



European Union Agency for the Cooperation
of Energy Regulators

Energy price developments in Europe: Drivers, outlook & policy considerations

Meeting of the Eurogroup

4 October 2021, Luxembourg

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- Energy price developments: Main factors & impact across Europe.
- A look at certain market behaviours.
- Outlook for the next six months. Winter season a key variable.
- Policy considerations:
 - Short-term.
 - Market design.
 - Broader transition pathways.



The screenshot shows the top portion of a Financial Times article. At the top, the 'FINANCIAL TIMES' logo is centered. Below it is a navigation bar with links for 'US', 'COMPANIES', 'TECH', 'MARKETS', 'CLIMATE', 'OPINION', 'WORK & CAREERS', 'LIFE & ARTS', and 'HOW TO SPEND IT'. A sub-header 'Climate Capital' is visible. Three article teasers are shown: 'Surging gas prices likely to reverse course' with a photo of a field, 'Politicians need to be more active when it comes to greenflation', and 'Green transition: Austrians offered all nationwide public transport for €3 a day' with a photo of people. The main article is titled 'EU energy' with a '+ Add to myFT' button. The headline reads 'High energy prices for industry occupy officials at EU summit'. The byline is 'Joshua Chaffin in Brussels' and the date is 'MAY 21 2013', with the date circled in red. To the right are icons for comments and printing. The first sentence of the article is: 'The portion of Wednesday's EU summit that will be devoted to energy policy could be boiled down to a single, eye-popping chart that has been making the'.

Strong global demand for LNG. Tight supply.

COMPARISON OF INTERNATIONAL GAS PRICES VS EU LNG IMPORTS: 2017 – 2021

JKM LNG benchmark hits record high on global gas supply tightness, winter demand

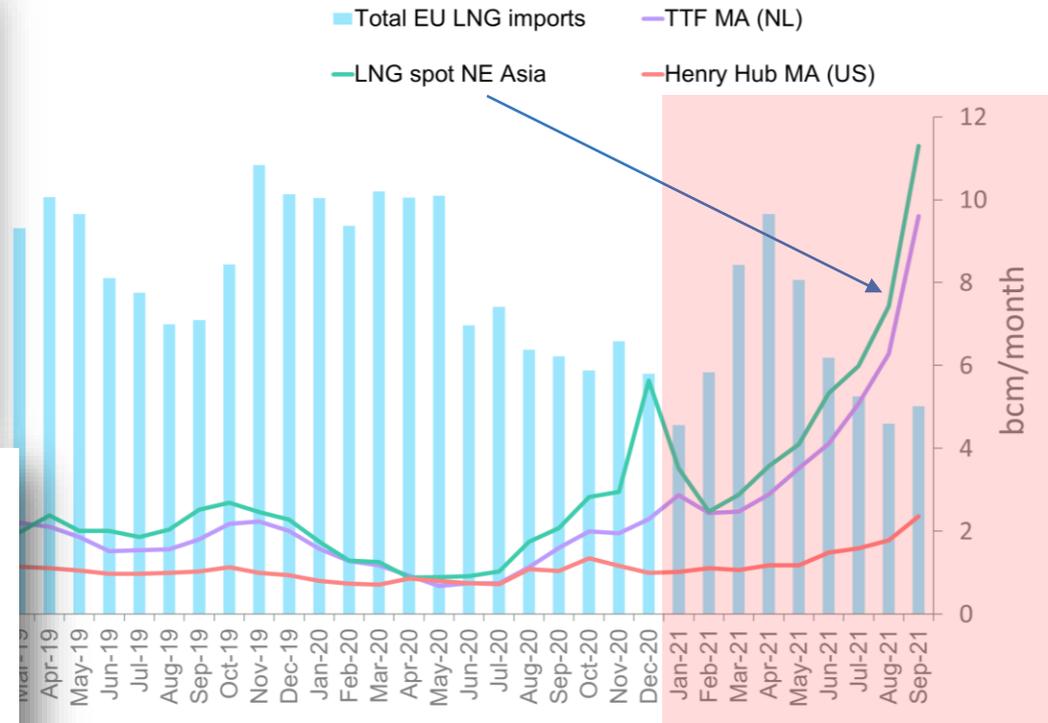
- JKM supported by European gas prices, portfolio optimization
- Lower winter temperatures forecast in China, South Korea
- Power shortages in China creating anxiety over LNG inventories

Spot Asia-Pacific LNG prices hit a record high on Sept. 30. on persistent supply constraints in global gas markets and strong winter restocking demand among Asian end-users.

Economy | Business and Economy | **Bloomberg**

The next shock in the pipeline for China's economy: energy crunch

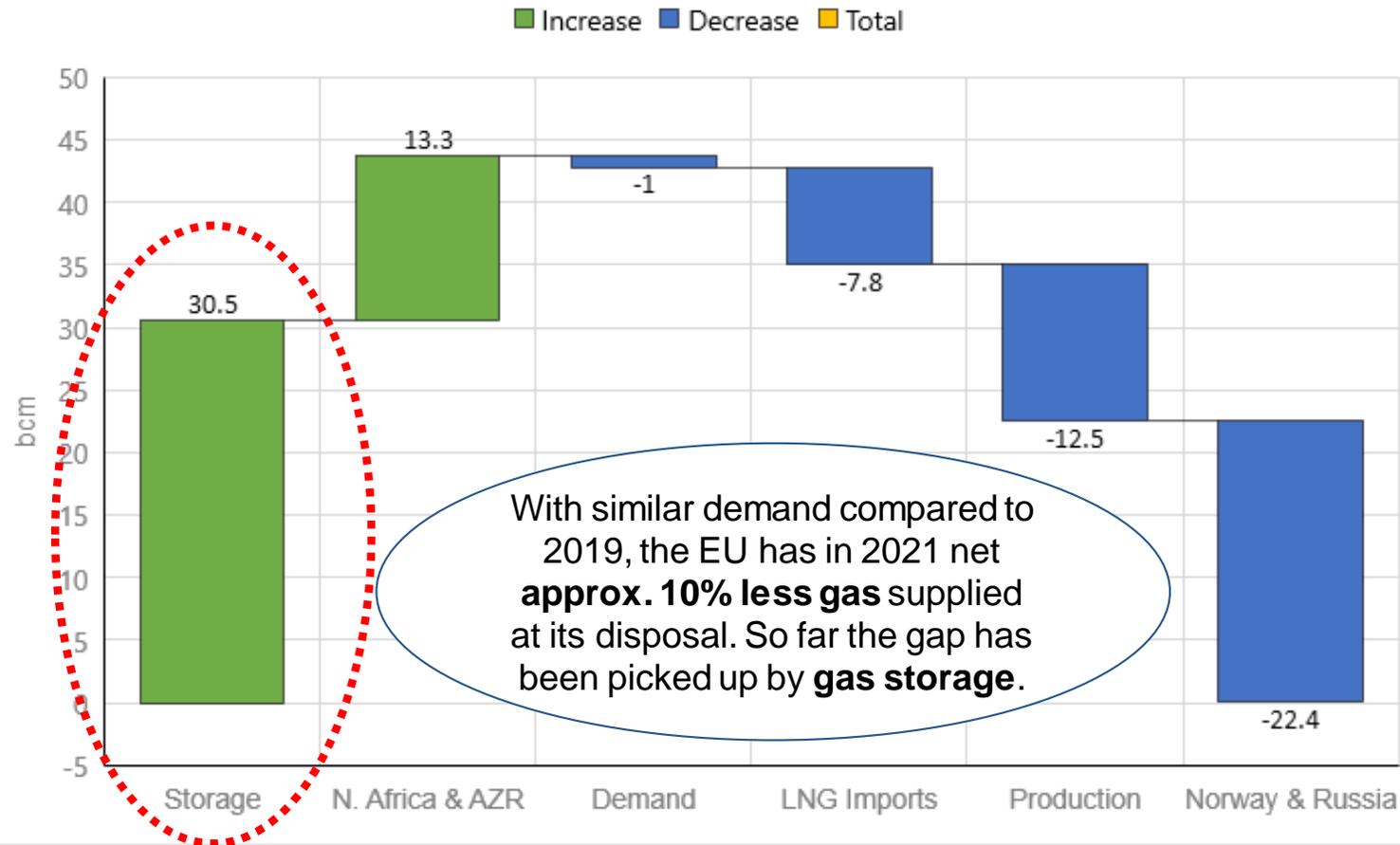
As China cracks down on energy use, it could lead to a shortage of everything from textiles to electronic components.



