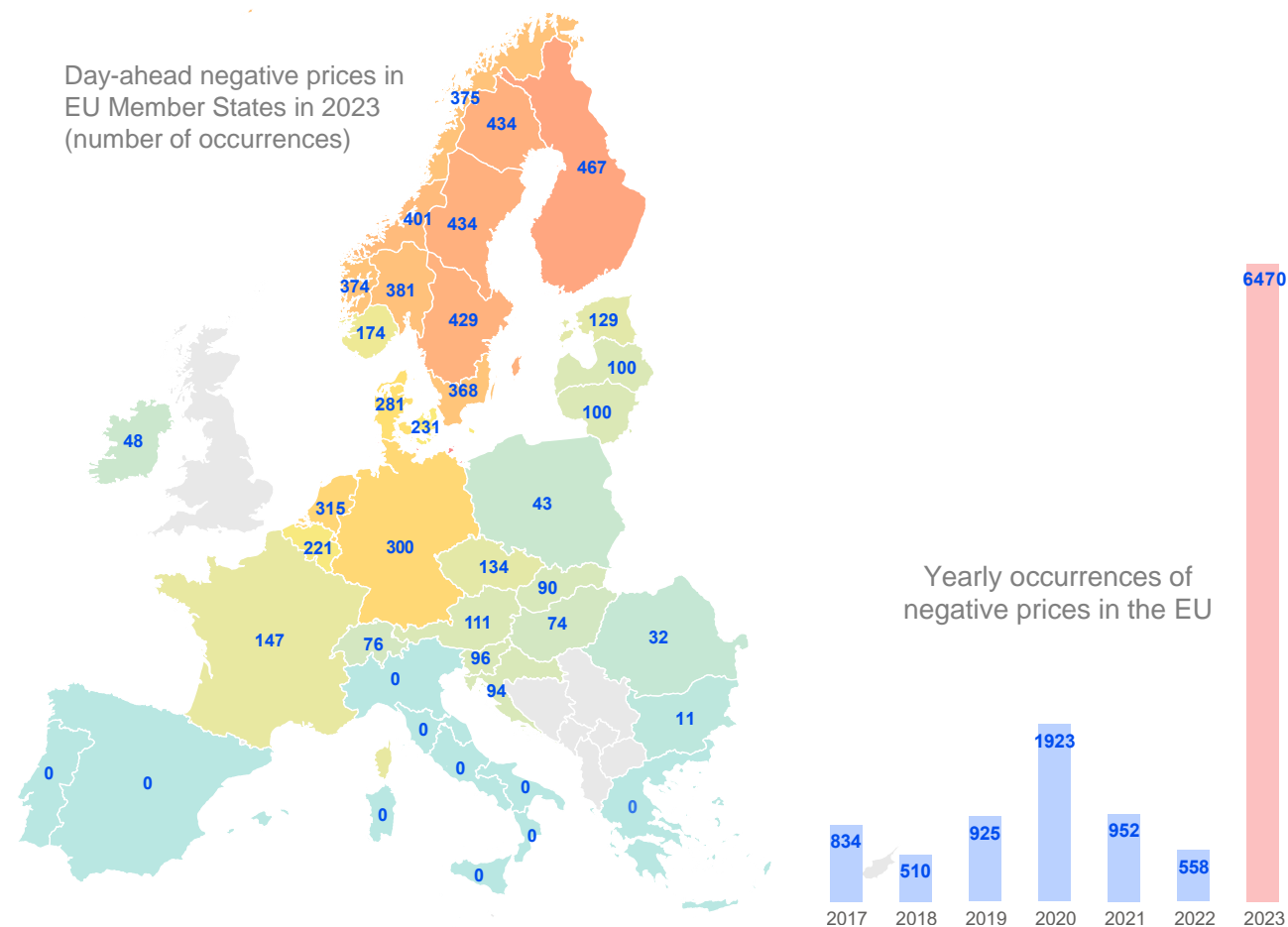


Recent years showing high price volatility

EU gas and electricity prices, 2021–2024 (EUR/MWh)

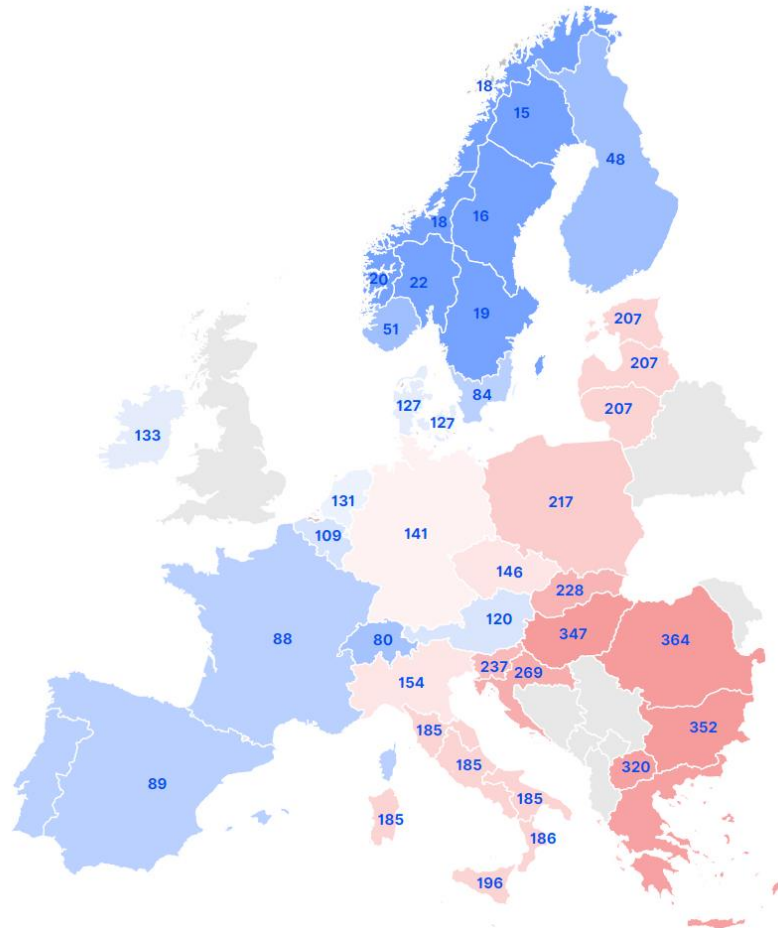


Unprecedented record of negative prices

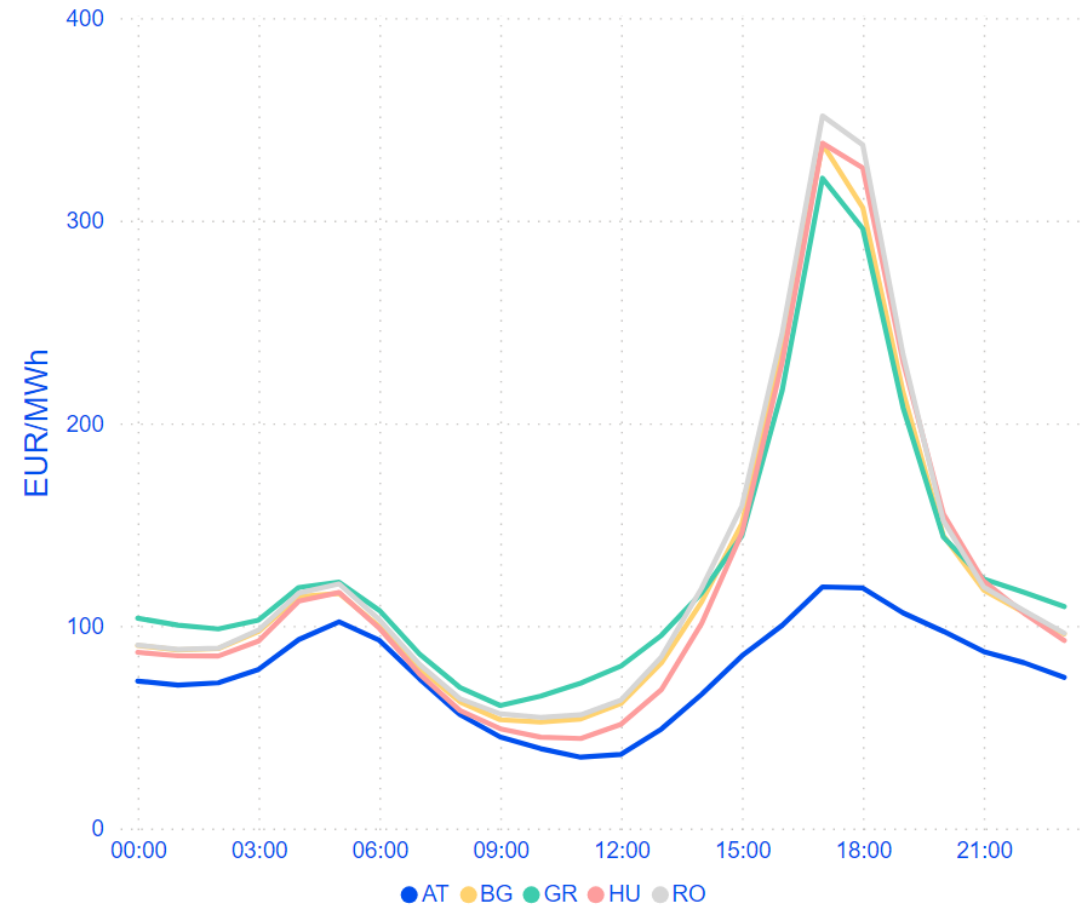


Zooming in on ‘summer developments’

Average day-ahead prices in the EU at 19:00 CET,
1 July-23 September 2024 (EUR/MWh)

