



European Union Agency for the Cooperation
of Energy Regulators

EU energy markets, future competitiveness & a few energy transition ‘truths’

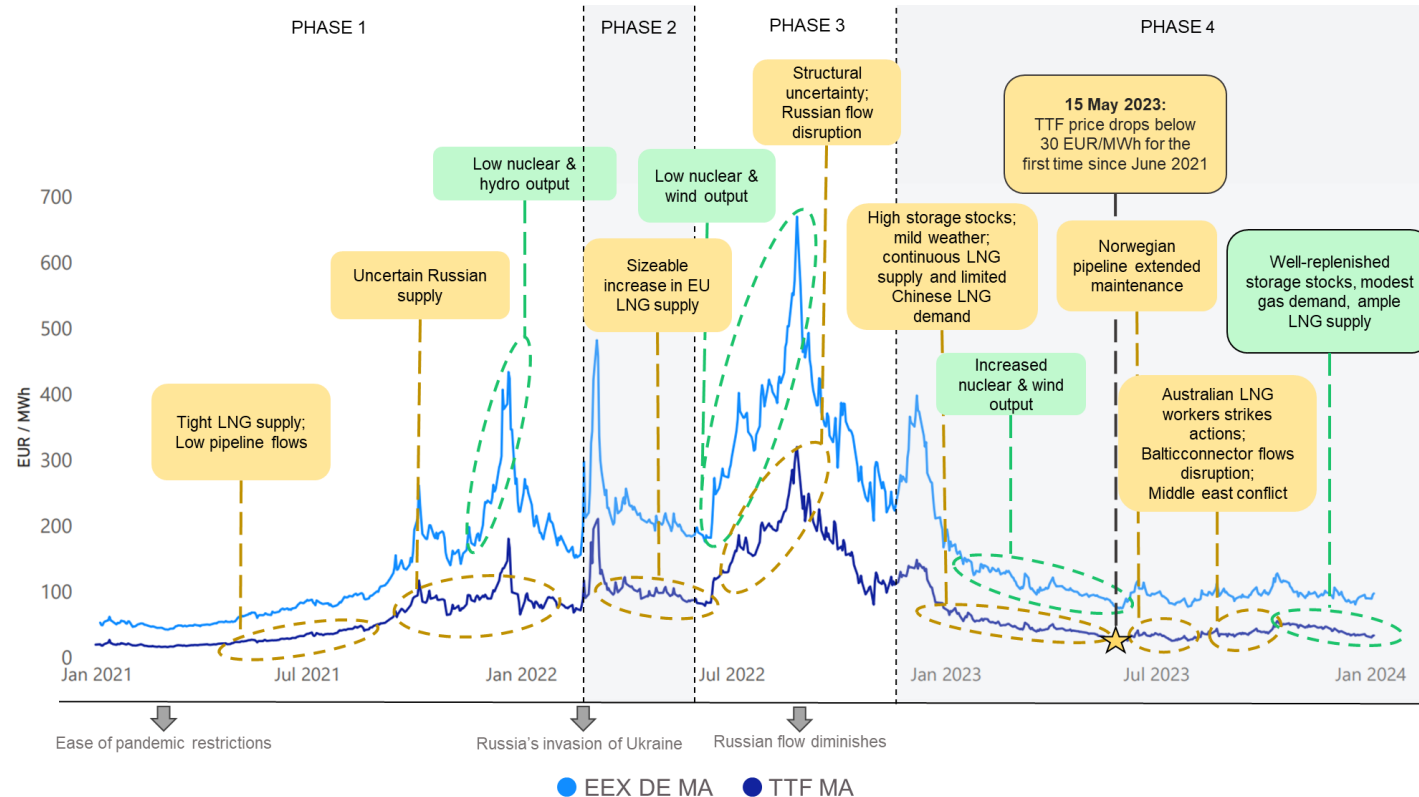
Meeting of the Eurogroup on 15 January 2024 - Brussels

Christian Zinglensen, ACER Director

Some fundamentals today and for the immediate years ahead

The 'rollercoaster ride' is subsiding

EU gas and electricity prices and relevant market fundamentals - January 2021 – January 2024 - (EUR/MWh)



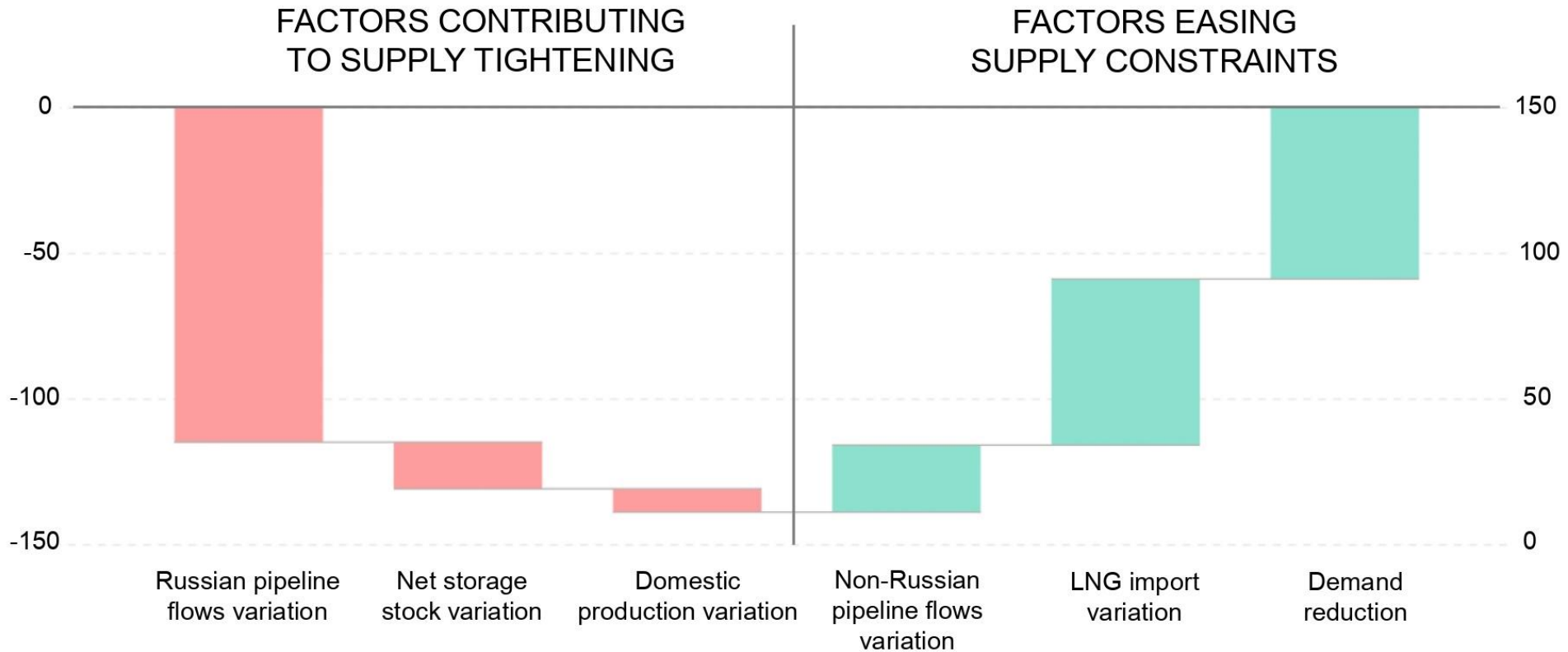
A gas supply shock of unprecedented scale fuelled the energy crisis in 2022. An additional shock, this time in electricity generation, added stress to European energy markets, especially during Q3 and Q4 2022. An improved energy demand-supply balance facilitated the decrease of EU energy prices across 2023.

Source: ACER based on Platts' The Dutch Title Transfer Facility gas hub (TTF) and the German European Energy Exchange (EEX) month-ahead contract prices are used as benchmarks for gas and electricity pricing respectively.

See: [ACER's electricity and gas Key Developments reports \(& data dashboards\)](#), 2023.