Global competition for LNG supplies leading to less LNG arrivals in the EU (the global 'swing market' for LNG).

Contributing factors for the EU specifically.

CHANGE IN SUPPLY TO THE EU MARKET: 2019 vs 2021 in bcm

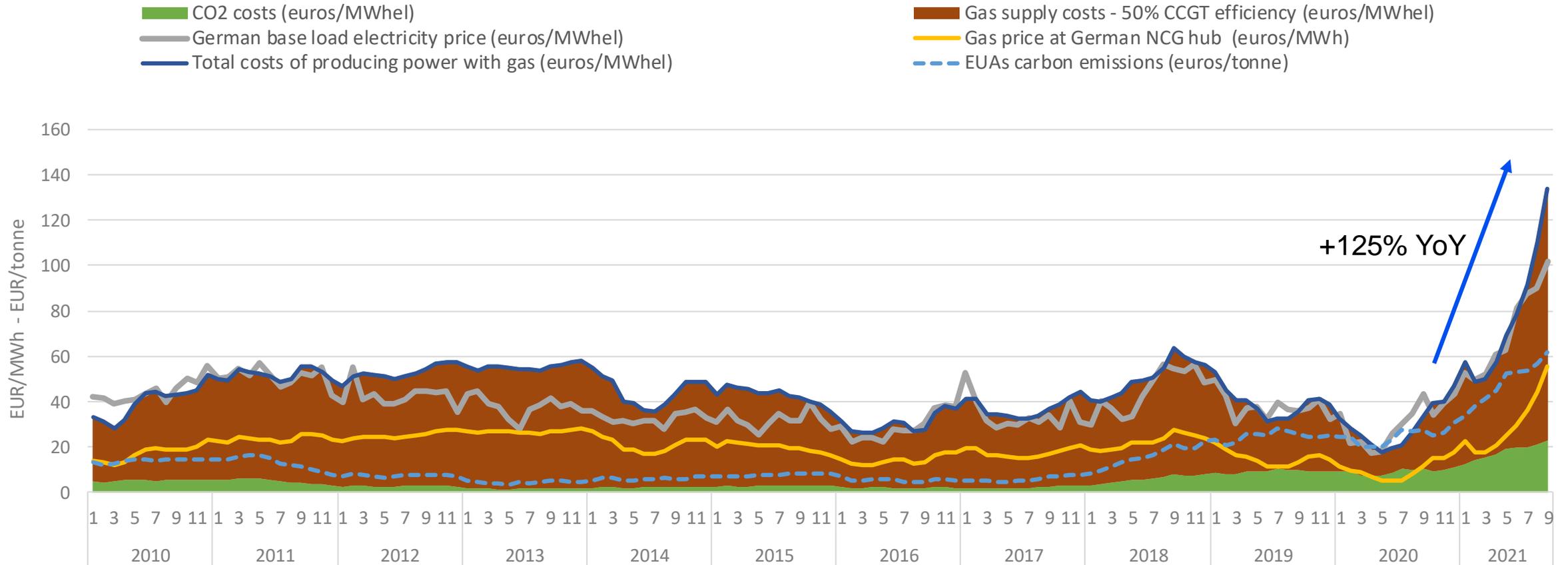


ADDITIONAL FACTORS:

- Coal and carbon price increase
- Weather (e.g. hot summer)
- Lower renewable generation (wind, hydro)
- Steady pipeline supply affected by maintenance and lessening investment in new production

Power prices significantly impacted.