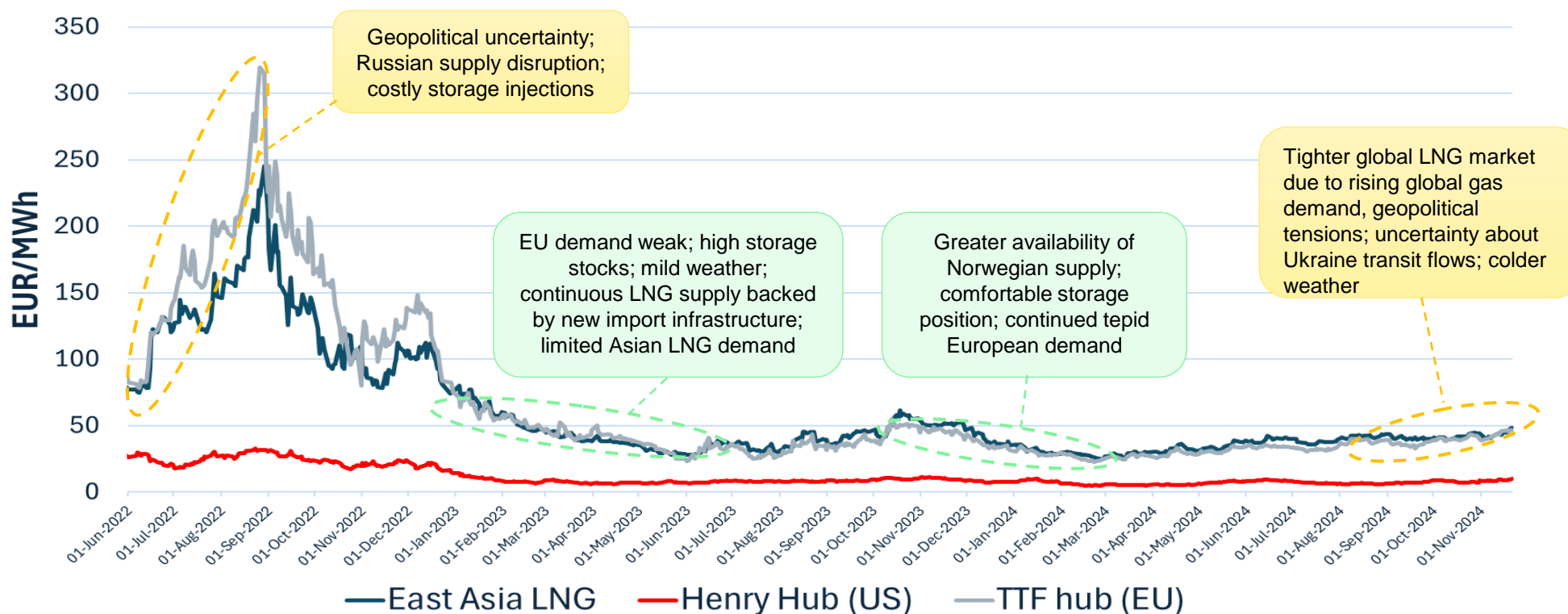


Evolution of average day-ahead prices in select EU bidding
zones, July-September 2024 (EUR/MWh)



Briefly on EU markets: Gas

Global gas benchmark prices, month ahead product, June 2021-November 2024 (EUR/MWh)



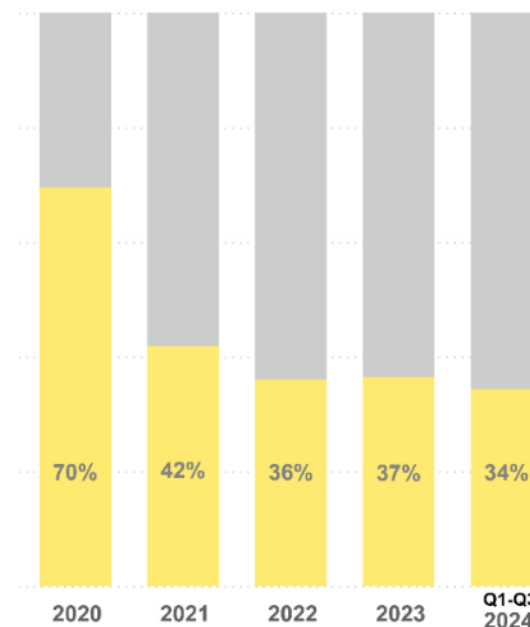
The EU has largely returned to a more stable gas supply, supported by reducing demand, ample LNG import capacity and adequate storage levels. However, this balance remains fragile. An anticipated surge in LNG supply from late 2026 is expected to drive prices down.

Trend of renewables displacing gas generation

Year-on-year change for main electricity generation technologies,
Q3 2024 (TWh)



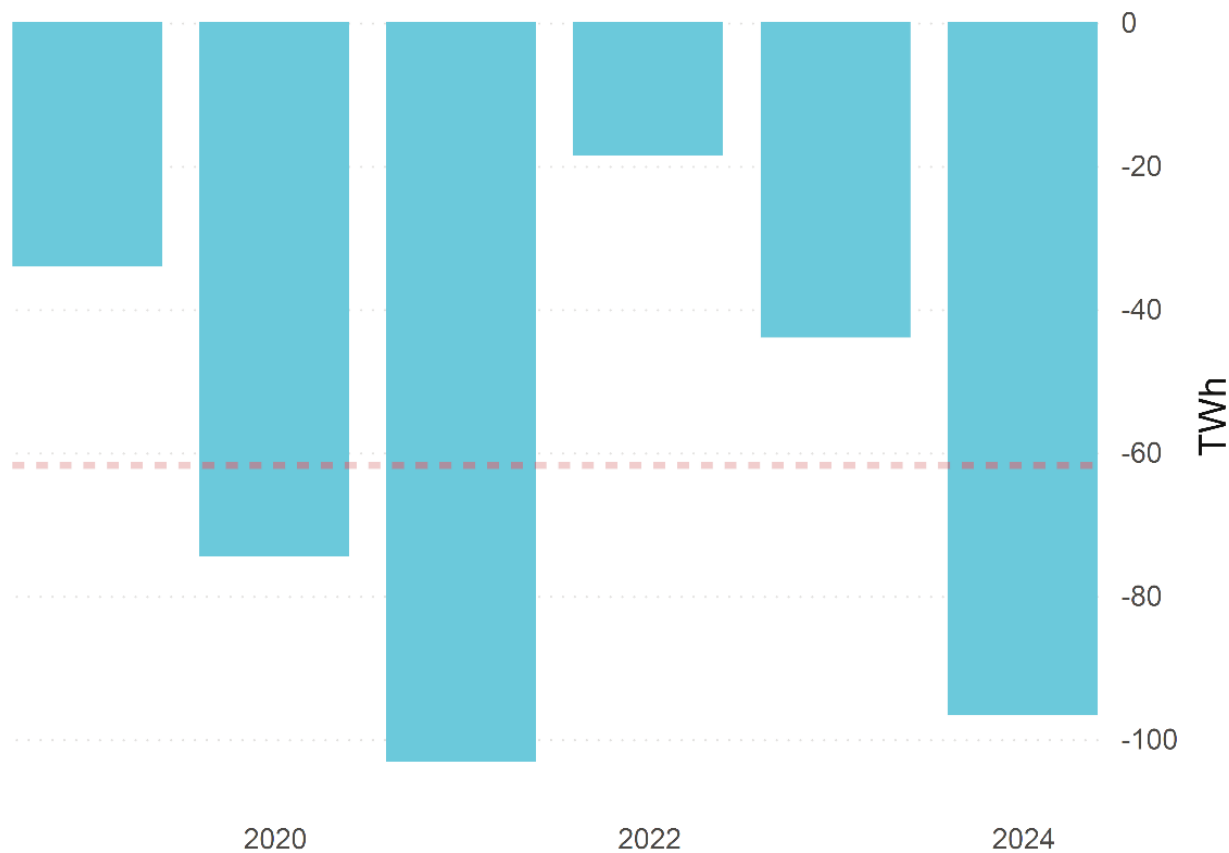
Percentage of hours when electricity day-ahead prices were
above costs of producing electricity from gas on average
in the EU-27, Q1-Q3 2020-2024 (%)



Compared with the same period last year, gas-fired power generation in the EU declined by 12 TWh in the third quarter of 2024. Increased renewables' output limited the opportunities for conventional power plants (gas and coal) to run profitably. This resulted in reduced carbon emissions, loosened the EU gas demand-supply balance and reduced the role of gas as the marginal price setter in electricity markets.

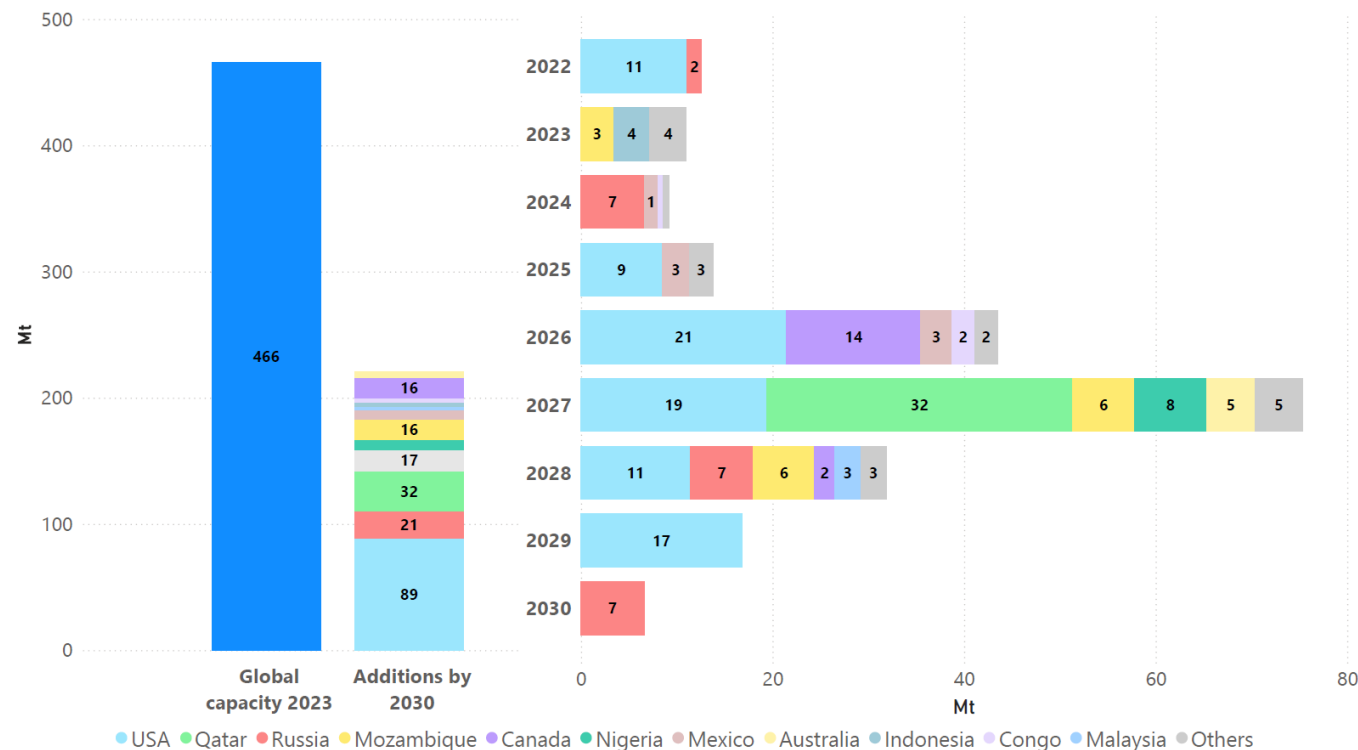
So, less relevance of gas? Well, it depends ...