LNG and demand reduction ‘to the rescue’

Estimated EU gas supply and demand differences in 2023 in comparison to 2021 - bcm



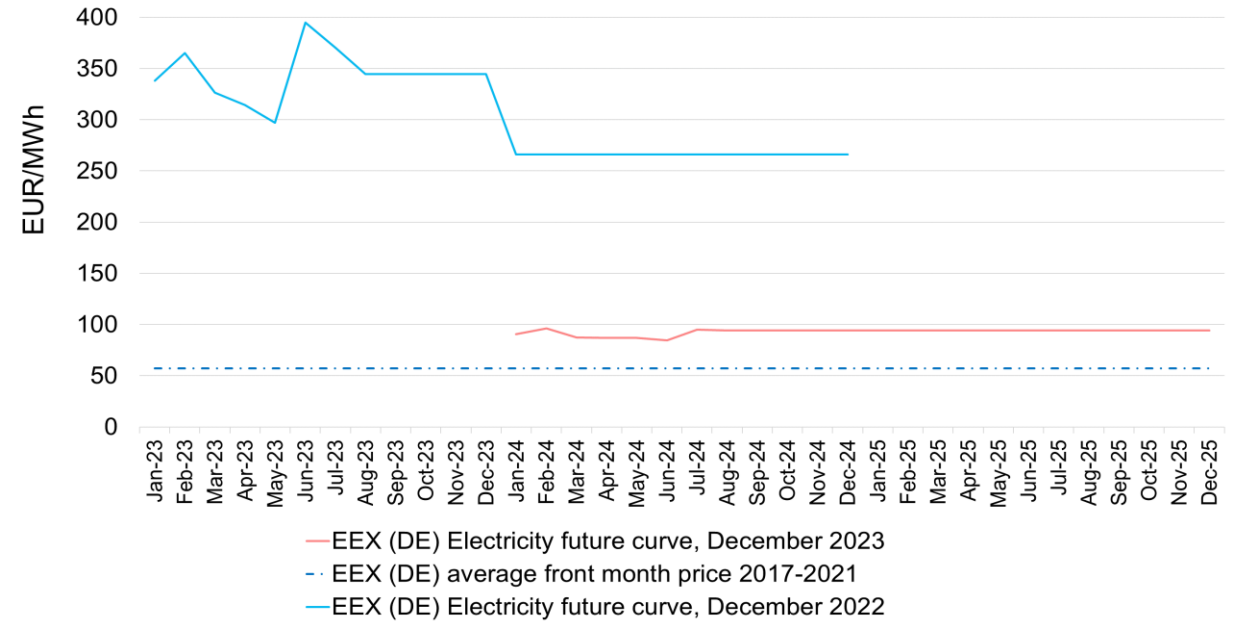
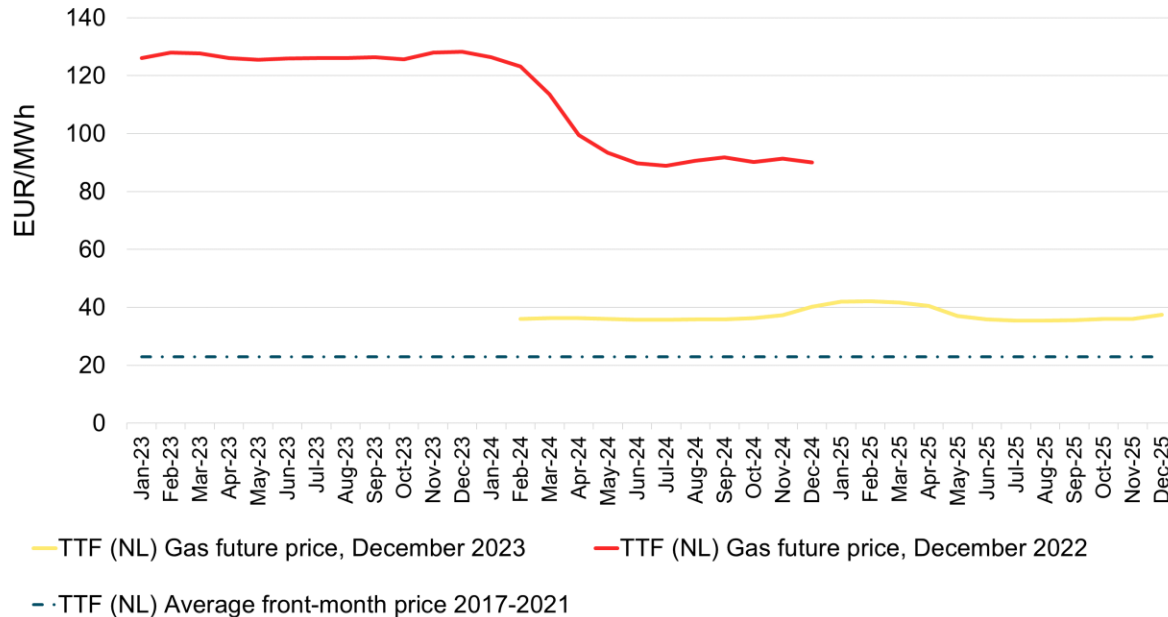
A combination of enhanced LNG supply, gas infrastructure investments (mostly in LNG regasification) and sharply reduced gas consumption has brought a new gas supply-demand balance.

Source: ACER calculation based ENTSOG TP, THE, Enagas, and GIE and Platts. Note: Preliminary and estimated data for 2023 utilized in the creation of the figure.

See: [ACER's European Gas Markets Market Monitoring Report](#), October 2023.

Still, price expectations remain higher than pre-crisis

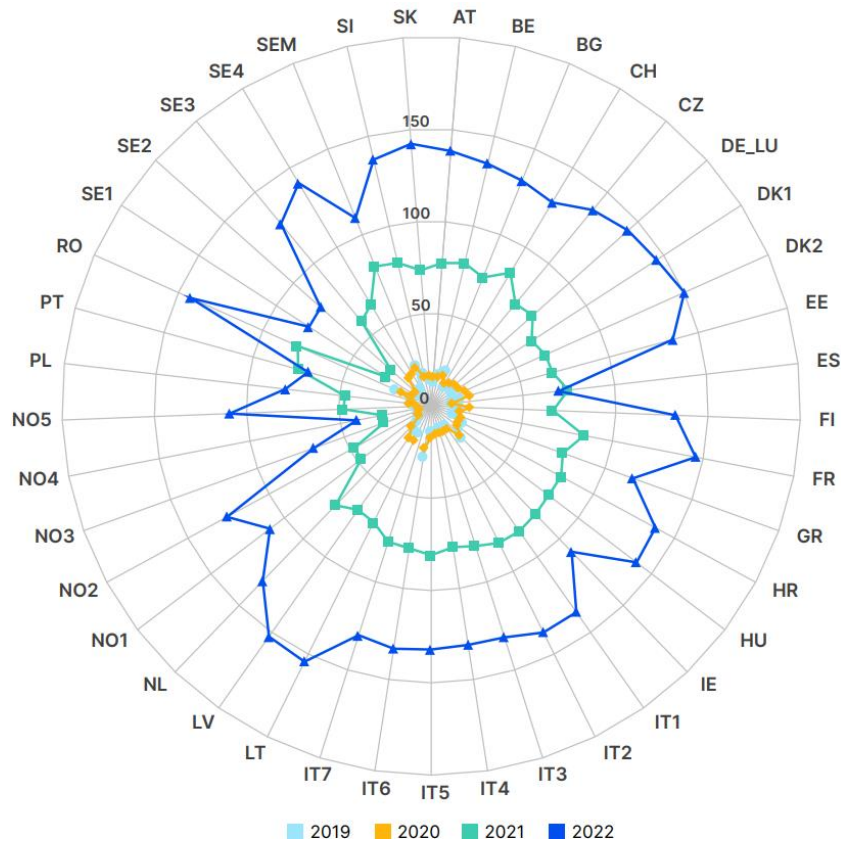
Two-year evolution of TTF (left) and EEX (right) gas and power future prices - December 2023 (EUR/MWh)