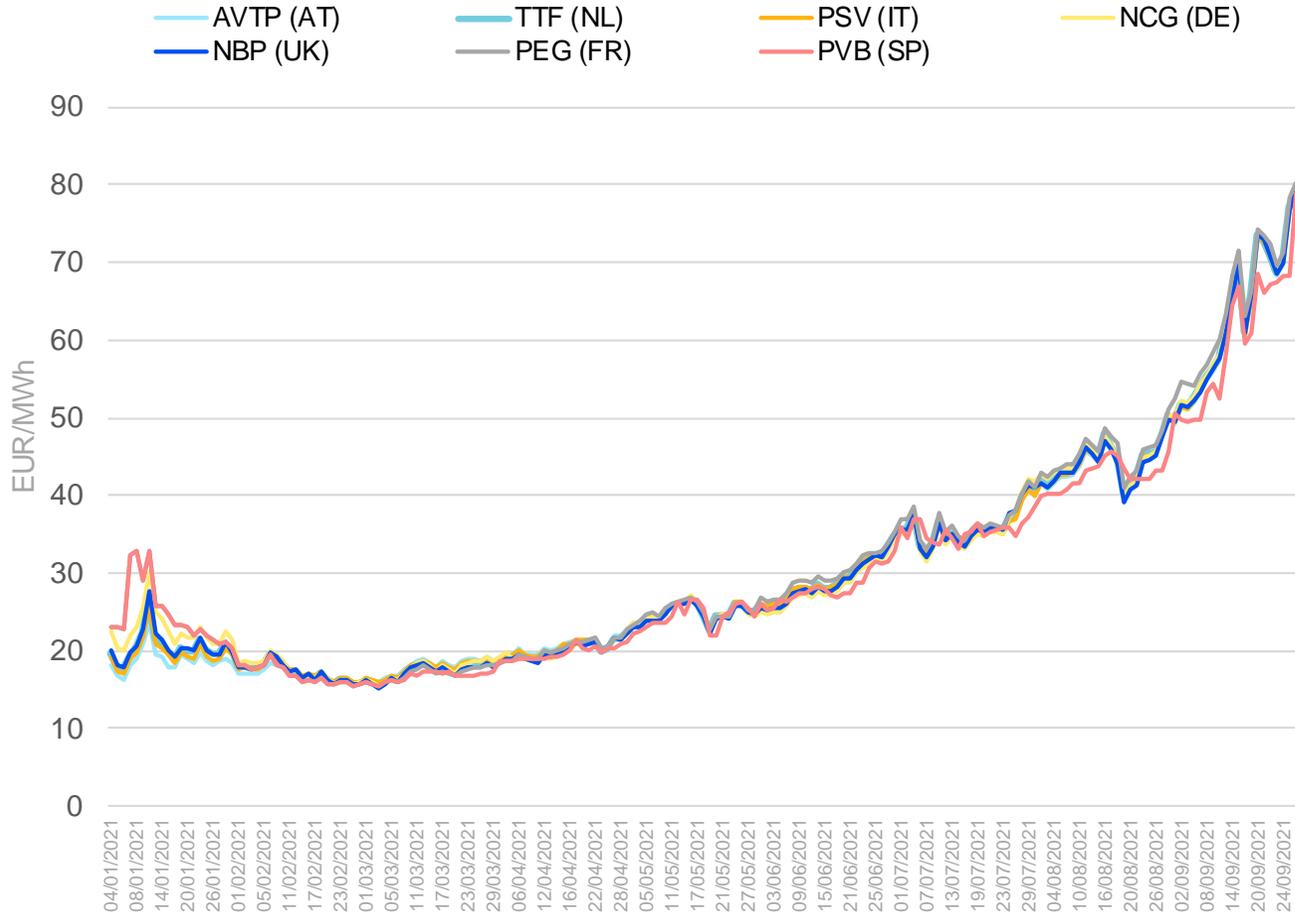
EVOLUTION OF GERMAN BASE LOAD ELECTRICITY PRICE VS GAS-FIRED POWER GENERATION COSTS: 2010 – 2021, EUR/MWh



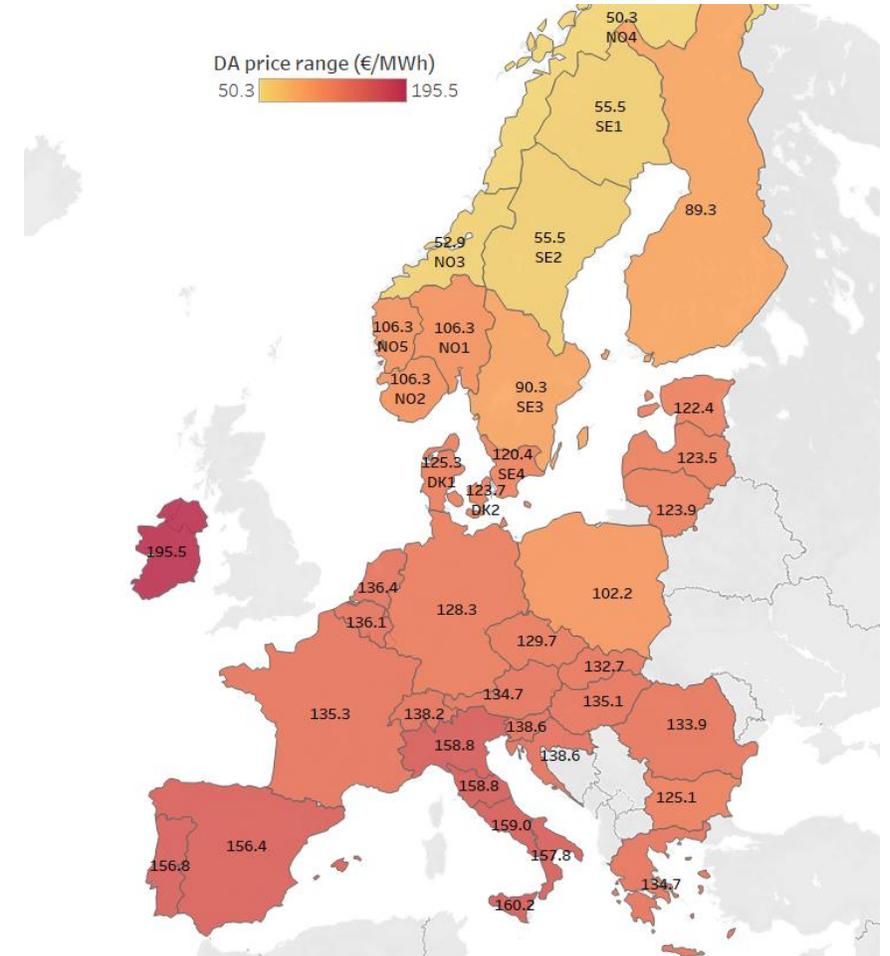
Source: ACER calculation based on ICIS Heren data

Impacts more uniform for gas than for power.