EU gas storage withdrawals, November 2021-2024 (TWh)



Higher LNG dependence = forever-high gas prices?

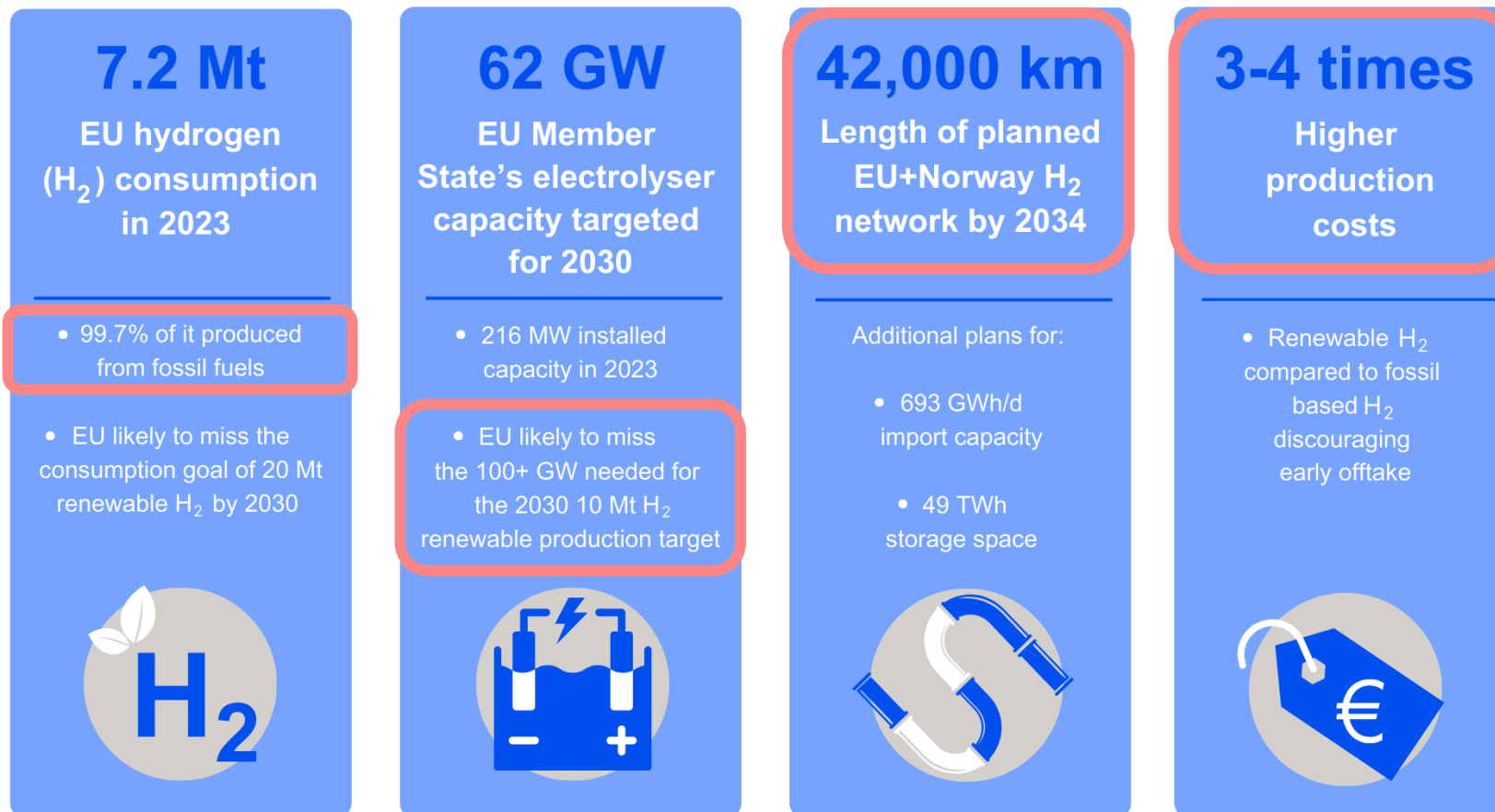
New capacity developments in global LNG liquefaction, 2022-2030 (million tonnes/year)



As of February 2024, 19 liquefaction projects globally are under construction, set to boost LNG production by circa 200 million tonnes by 2030 (irrespective of the recent pause by authorities in the United States on granting new export licenses to liquification facilities). Such an increase in production capacity represents roughly half of current global traded LNG volumes and stands to reduce LNG market tightness and stabilise prices.

Briefly on EU markets: Hydrogen

Hydrogen in Europe today ~ key figures

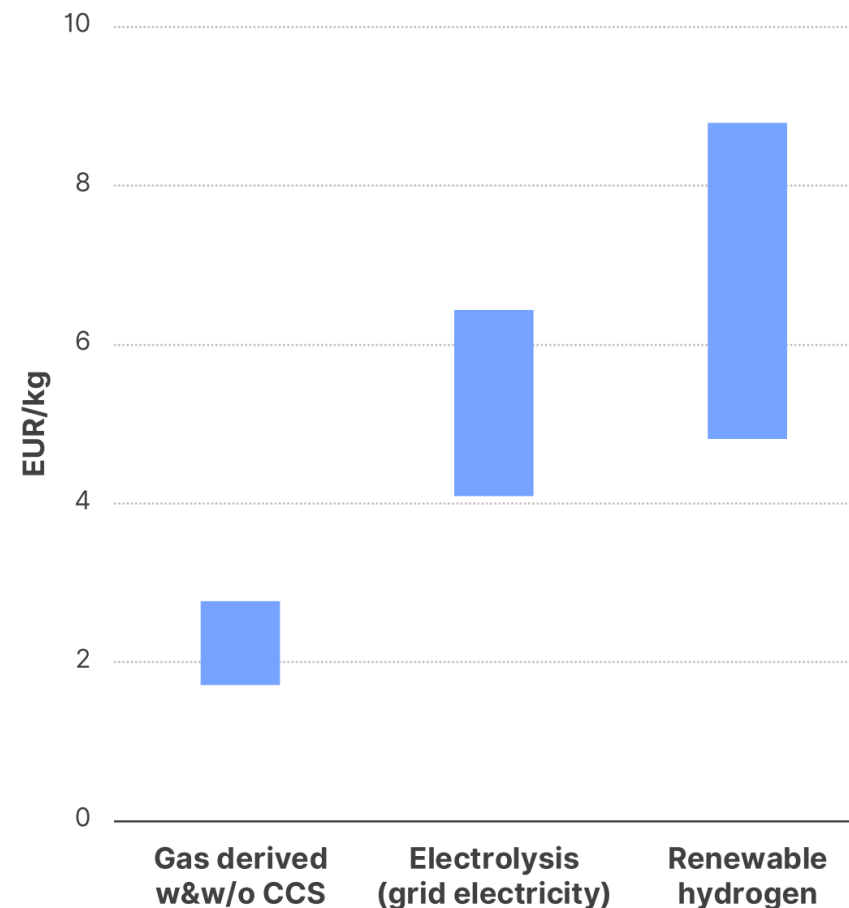


The EU needs to speed up to achieve its 2030 targets. Strong national commitments are necessary to materialise plans and projects. Current cost gap is the key barrier for renewable hydrogen uptake.

Renewable hydrogen is largely ‘out of the money’

- Renewable hydrogen is 3-4 times more expensive to produce than fossil-based hydrogen.
 - Current gap is too large to enable rapid deployment.
 - Cost reduction expectations may discourage first-movers.
- Yet, European Hydrogen Bank’s first auction results indicate instances of both very low production cost and high-enough willingness to pay for renewable hydrogen.
- Clarifying low-carbon hydrogen’s role is key for market development and long-term climate goals.
- Scaling electrolyser deployment and continuing the rapid decarbonisation of electricity is essential for renewable hydrogen competitiveness.

Cost ranges of hydrogen by production method



One down-to-Earth example





Integrated network planning

To mitigate the risks of oversizing:

- **Improved demand forecasting** during the planning phase is essential (incl. market tests).
- **Readiness** to adjust to align infrastructure with actual market needs.
- **Incremental infrastructure development** when uncertainty is high.
- **Carefully repurposing gas networks** for hydrogen to minimise costs, but without overlooking impacts on the gas sector (continuous security of supply).



Tackling demand risks in financing hydrogen infrastructure

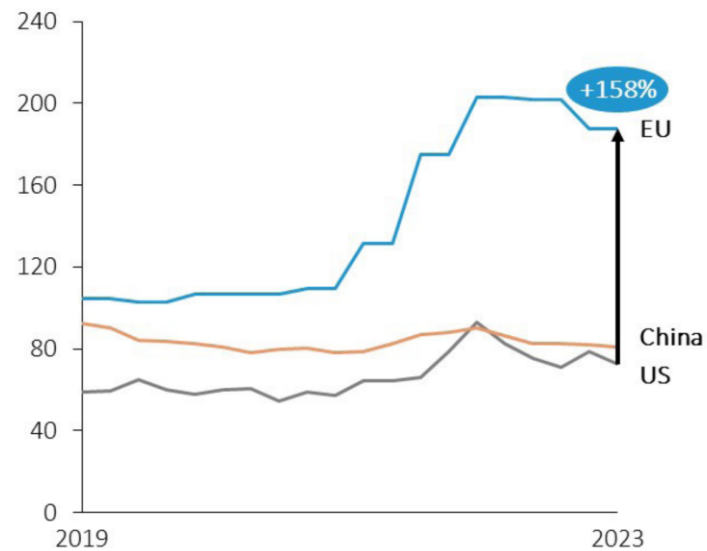
Uncertain future hydrogen demand can lead to underutilised networks and stranded assets.

- **Inter-temporal cost allocation mechanism** (as e.g. in Germany) could help. Continuous monitoring is important.
- **Effective risk and cost allocation** between users, operators and the State is crucial.
- For cross-border hydrogen networks, **timely cooperation and coordination among Member States** and regulators are essential.