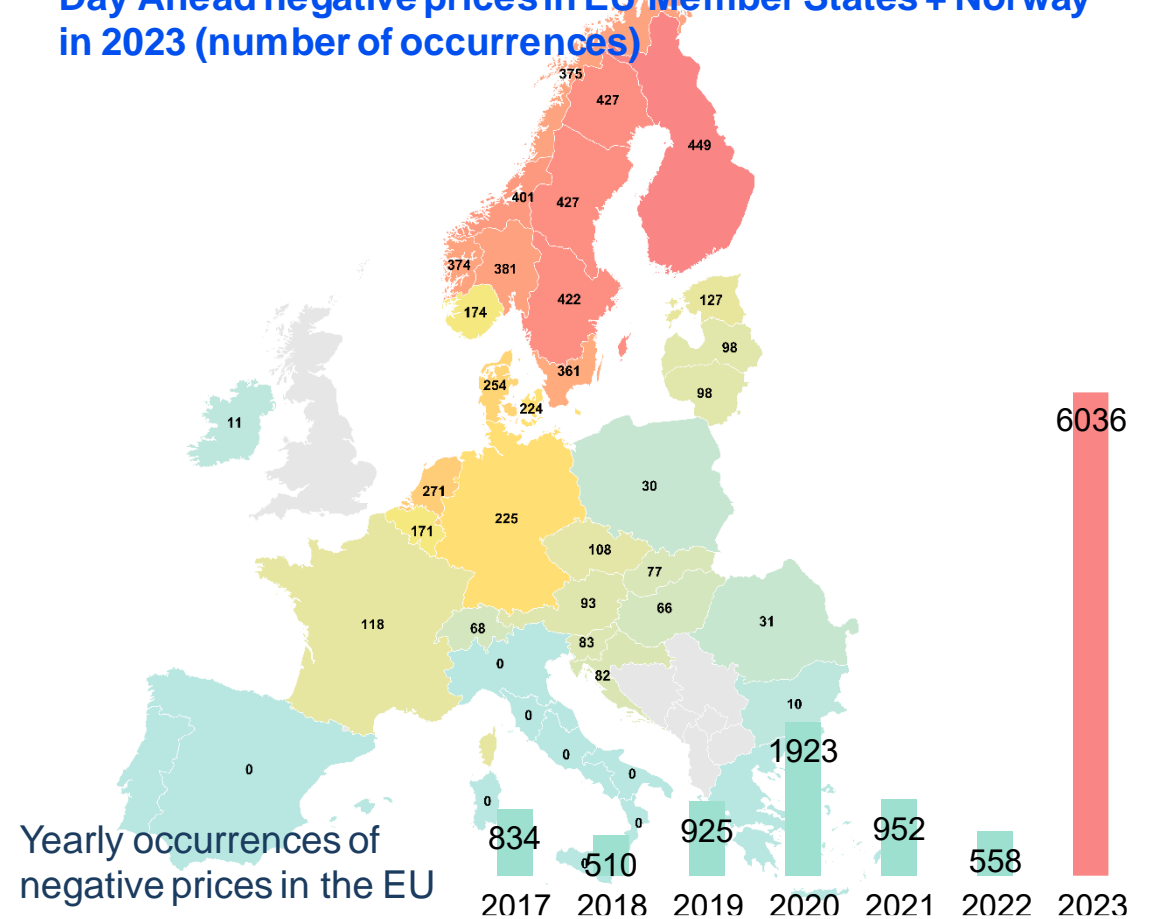
Although gas and power futures' prices have substantially dropped in the last months, they remain 50% above recent historical average. The resilience of EU demand and the global competition for LNG resources are important factors for EU gas and power price formation going forward.

For electricity, volatility is likely here to stay

Annual volatility of day-ahead prices per bidding zone – 2019-2022



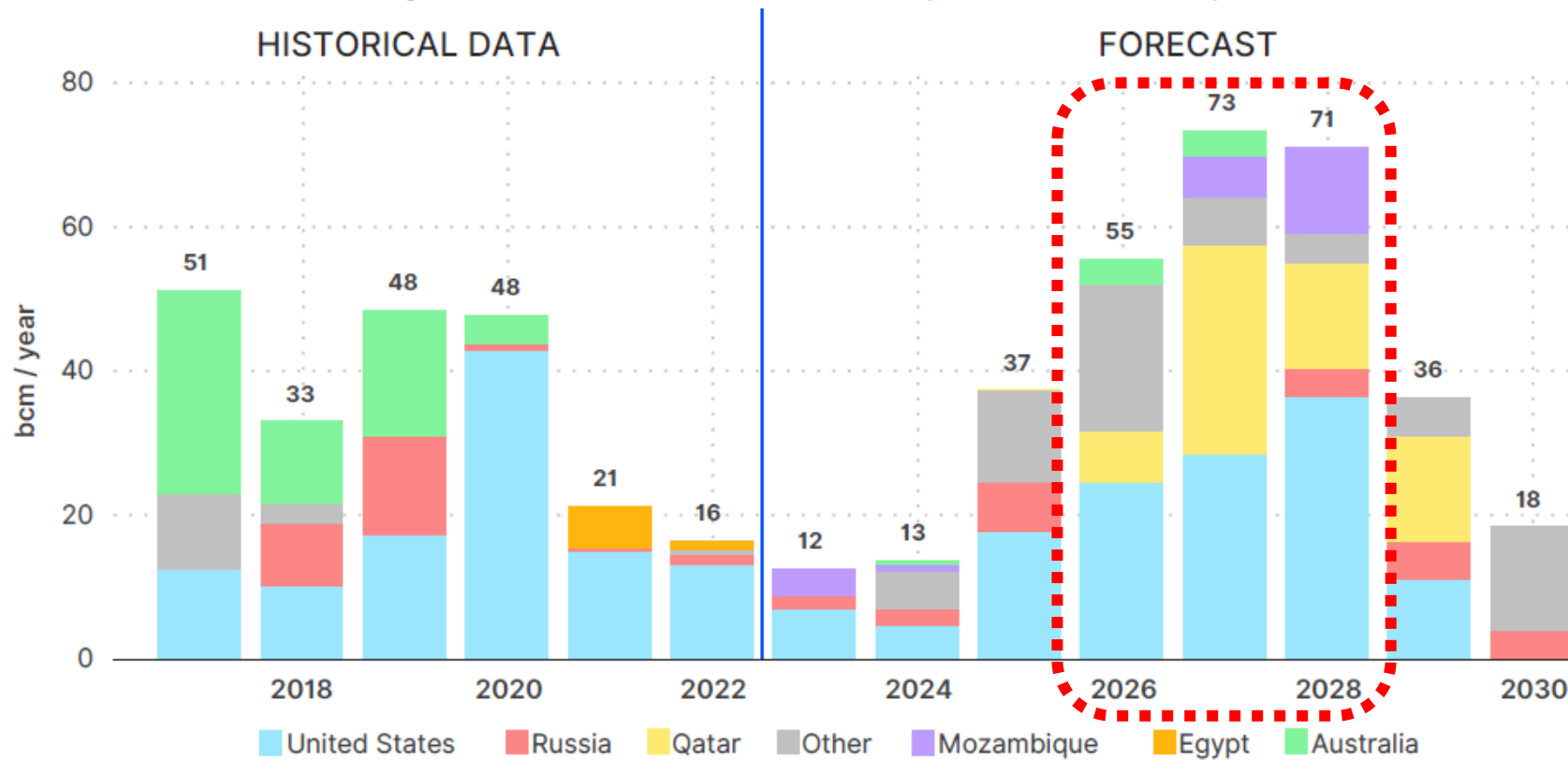
Day Ahead negative prices in EU Member States + Norway in 2023 (number of occurrences)



The recently agreed EU electricity market design reform seeks to manage volatility by improving means of longer-term contracting, better functioning forward markets, enhanced consumer protection etc.

Source: ACER calculations based on ENTSO-E data.
Note: One occurrence of negative pricing corresponds to one hour during which prices are negative.

Overview of global LNG liquefaction capacity additions (bcm/year) - 2017 - 2030



EU gas – and hence also wholesale power – prices will be more exposed to global LNG competition and thus face higher volatility going forward. Given current LNG market tightness for the next couple of years, unexpected events, such as outages, can have outsized impacts, adding tension to global LNG supply and hence to EU gas prices.