**GAS FRONT MONTH CONTRACTS
 FROM JUNE TO SEPTEMBER 2021**



**AVERAGE ELECTRICITY PRICES IN SEPTEMBER 2021 –
 BIDDING ZONES IN EUROPE, EUR/MWH**



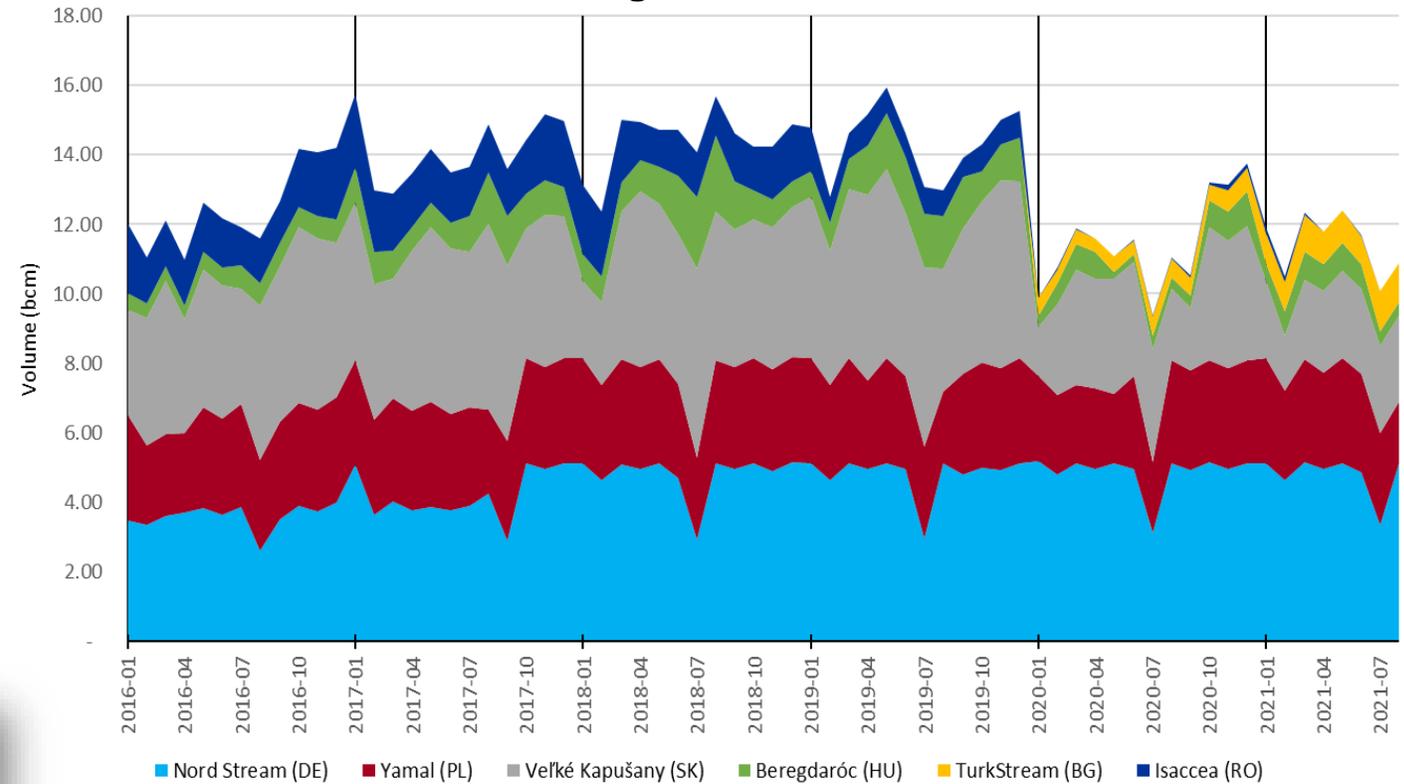
Source: Reuters and ACER calculation (for gas); ACER calculation based on ENTSO-E (for electricity).

A look at certain market behaviours.



Given the global price drivers, it is unlikely that any specific market trading behaviour would be responsible for current record prices. ACER's market surveillance efforts under REMIT, alongside those of national regulators, have so far not revealed systematic manipulative behaviour or insider trading. Surveillance is ongoing.

**COMPARISON OF EU NATURAL GAS IMPORT FROM RUSSIAN ORIGIN:
2016 – August 2021, bcm/month**

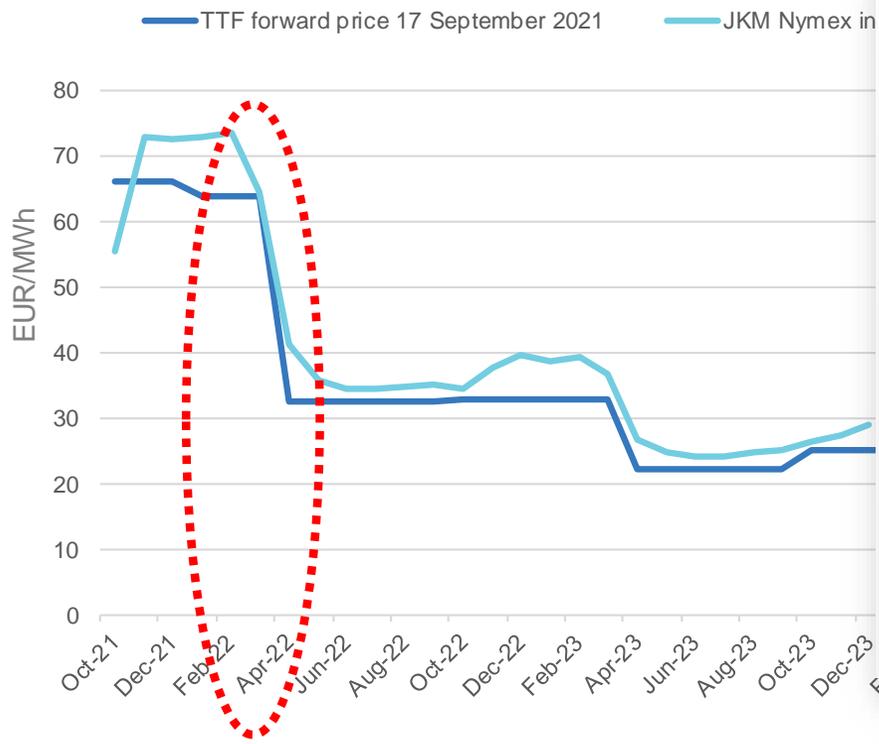


Pipeline imports have kept steady, not responding to surging demand. Certain physical constraints in/for Russia. Discussions on possible tactical considerations.

Tight market conditions expected to relax in spring.

GAS

TTF AND JKM FORWARD CURVE 17 SEPTEMBER 2021

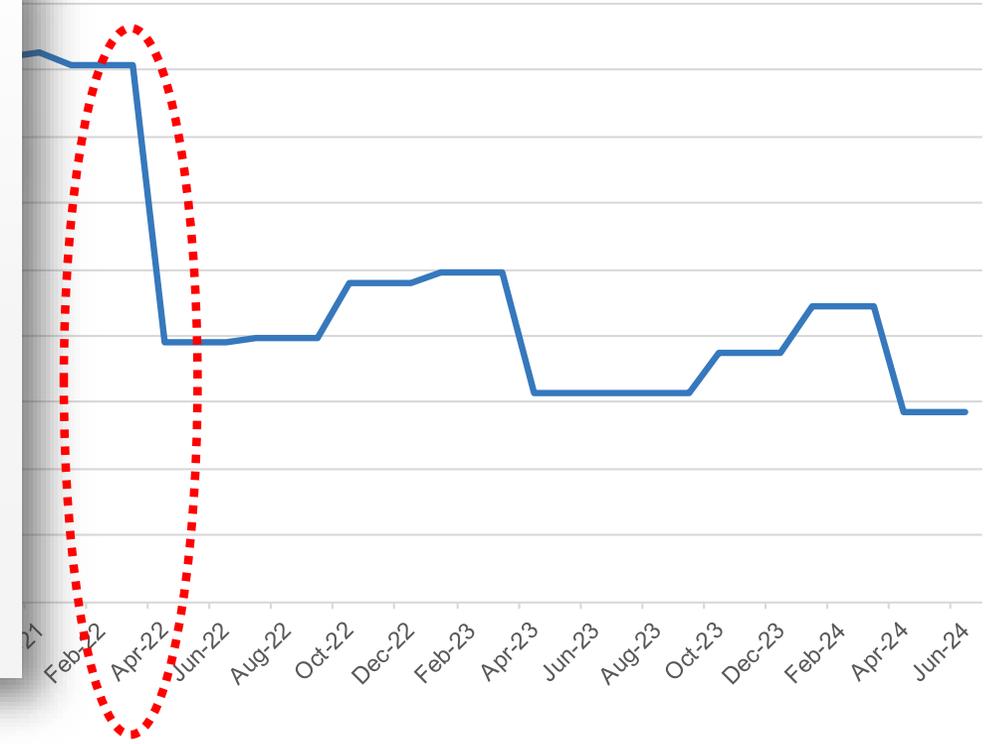


DRIVEN BY:

- Global LNG supply constraints easing up
- Increasing Russian flows (possibly via Nord Stream 2)
- Expected demand decrease
- Larger renewable energy production

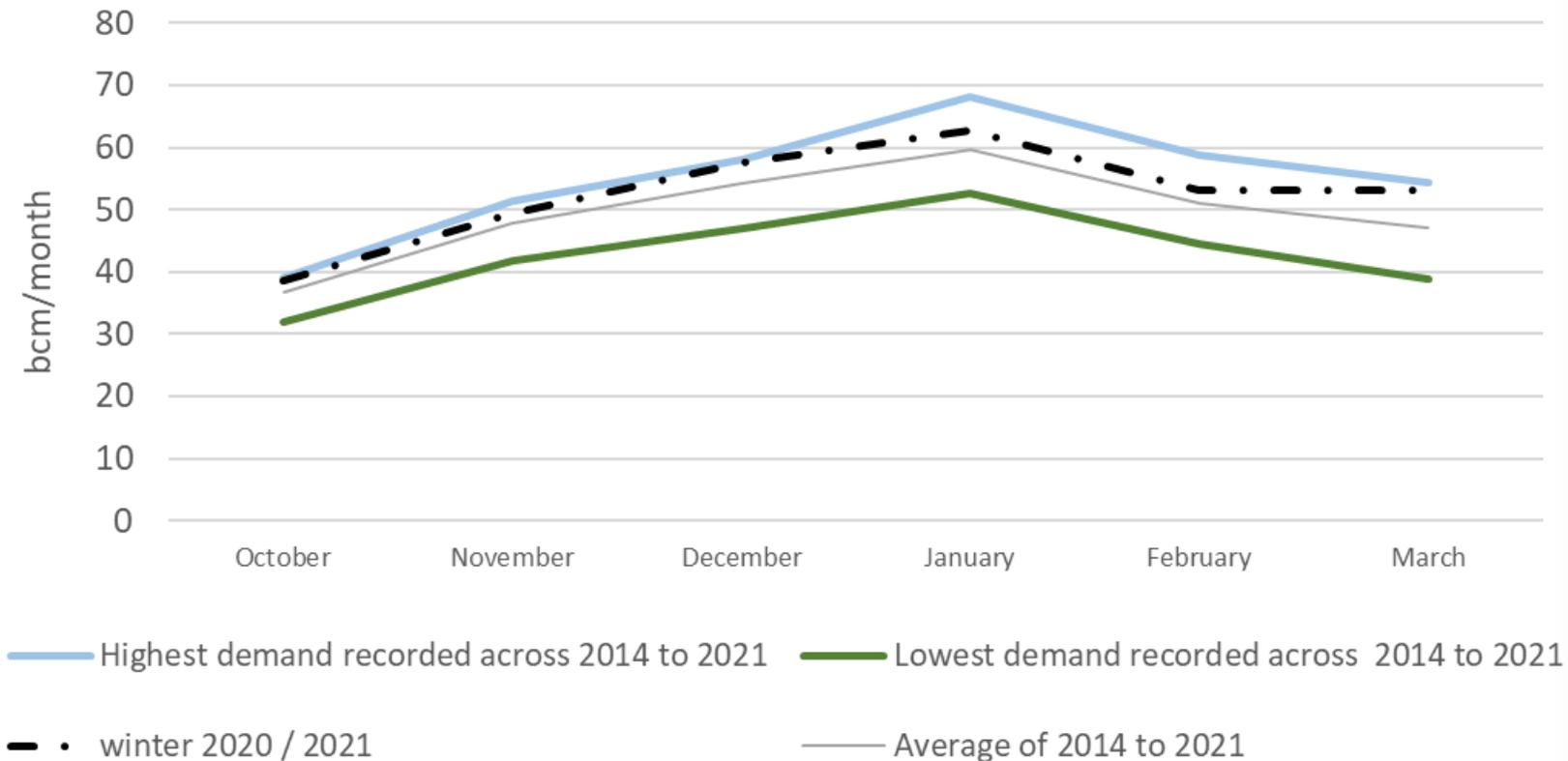
ELECTRICITY

EEX PHELIX FUTURE CURVE 17 SEPTEMBER 2021



Winter season a key variable for gas demand.