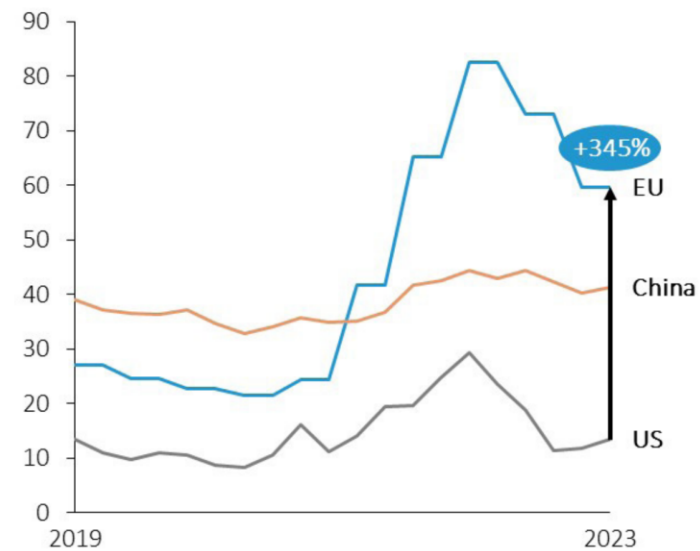
Future EU competitiveness & energy

Gas and retail price gap for industry

Industrial retail power prices
EUR/MWh



Industrial gas prices
EUR/MWh



Source: European Commission, 2024. Based on Eurostat (EU), EIA (US) and CEIC (China), 2024.

The future of European competitiveness

Part A | A competitiveness strategy for Europe

SEPTEMBER 2024

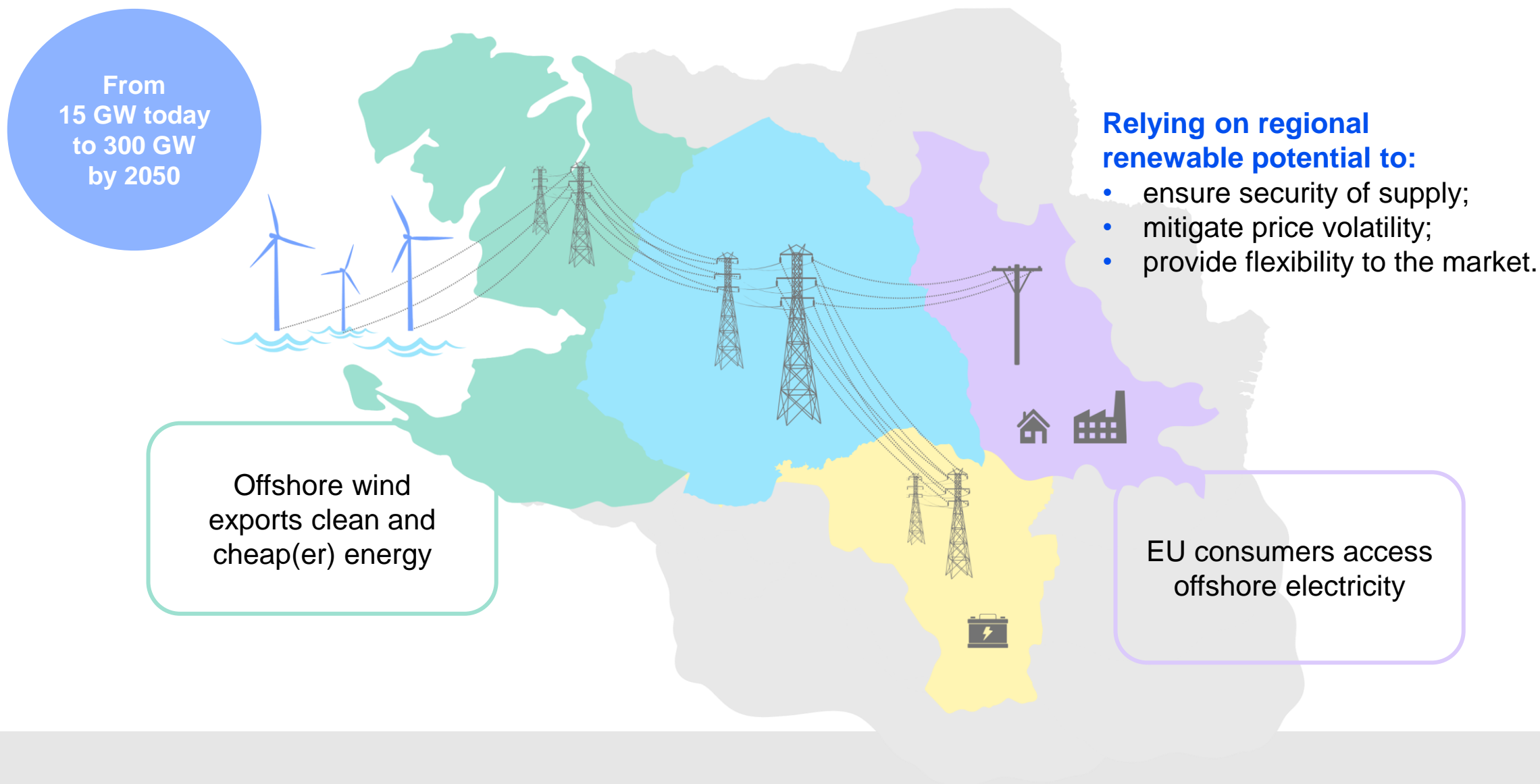
Market integration; what might it bring ...



*“The more the EU advances towards a decarbonized energy system, the greater is the need for market integration. **The benefits of integration**, in absolute terms, **grow with the increase of renewables in the system**, strengthening the value of its flexibility and overall resilience.”*

*“**The EU should develop the governance needed for a genuine Energy Union** so that decisions and market functions of cross-border relevance are taken centrally.”*

Leveraging energy resource endowments across the EU

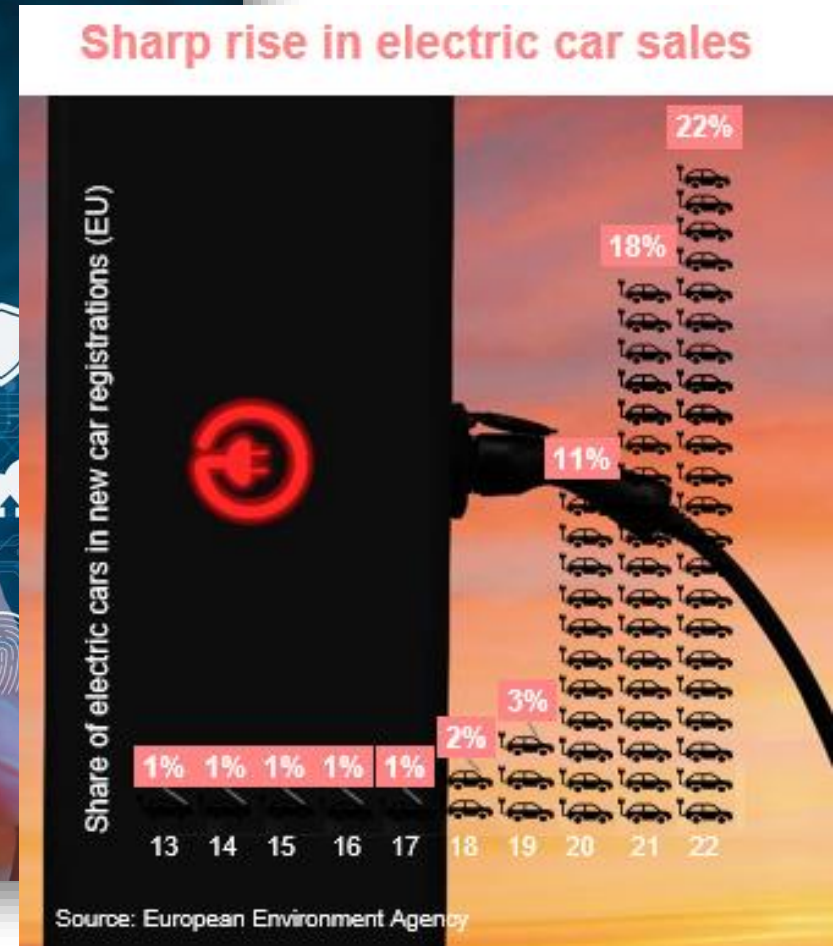


Key notion of ‘trust’: What might it take to get there?



1. **It starts & ends with political will:** Commitment to **structurally integrate energy markets**; a commitment that is anchored institutionally.
2. Coordinated **infrastructure planning and cost-/benefit-sharing** across borders, done or verified by public authorities.
3. **Coordinated renewable and flexibility deployment** across borders.
4. Closer **integration of real-time operation** (especially offshore).
5. **Rigorous enforcement by public authorities** to ensure trust in the whole framework; why else accept increased interdependence?

Digital, distributed & participatory = the future



Greater role for demand response

Barrier	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Lack of a proper legal framework to allow market access			N/A	Moderate	Moderate	Moderate				Moderate								Moderate			Moderate		Moderate					
Unavailability or lack of incentives to provide flexibility	Moderate	Moderate	N/A	Moderate	Moderate	Moderate	N/A			Moderate		Moderate	Moderate	Moderate	N/A		Moderate	Moderate		Moderate		Moderate	Moderate		Moderate	Moderate	Moderate	
Restrictive requirements to providing balancing services			N/A	Not (too) restrictive						Moderate			Moderate		N/A	Moderate				Not (too) restrictive			Moderate	Moderate				
Restrictive requirements to providing congestion management	High		N/A	N/A	High	Moderate	High	Not (too) restrictive				Moderate			High		Not (too) restrictive	Not (too) restrictive	High	Moderate	Moderate		Moderate		Moderate		High	
Restrictive requirements to participating in capacity mechanisms	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate		Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate		Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive		Not (too) restrictive	
Restrictive requirements to participating in interruptibility schemes	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive		Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Moderate	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	
Limited competitive pressure in the retail market			Moderate	Moderate		N/A	N/A				Moderate	Moderate	Moderate	Moderate	Moderate		Moderate	Moderate		High	Moderate		Moderate	Moderate			Moderate	
Retail price interventions		N/A	Moderate	High			Not (too) restrictive	Not (too) restrictive		Not (too) restrictive	Moderate	High	N/A	Moderate	Not (too) restrictive		Moderate	N/A	Not (too) restrictive	High	High		High	N/A	Not (too) restrictive	Not (too) restrictive	Not (too) restrictive	High
			High																									