Global gas price benchmarks – dollar/mmbtu – July 2023

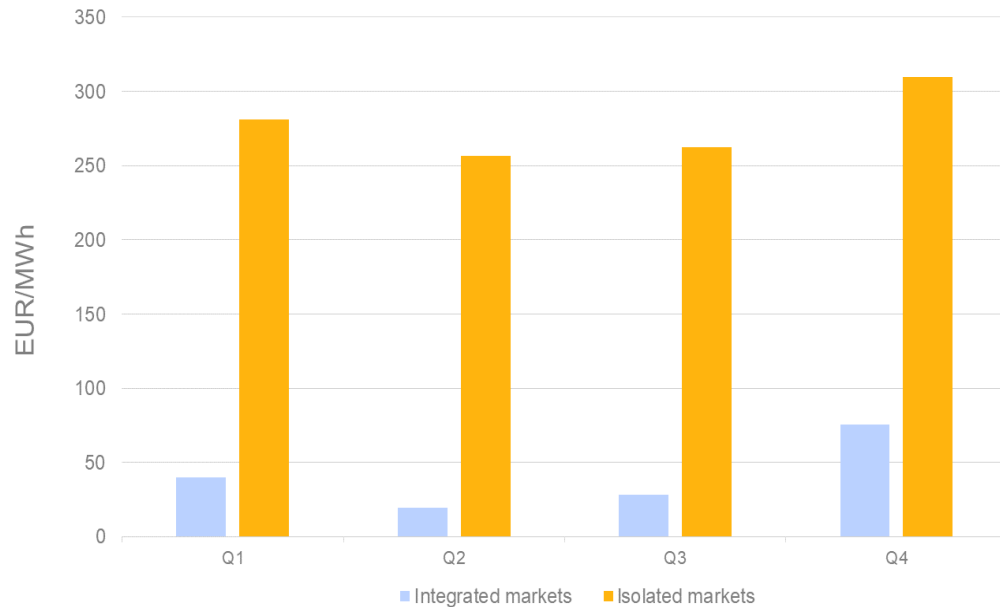


If Europe wants to fundamentally dissolve the implications of global gas price differentials not least vis-à-vis North America, the answer is to get significantly out of gas. Currently, that would seem a rather long-term proposition. Hence, attention shifts to other competitive advantage factors, given continuous subsidisation of energy input factors is likely to prove fiscally extremely challenging.

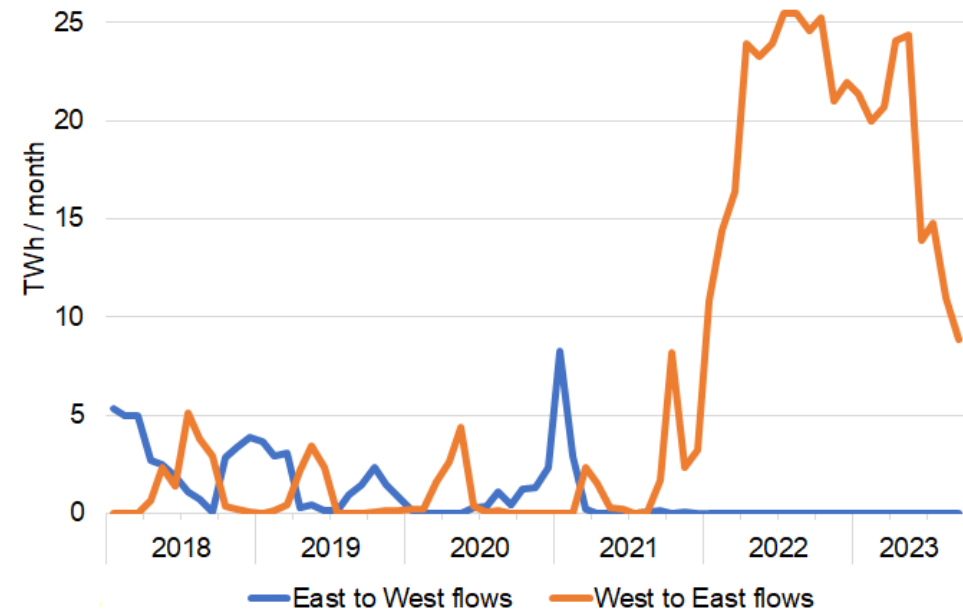
The EU's competitive advantage in energy – really? If so, where & how?

First, unprecedented energy market integration

Price volatility in integrated and isolated electricity markets in the EU, 2021 (EUR/MWh)



Gas flows between Germany and Belgium, 2018 – Q3 2023 (TWh/month)

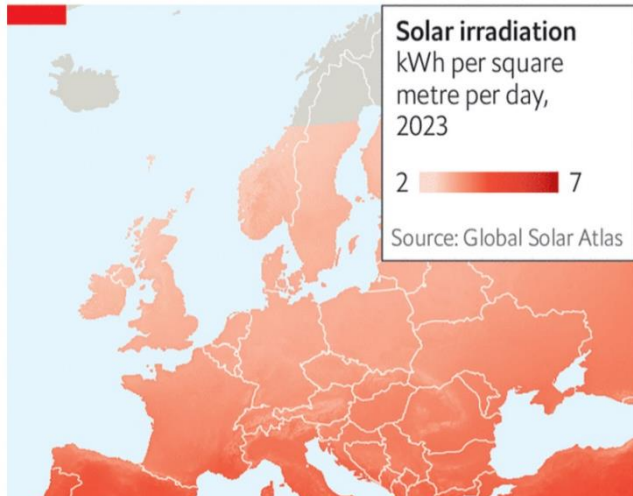


Integrated markets showed high levels of resilience during the recent energy crisis enabling e.g. the integration of renewables, ensuring security of supply, facilitating needed changes in gas flows, mitigating price volatility and providing flexibility to the system.

Source: ACER based on NEMOs' simulations. Volatility was estimated by using the standard deviation of day-ahead wholesale prices. The standard deviation was calculated per bidding zone for the whole year, then averaged out across the EU.

See: [ACER's Final Assessment of the EU Wholesale Electricity Market Design](#), April 2022.

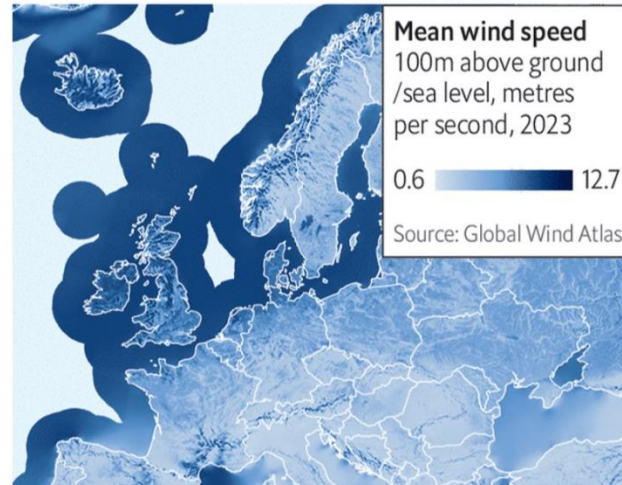
With potential for further competitive advantage



Business | A place in the sun

Can the Mediterranean become Europe's energy powerhouse?

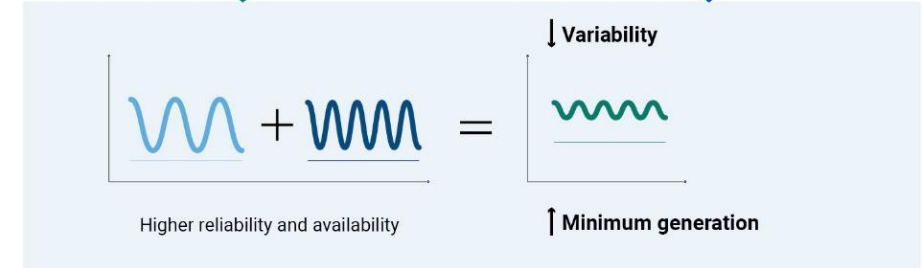
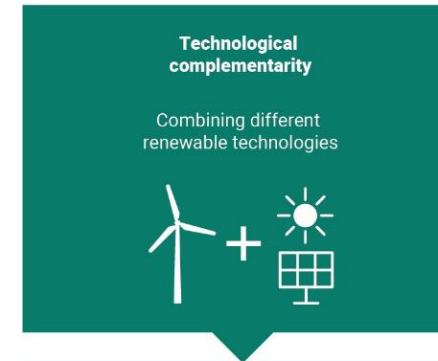
Inside the push to make the sunny south a "green" hydrogen hotbed



Business | Mare industriae

Can the North Sea become Europe's new economic powerhouse?