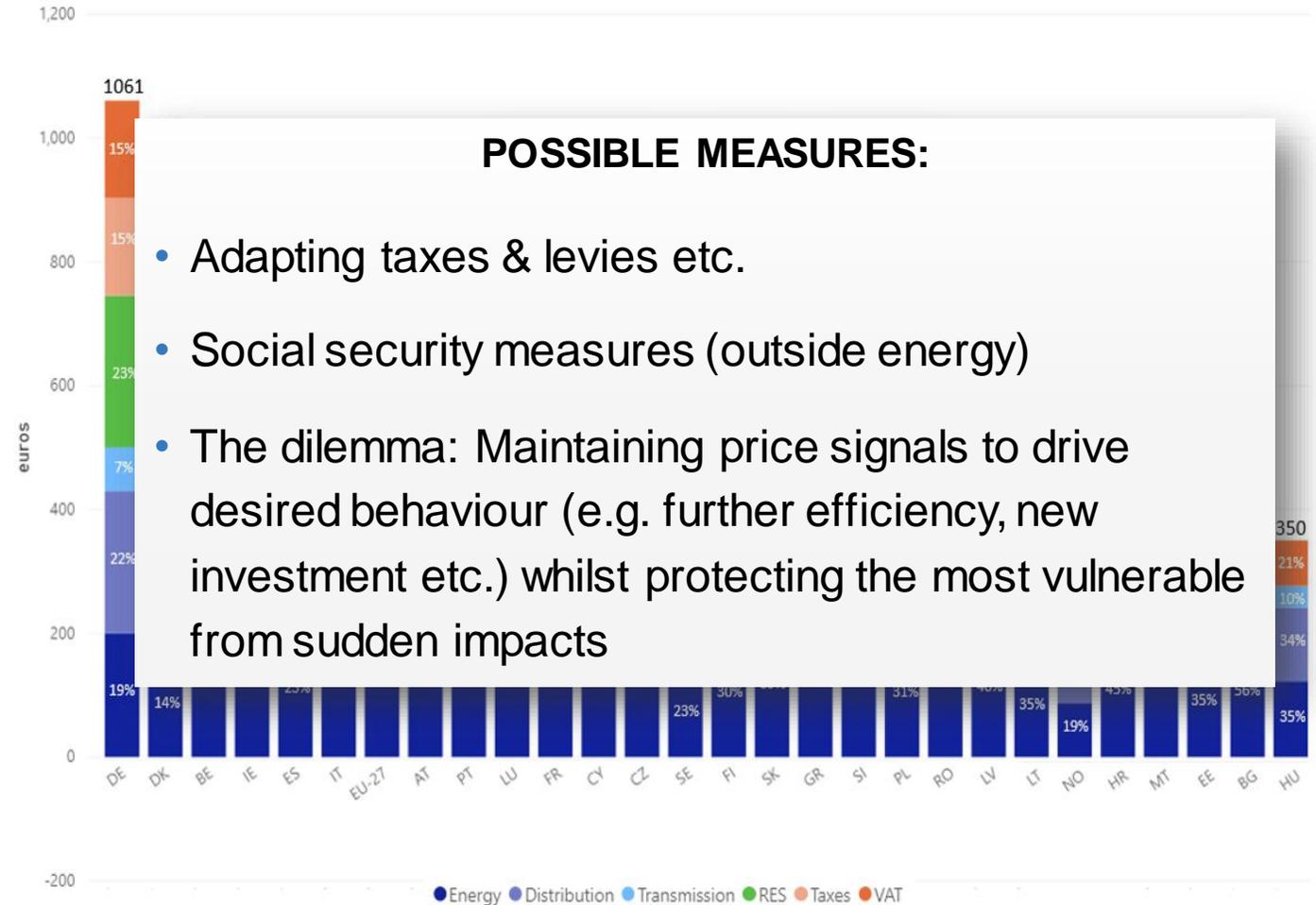
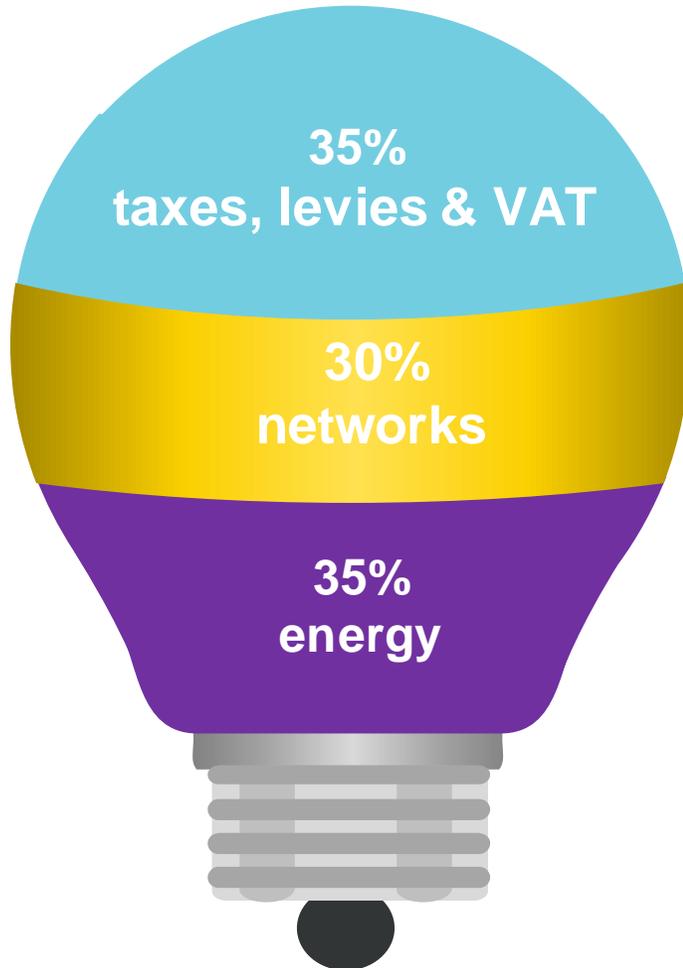
COMPARISON OF HIGHEST TO LOWEST MONTHLY EU (+UK) CONSUMPTION IN WINTER SEASON: 2014 to 2021, bcm/month



- Winter accounts on average for 65% of yearly demand. Weather is the most decisive factor.
- In winter 2020 / 2021, demand was 17 bcm higher than in previous 7 years (+7%):
 - Underground storages were depleted by 65% in order to deliver 75 bcm.
 - Today stocks are at 75%, with 86 bcm.
- The 'worst scenario'* would entail extra 15 bcm of demand in winter 2021 / 2022. The 'best scenario'* would require 45 bcm less.
- If LNG and pipeline imports do not increase, current storage stocks are *tight* to face a similar winter, and *short* to face the 'worst scenario'.

*Notional scenarios compare highest and lowest monthly consumption in 7 years average vs winter 2020 / 2021 demand

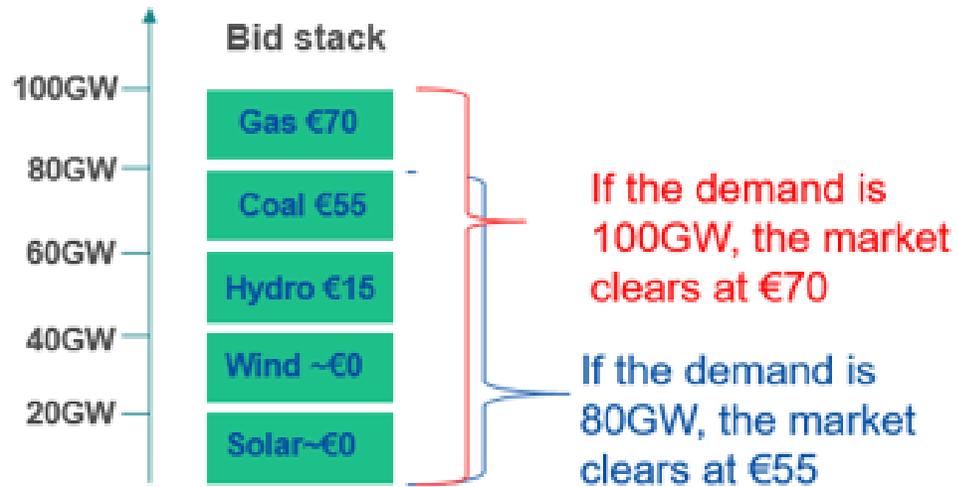
AVERAGE ELECTRICITY BILL BREAKDOWN



Policy considerations (2/3): Market design.