High

Moderate

Low

Not (too) restrictive

N/A

NAP



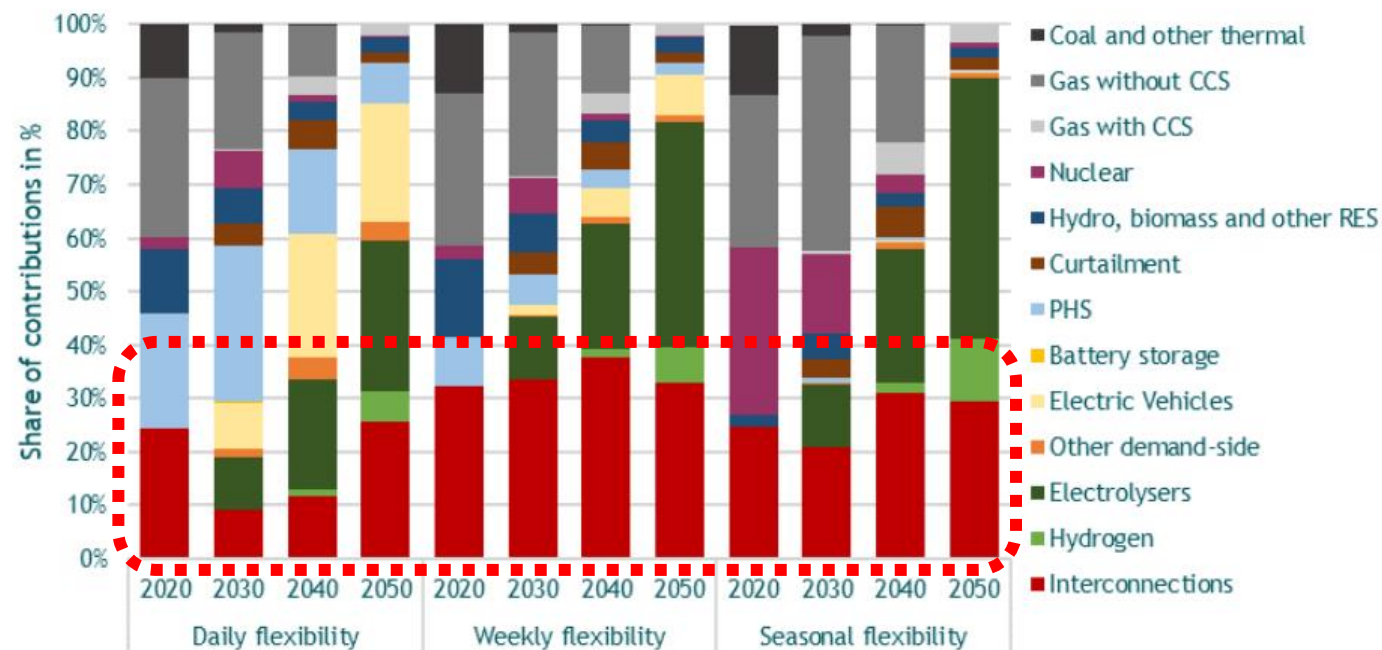
Barriers to demand response are often ‘hiding in plain sight’.

The sum of many small obstacles can add up to significant barriers, impeding system flexibility.
A detailed and updated ACER report on the first three barriers listed above will be released in early 2025.

Future flexibility needs also point to interconnectors



Share of technologies providing system flexibility in the Pentalateral countries for daily, weekly and seasonal timeframes

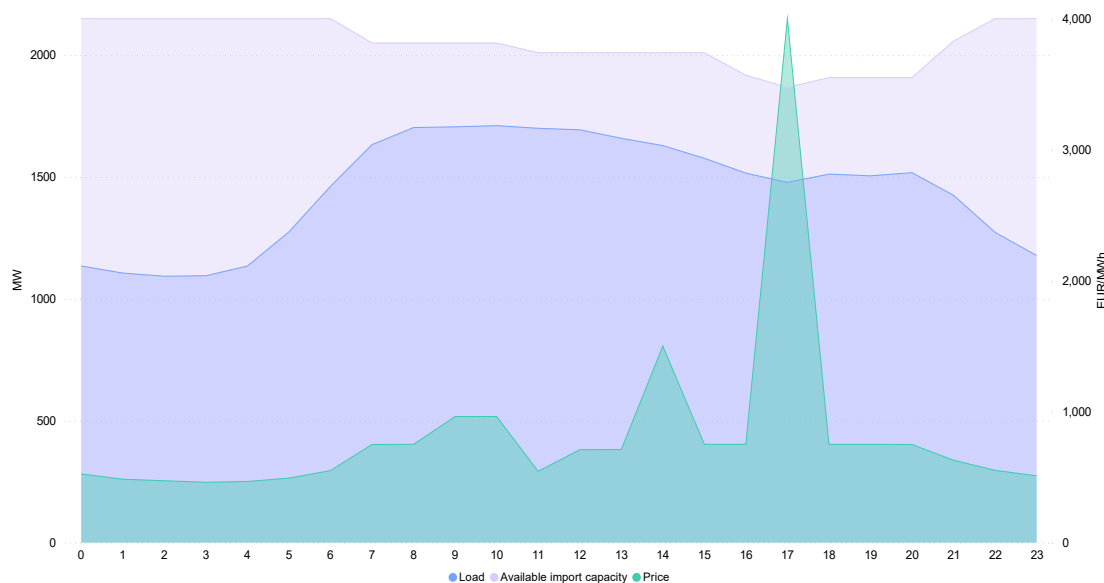


As coal and conventional gas plants increasingly are phased out, flexibility portfolios will transform, gradually relying more on cross-border exchanges, storage, demand-side response and low-carbon technologies. Interconnections can play a key role, not least in multi-day/multi-week flexibility time frames.

Beyond flexibility, providing also security of supply

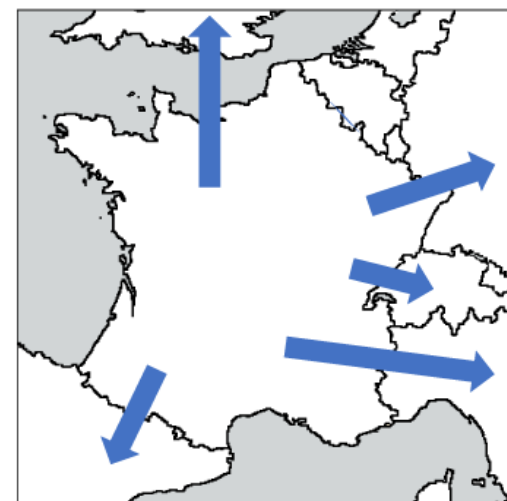
Small reductions in cross-zonal capacity triggered price spikes in the Baltic region, 17 August 2022

Hourly variations in load, import capacity and day-ahead price in the Baltic region on 17 August 2022 (MW, MW and EUR/MWh, respectively)

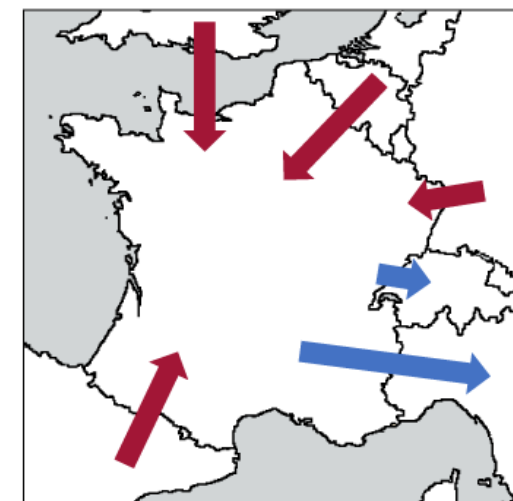


France became a huge importer of electricity during the energy crisis

2019 and 2021 mean net cross-border flows



2022 net cross-border flows



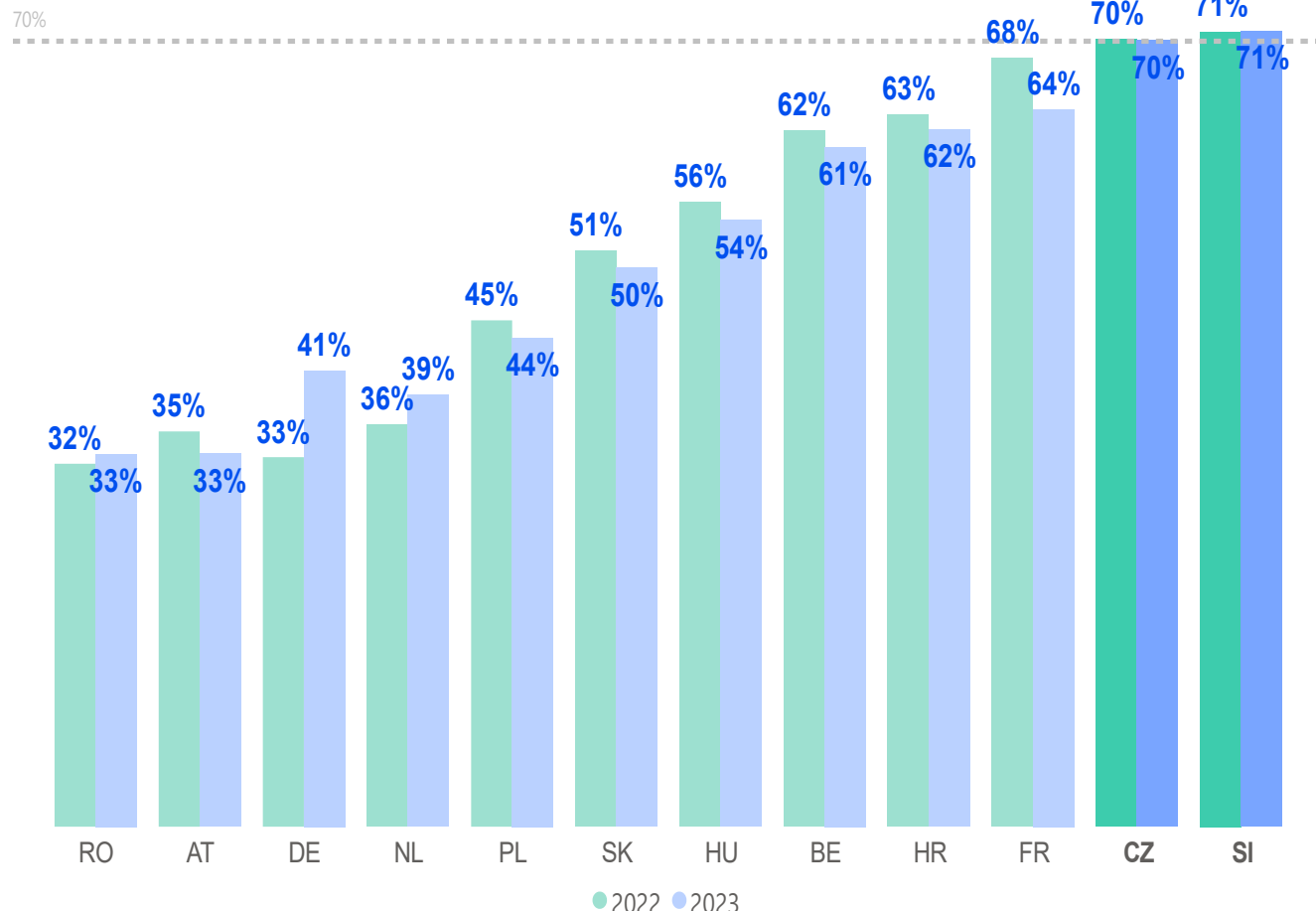
Note: The length of the arrow is directly proportional to the amount of electricity imported or exported.