The continent's most turbulent body of water is finding fresh uses



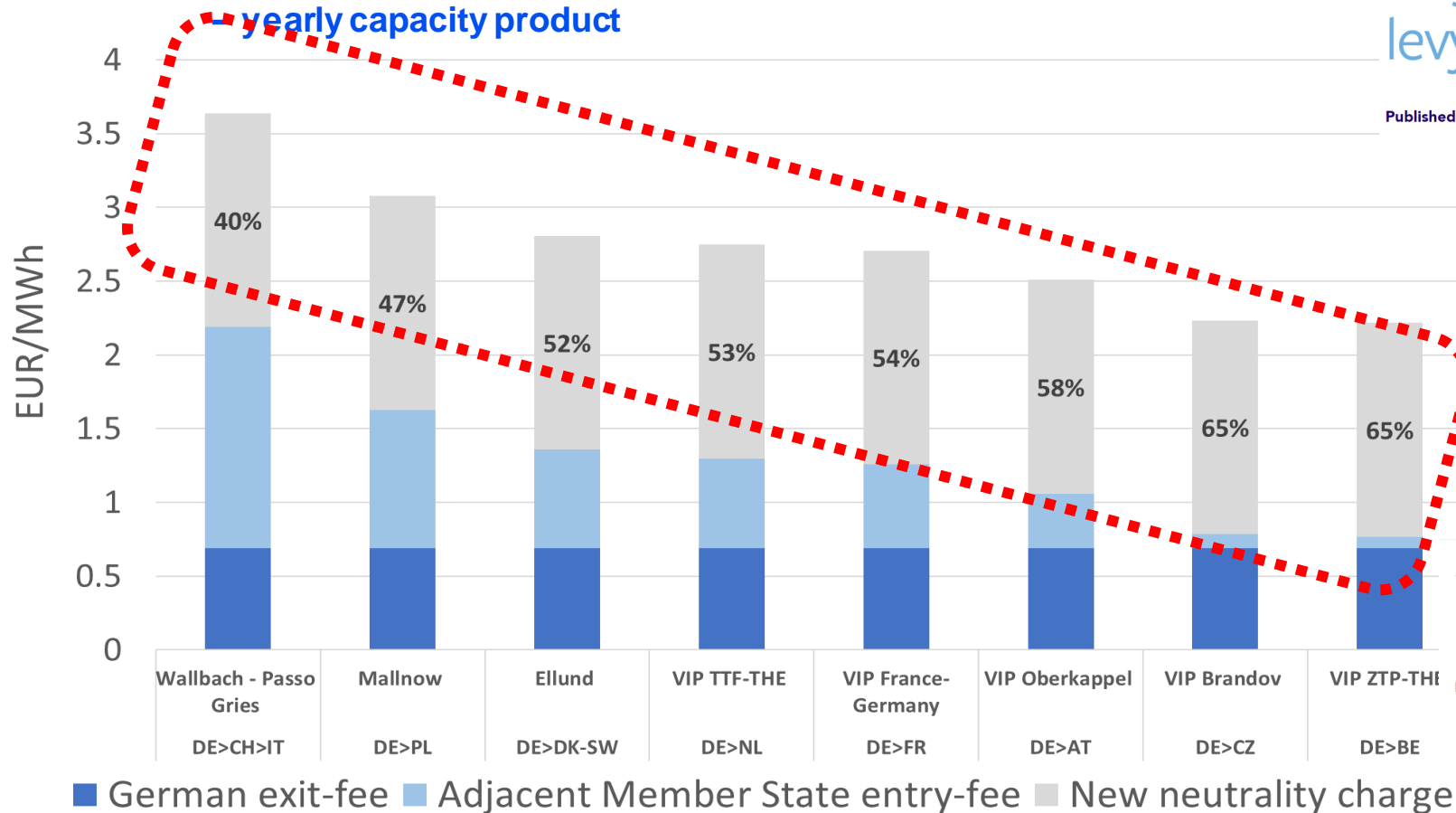
“Sharing renewable resources among well-interconnected Member States enhances the certainty of availability.”

However, risk of market fragmentation is real



However, risk of market fragmentation is real

Overview of German cross-border tariffs, including the new neutrality charge – December 2023 – (EUR/MWh and % the new levy represents)



Italy's Arera proposes gas storage levy

Published date: 15 December 2023 Italian energy regulator Arera has proposed that a levy be imposed on gas exiting the Italian grid at cross-border interconnection points, potentially for introduction on 1 April 2024 at €2.19/MWh.

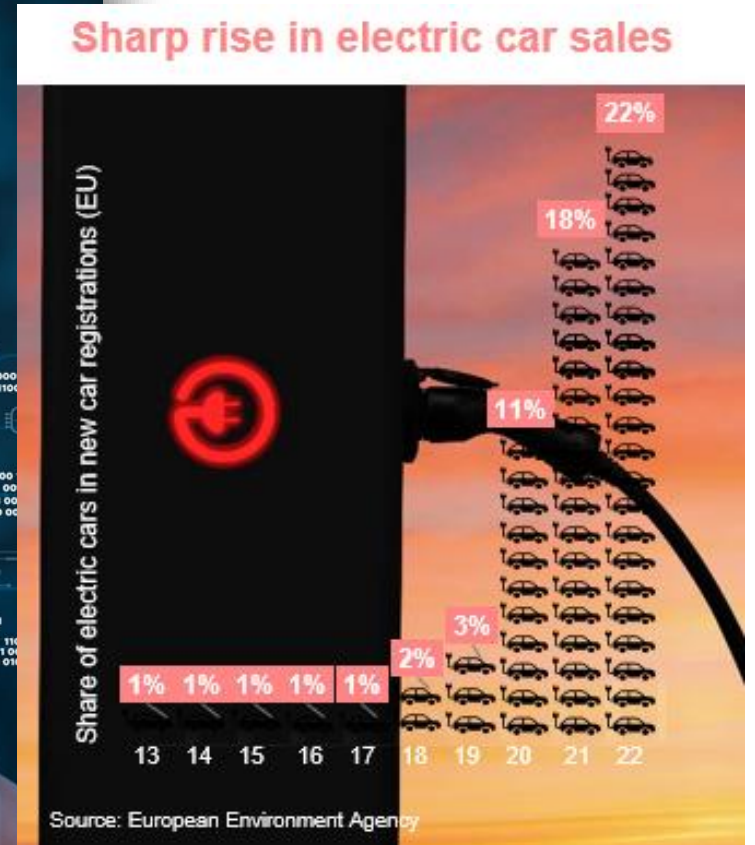
NATURAL GAS — 10 Nov 2023 | 13:38 UTC

Hungary urges EC to launch infringement procedure against Bulgaria over gas tax

Austrian regulator questions legality of storage levies

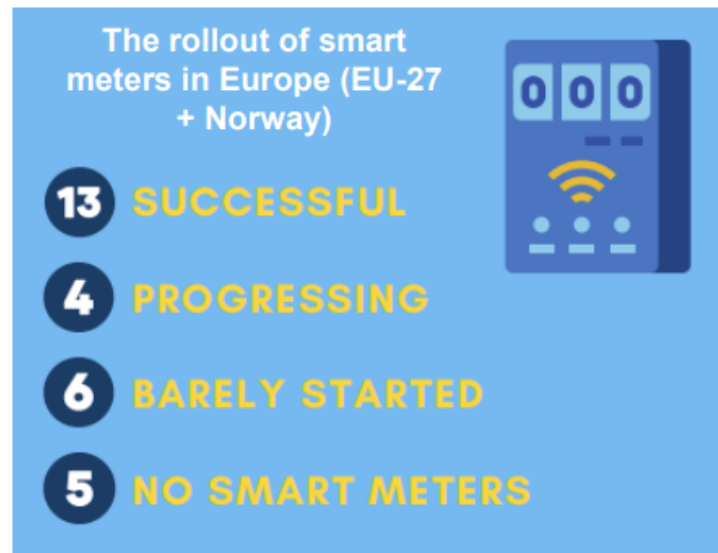
Published date: 22 December 2023 Austrian energy regulator E-Control has criticised the gas storage levy imposed in neighbouring Germany and questioned its legality, but could consider imposing its own if such measures are found to be in line with EU law, executive director Alfons Haber told Argus.