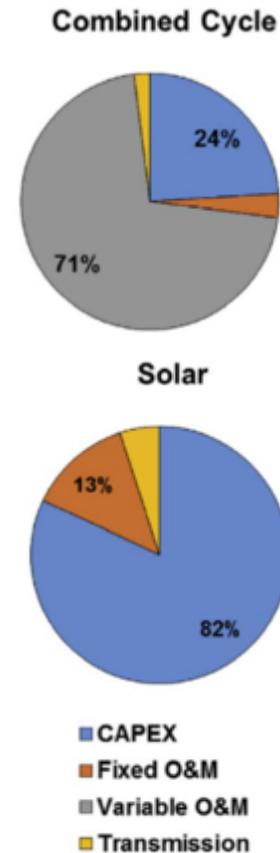
PRICE SETTING MECHANISM

Marginal Pricing: Pay-as-clear



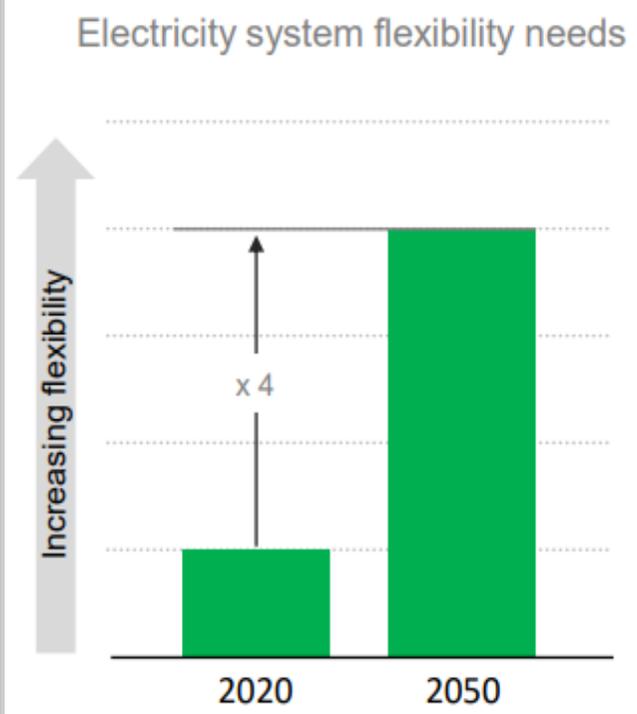
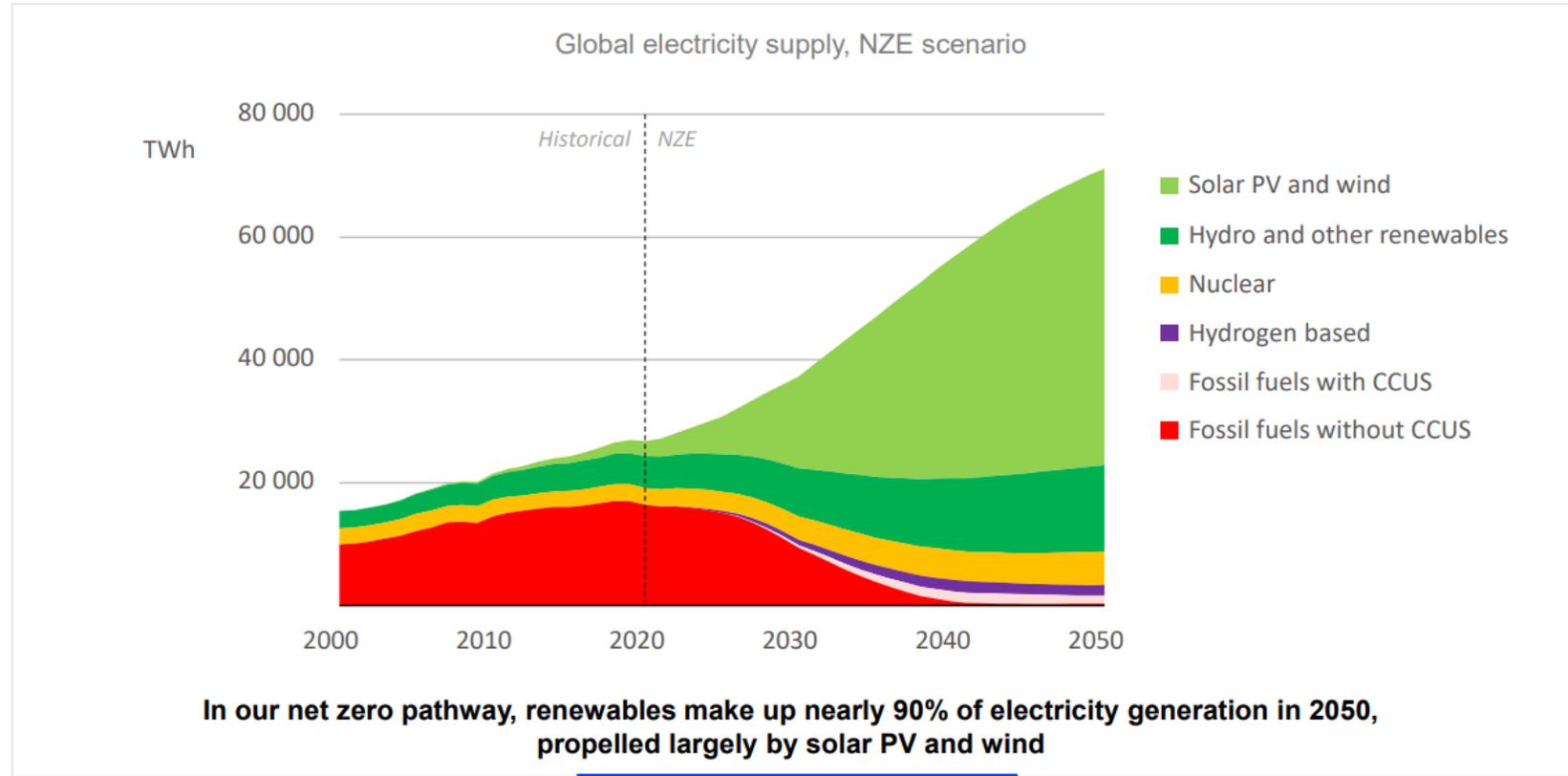
Producers bid true costs and get the market clearing price.