Well-interconnected markets are key to mitigate the impact of national price shocks and enable Member States under strain to import surplus electricity from abroad or export excess generation.

However, improvements are needed ...

There is limited progress towards 70%

Average minimum hourly margin available for cross-zonal trade in the Core capacity calculation region
per Member State – H2 2022-2023 (% of Fmax)

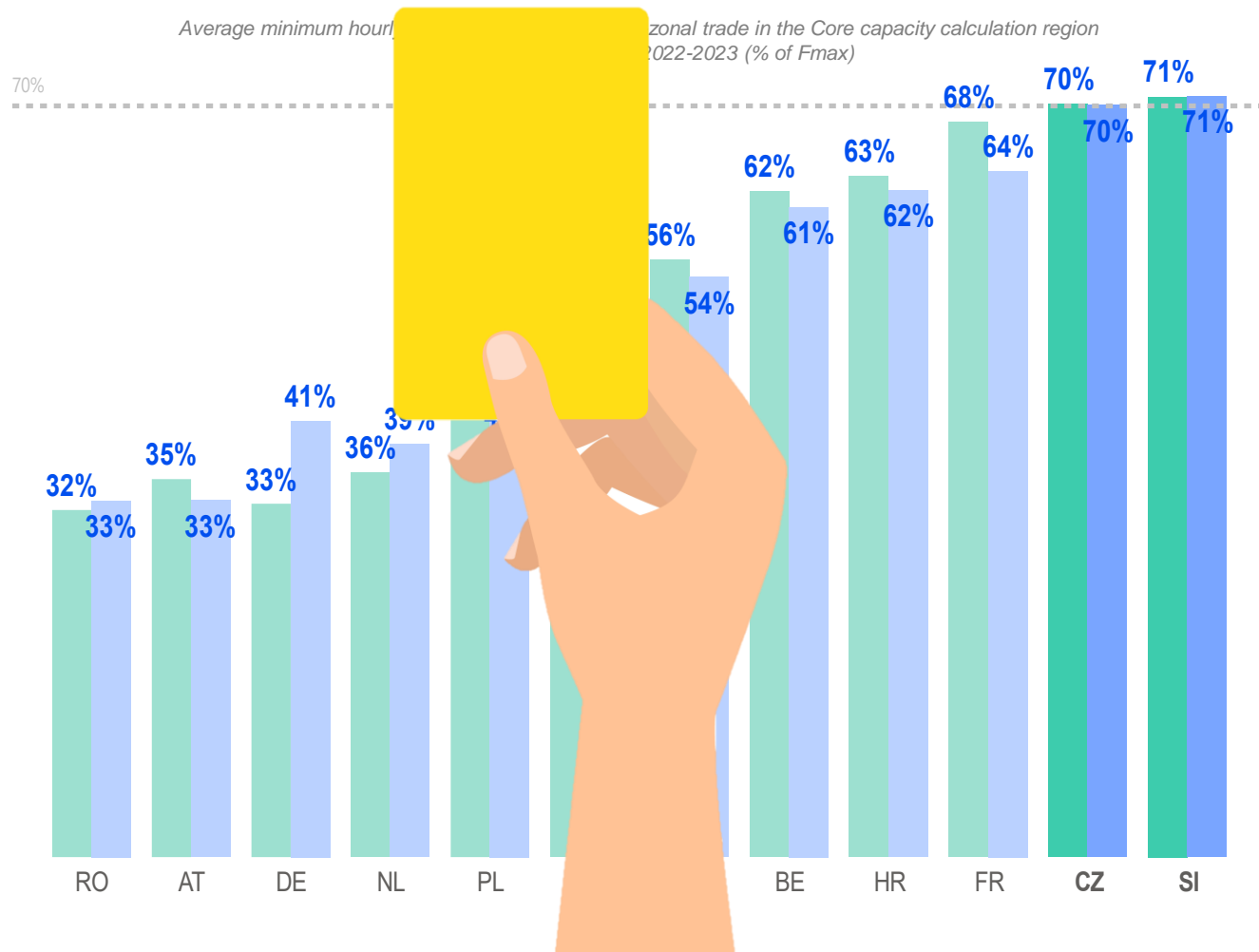


Increasing cross-border capacity is needed to unlock benefits, including more flexibility. Necessary steps are:

- TSOs to make **optimal and coordinated use of remedies to relieve congestions** in the grid.
- TSOs to undertake **targeted grid developments**.
- TSOs to complete the **bidding-zone review** process and Member States/ European Commission to decide.

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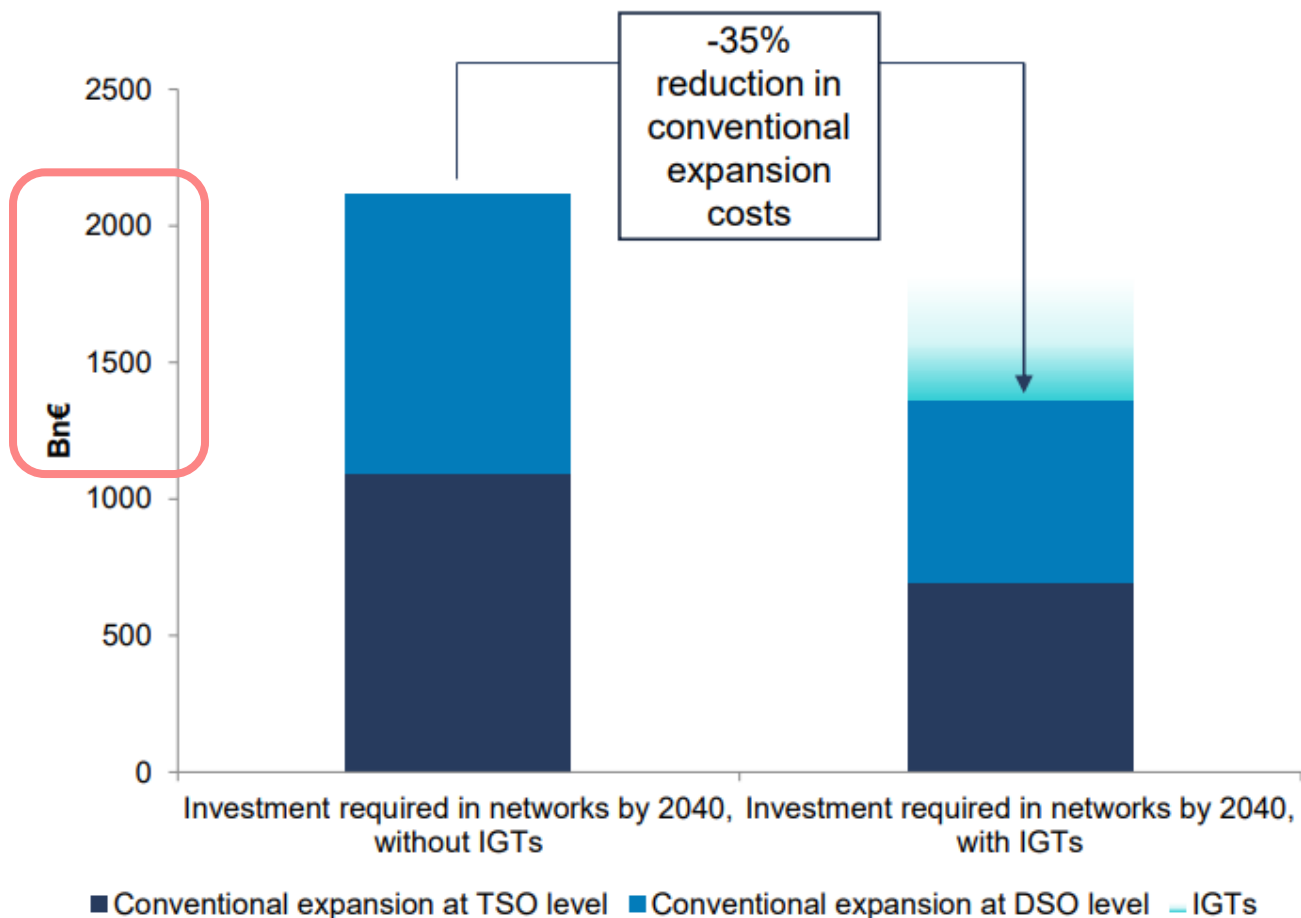


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Finally, grid buildout calls for grid **capacity** increase