Second, digital, distributed & participatory = the future



Implying some 'do's' and some 'don'ts' ...

Supporting the roll-out of digitally enabling infrastructure



Consumers need **smart meters** to provide demand response.

With governments needing to factor in 'the full picture'



Interventions to pursue policy objective A, B or C ...



Raising barriers to demand response, new technologies or participation of all assets?

**To close, a few broader (in)convenient
truths for the road ahead**

Energy transition will be driven by demand

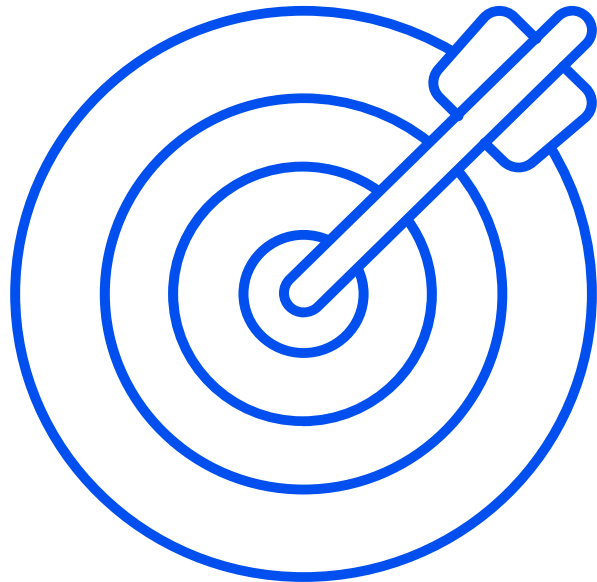




What does COP28 need to do to keep 1.5 °C within reach? These are the IEA's five criteria for success

1. Triple global **renewable power** capacity
2. Double the rate of **energy efficiency** improvements
3. Commitments by the **fossil fuel industry**, and oil and gas companies in particular, to align activities with the Paris Agreement, starting by cutting **methane emissions** from operations by 75%
4. Establish **large-scale financing mechanisms** to triple clean energy investment in **emerging and developing economies**
5. Commit to measures that ensure an **orderly decline in the use of fossil fuels**, including an end to new approvals of unabated **coal-fired power plants**

Implying what more specifically ...



'The stone age did not end because we ran out of stones ...': Targeting the structural demand drivers of that which we wish to rely less on.



'Put your money where the demand should be': Focus support on solutions lowering demand and/or shifting demand towards more desirable supply sources.



'Get ready for the bumpy ride ahead': Enhance analytical preparedness to improve the management of future shocks (aka. anticipate, navigate, mitigate).

Second, redistribution will need to take centre stage



The global backlash against climate policies has begun

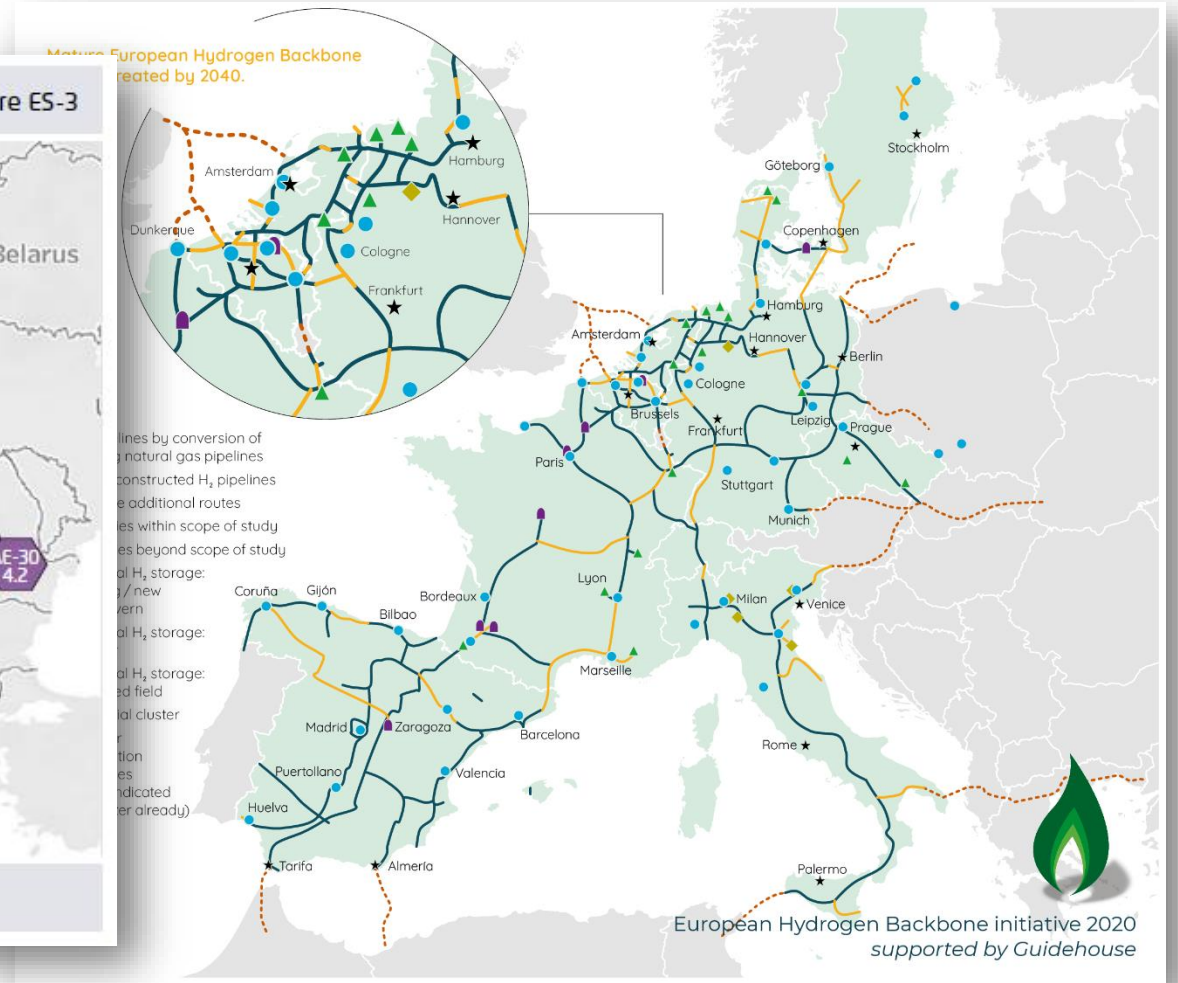
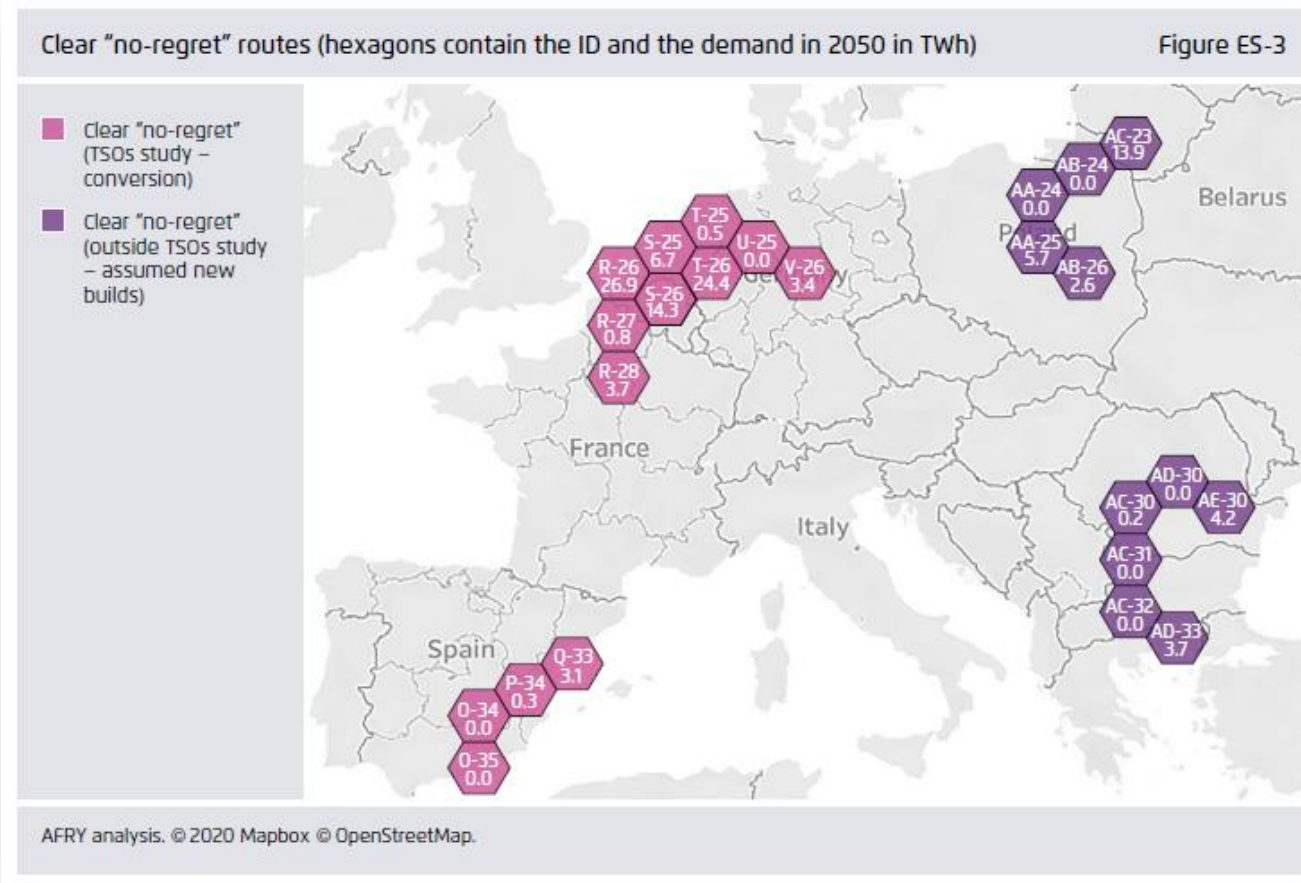
Cost, convenience and conspiracy-mongering undercut support for greenery