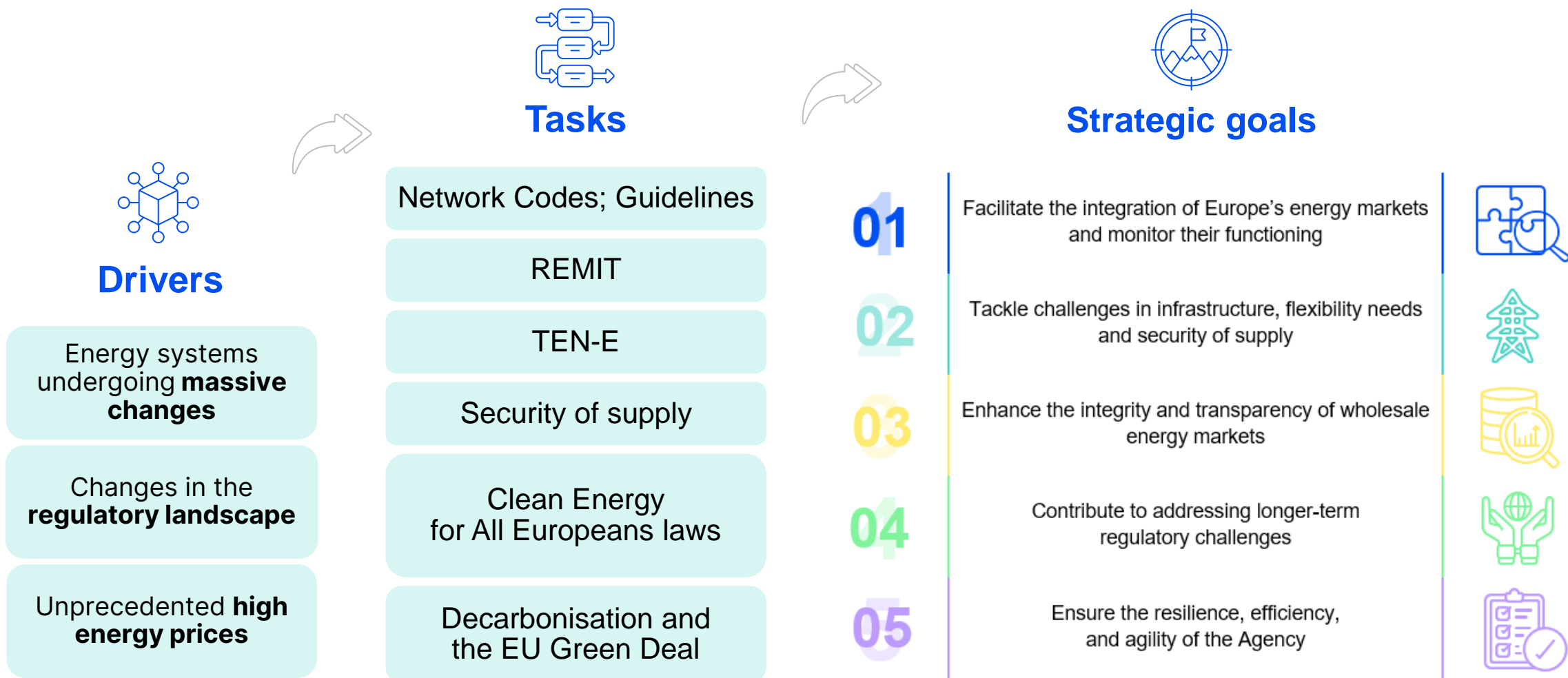
Gross benefits of IGT deployment - Saved investments in network expansion



Innovative grid technologies can help:

- 20-40 % increase in overall network capacity by 2040
- 35 % reduction in conventional expansion costs by 2040

ACER planning, priorities & needs up ahead



ACER tasks per recent EU legislative reforms

Electricity Market Design

- Flexibility needs
 - Approval of the methodology
 - EU assessment
 - Reporting on barriers to flexibility
- PPAs (data collection, reporting)
- Streamlining the framework for capacity mechanisms (EU assessment)
- Report on best practices for network tariffs

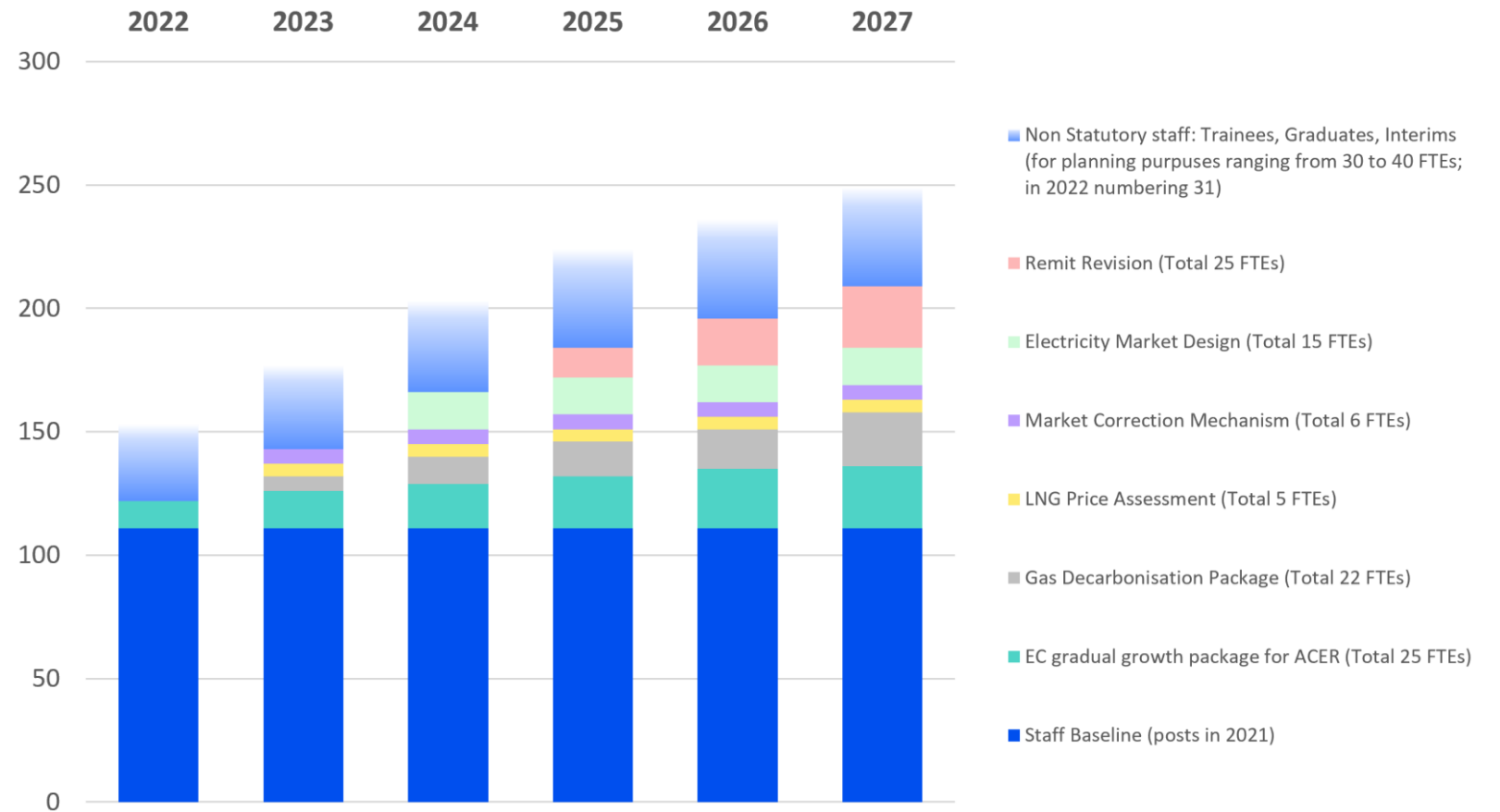
REMIT II

- Investigating breaches of the REMIT prohibitions/obligations
- Scope of products extended to wholesale energy financial derivatives
- Issuing guidelines to market participants
- Authorisation and supervision RRM & IIPs
- Continuing LNG benchmark

Hydrogen and Decarbonised Gas Market Package

- Opinions on hydrogen infrastructure and network planning
- Reports on the impact of unbundling rules on the hydrogen market, and hydrogen market functioning
- Monitoring of hydrogen markets
- Guidelines and other deliverables related to Network Codes
- Opinions on exemptions for hydrogen, harmonisation of published information, methodologies for setting hydrogen network access tariffs or reserve prices

Implications for staff growth & future premises



Thank you for the opportunity. Looking forward to the discussion.



European Union Agency for the Cooperation
of Energy Regulators

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European Union Agency for the Cooperation
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ACER is hiring!

Join us in powering Europe's energy future.

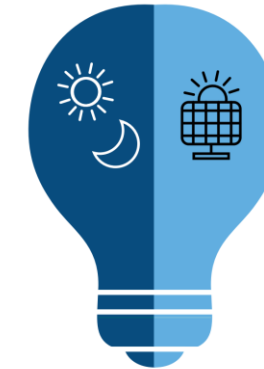
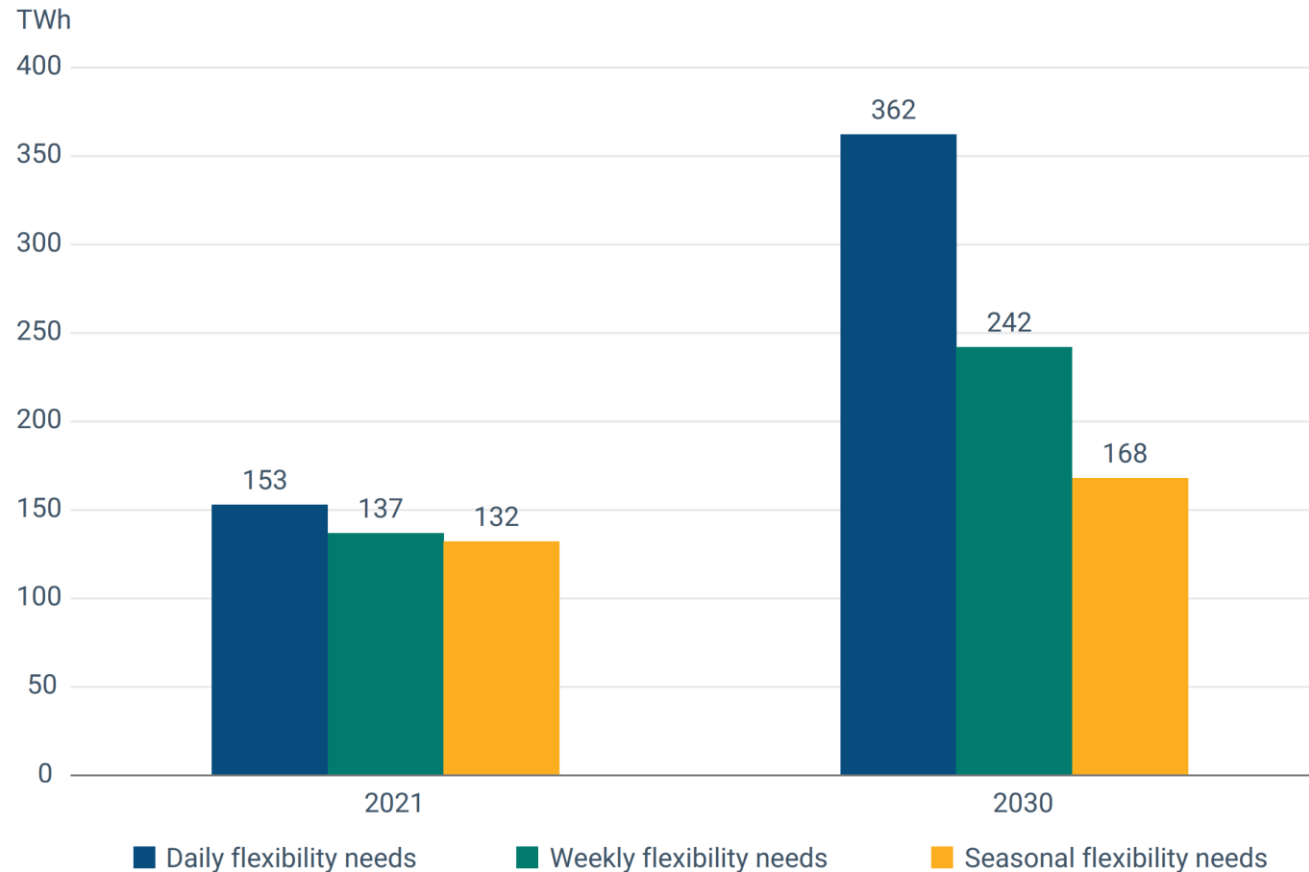
Check out our job vacancies (in many areas).