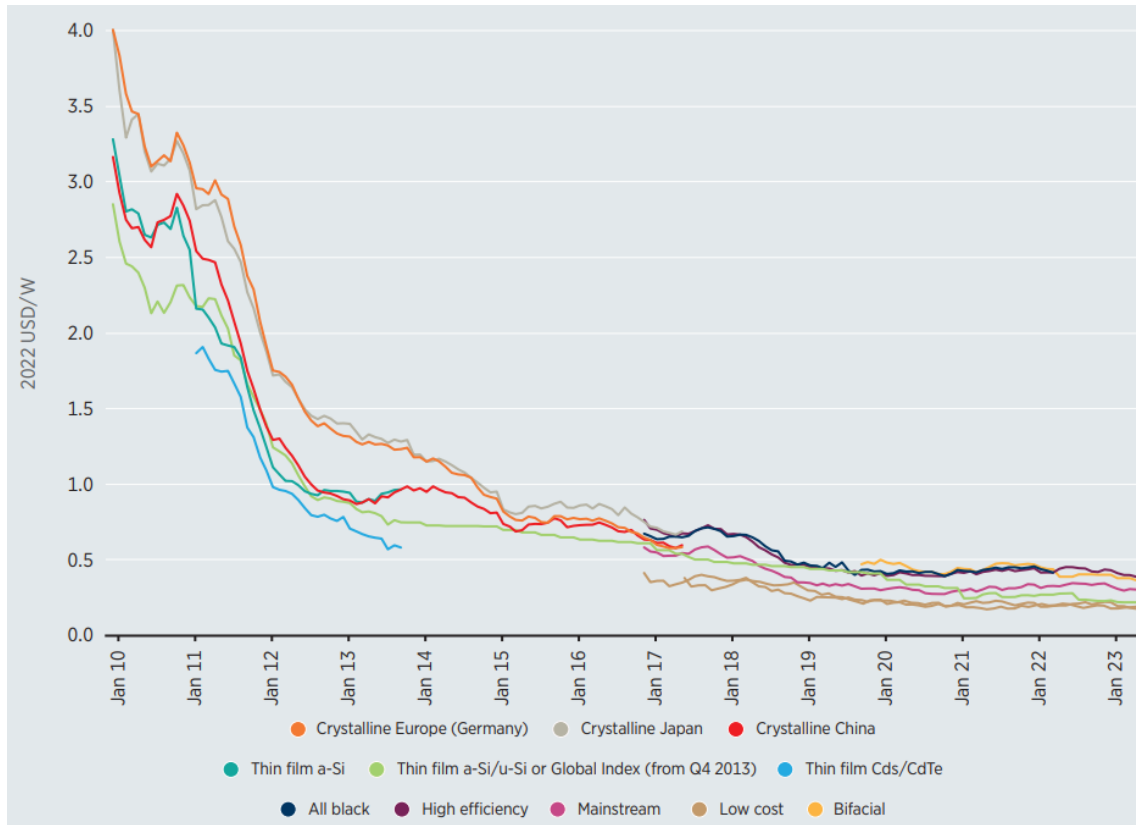
Third, 'putting all your eggs ...' vs. navigating uncertainty



Third, 'putting all your eggs ...' vs. navigating uncertainty



Average monthly solar PV module prices by technology and manufacturing country sold in Europe, 2010 to 2022



Foregoing the benefits of (sufficiently diversified) trade is likely to challenge the affordability and thus the overall viability of an ambitious energy transition pathway.

**Thank you for your attention.
Looking forward to the discussion.**



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Annex

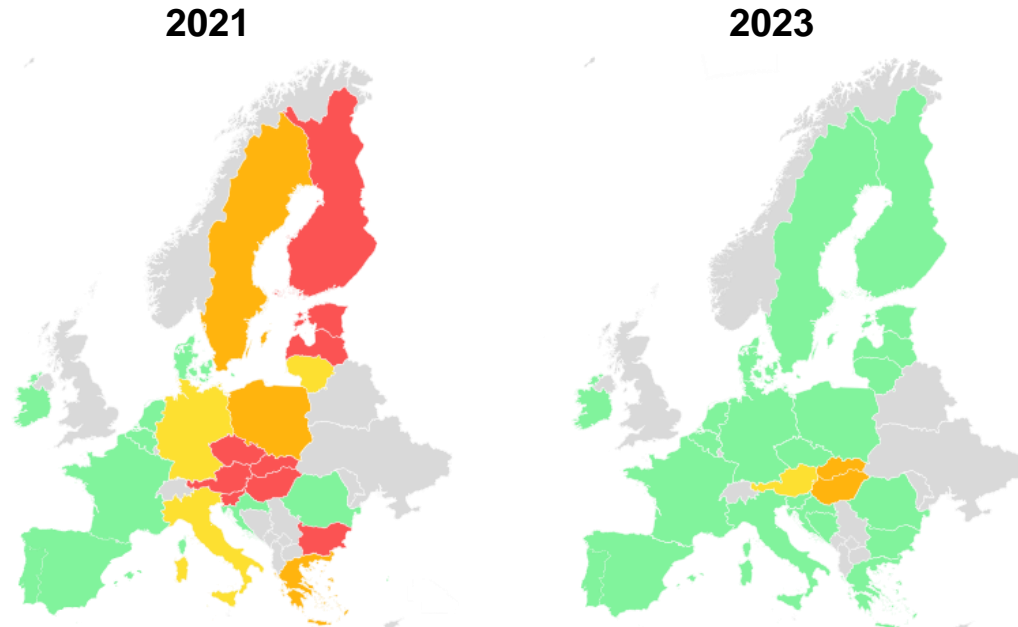


- **Supporting the integration of energy markets in the EU** (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.
- **Contributing to efficient trans-European energy infrastructure**, ensuring alignment with EU priorities.
- Monitoring the well-functioning and transparency of energy markets, **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.