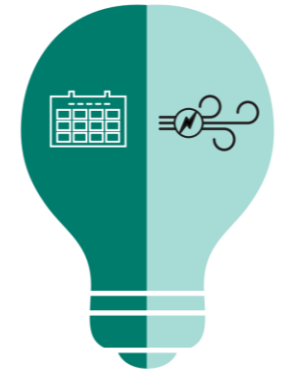
- **Supporting the integration of energy markets in the EU** (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.
- **Contributing to efficient trans-European energy infrastructure**, ensuring alignment with EU priorities.
- Monitoring energy markets to ensure that they function well, **detering market manipulation and abusive behaviour**.
- Where necessary, **coordinating cross-national regulatory action**.
- Governance: **Regulatory oversight is shared** with national regulators. **Decision-making** within ACER is collaborative and joint (formal decisions requiring 2/3 majority of national regulators). **Decentralised enforcement** at national level.
- Headquartered in Ljubljana, Slovenia. **Engaged across the EU**.

Flexibility needs double by 2030



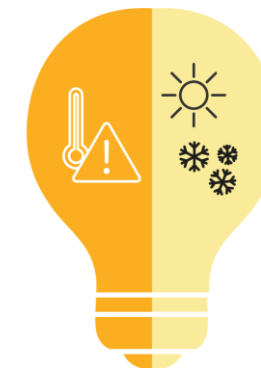
Daily flexibility

Morning and evening demand peaks
Day-night generation difference



Weekly flexibility

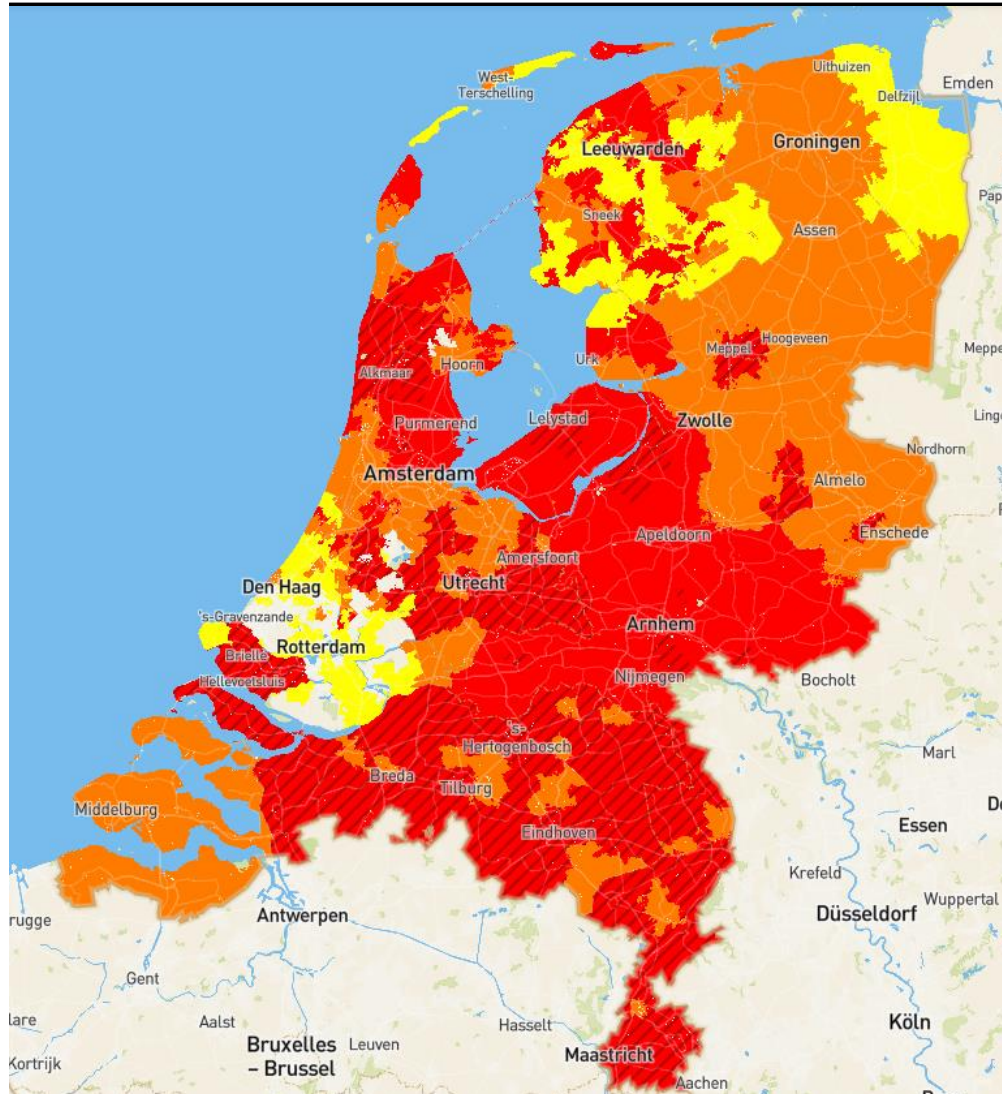
Weekday-weekend demand difference
Wind pattern fluctuations



Seasonal flexibility

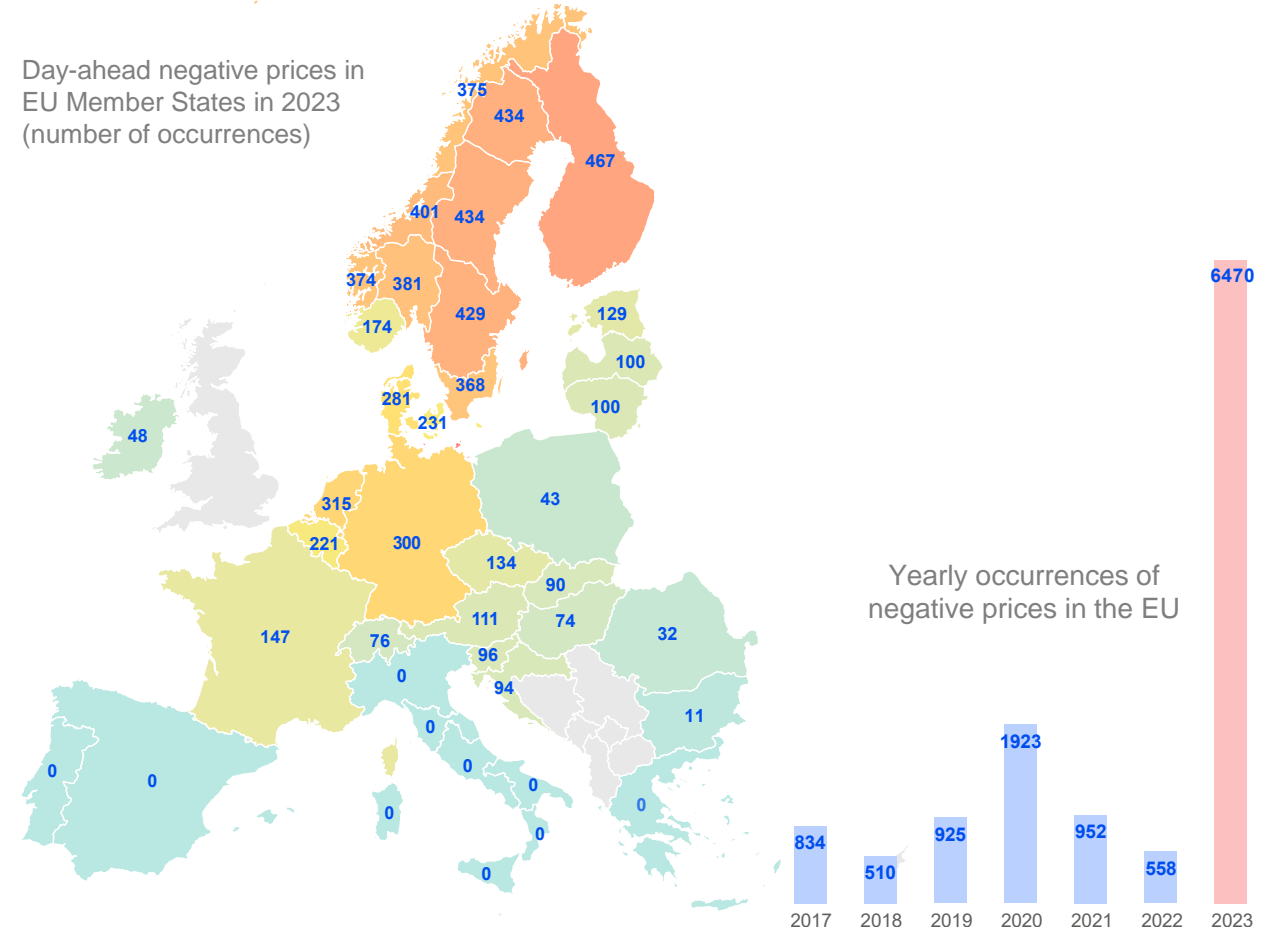
Heating-cooling periods
Seasonal weather patterns

Multiple signals of insufficient flexibility



Unprecedented record of negative prices

Day-ahead negative prices in EU Member States in 2023
(number of occurrences)



Yearly occurrences of negative prices in the EU