Back-up

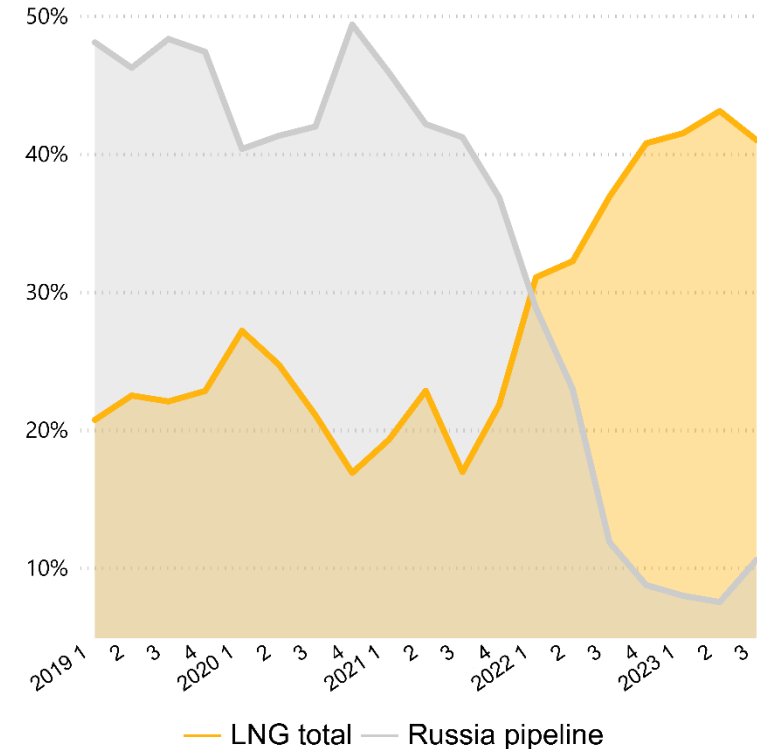
Contributors to improved gas supply-demand balance

Share of gas supply with Russian pipeline origin per MS (estimate), 2021 and Q3 2023 (%)



MSs share of gas supply with Russian origin: ■ 0-25% ■ 25-50% ■ 50-75% ■ 75-100%

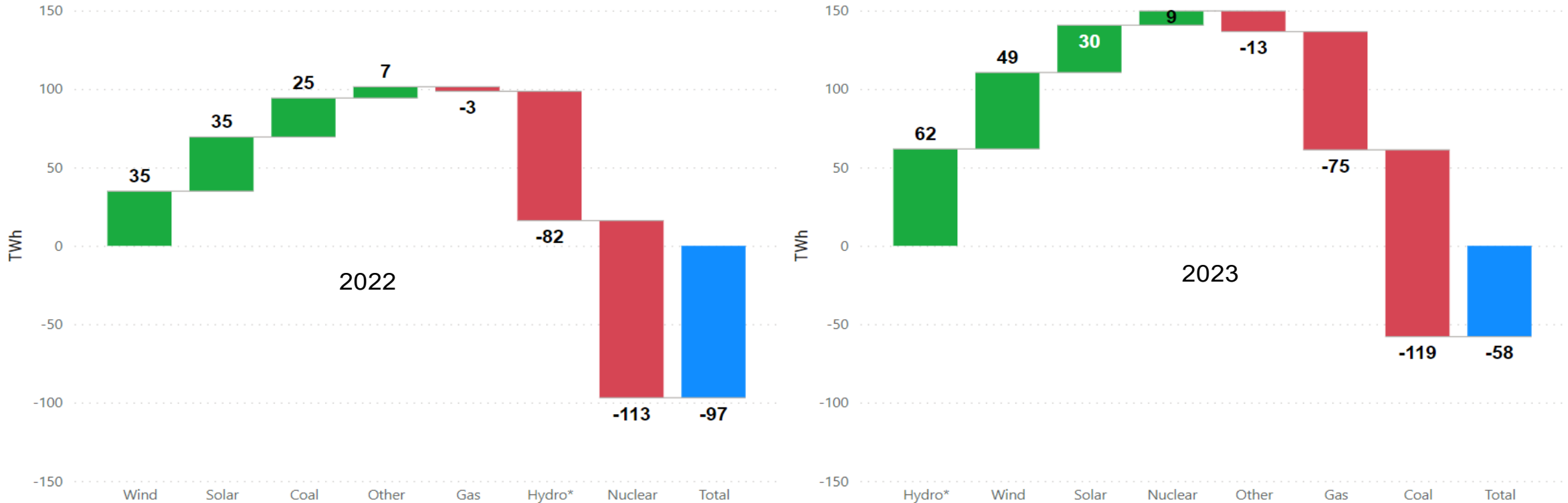
Share of EU gas imports per quarter - LNG and Russian pipeline imports (estimate): 2019 - Q3 2023 (%)



Russian (pipeline) supply drop has been largely offset by rising LNG imports to the EU and reduced gas demand. Yet, select Member States in South-East Europe where long-term contracts are maintained are still highly exposed to risks of full disruption of Russian supply.

Electricity saw more renewables and nuclear in 2023

Year-on-year change in electricity generation in 2022 and 2023 (TWh)



Renewable and nuclear power generation has risen in 2023 (for nuclear, from its historical low in 2022), whilst total EU power demand is expected to remain low. As a result, coal & gas fired generation sizeably dropped in 2023.

Emergency measures shielded end-consumers



Wholesale electricity prices peaked, but emergency measures mitigated the increase in retail prices.




Targeted measures: Less than a quarter (**23%**) of costs associated with emergency measures were targeted.



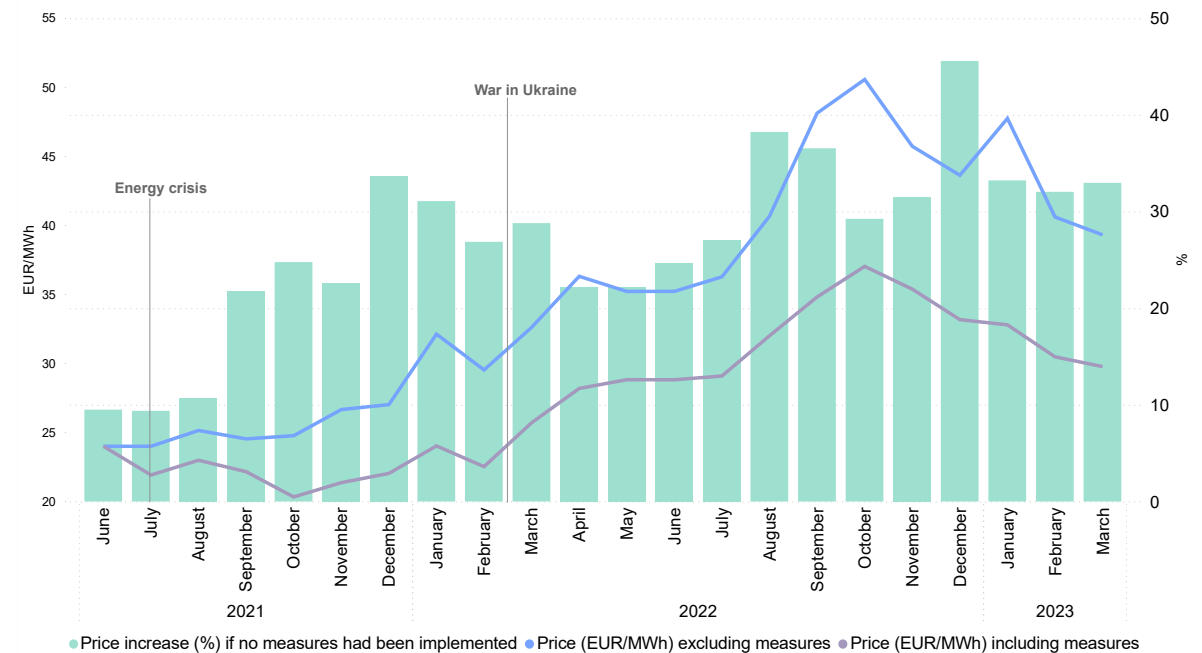
Attention needed going forward: Household electricity prices drop at a slower rate than the wholesale prices.

Every EU country adopted emergency measures to mitigate the energy crisis. In total, EU Member States spent up to

€ 646 BILLION 

on emergency measures in 2022, based on the Bruegel dataset.

Effect of emergency measures on retail prices – EU-27, June 2021 – April 2023 (% and EUR/MWh)



Reduction of retail prices was achieved, though at high costs.