RENEWABLES MORE CAPEX HEAVY

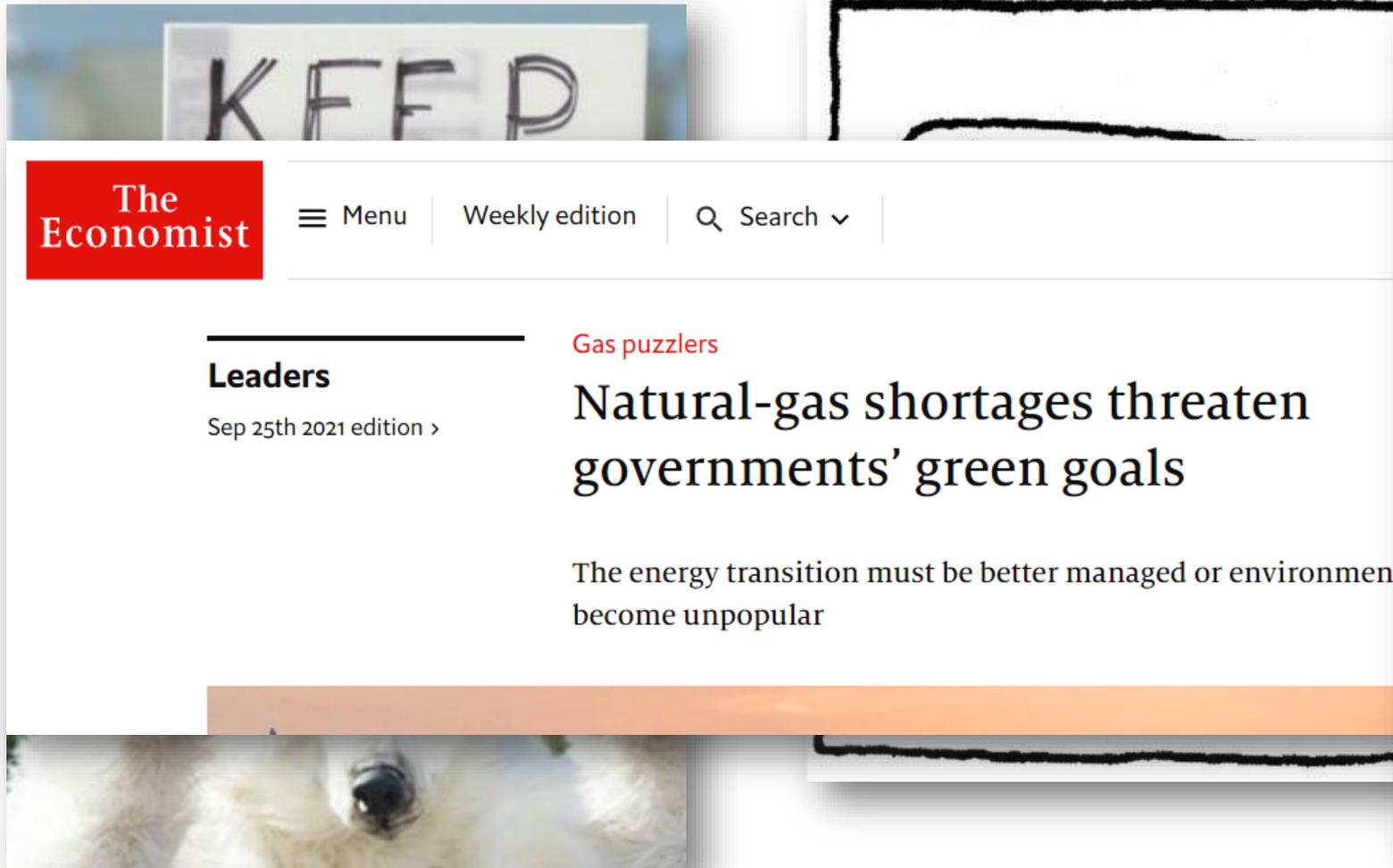


Hence the need for significant market revenue 'above' marginal operating costs.

Electricity leads the way to net zero



Volatility is here to stay. The ‘new business model’.



- Focus on supply *and* on demand
- Short-term *and* longer-term
- Affordability = acceptability. At the same time, cost-reflective pricing is needed to drive behaviour (e.g. greater efficiency) and incentivise new investment
- Role of government and regulatory supervision and monitoring likely to increase



- Global gas (LNG) supply/demand dynamics key factor impacting energy prices. CO2 allowances, weather etc. play secondary roles.
- Impacts all of Europe. Differences in power prices.
- Market surveillance efforts are ongoing.
- Next six months a bearer of high prices. Winter a key variable. Storage likely to prove key.
- Policy considerations are significant. Short-term vs. longer-term. Managed / orderly transitions becomes 'the way to go'.

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

*Follow-up questions or comments are also welcome via
director@acer.europa.eu*



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BACK-UP SLIDES



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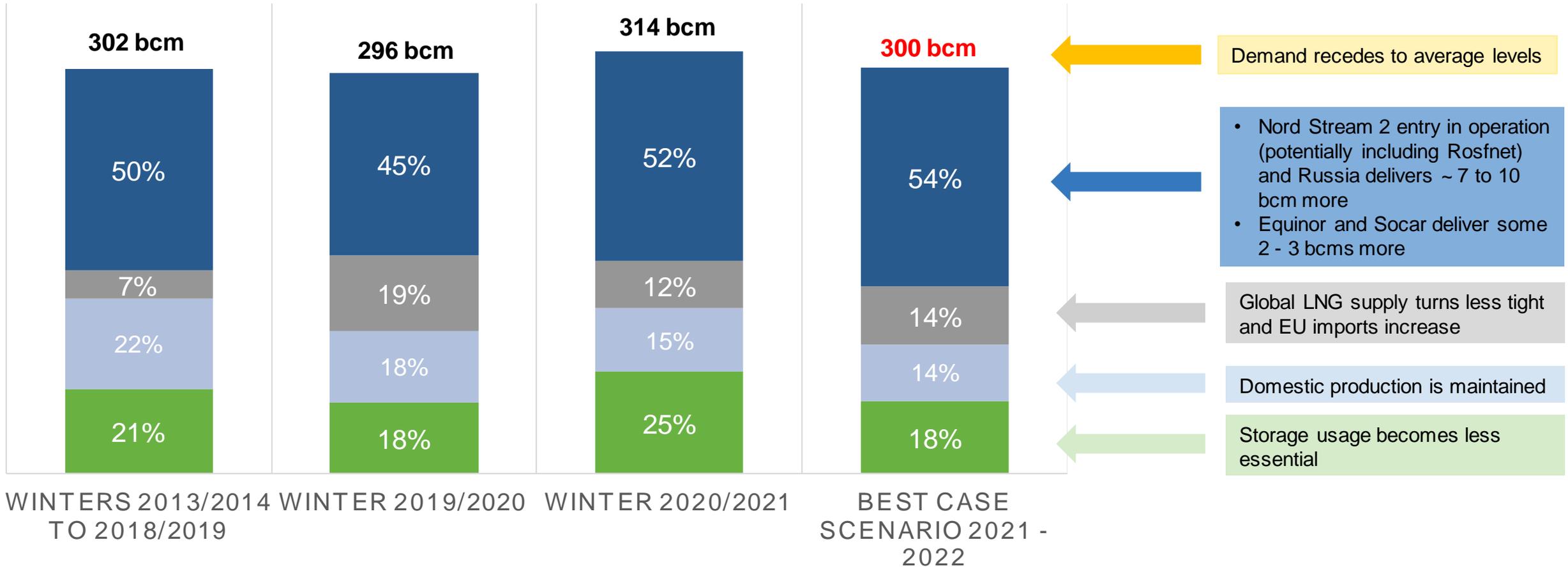
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- **Supporting the integration of energy markets in the EU** (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.
- **Contributing to efficient trans-European energy infrastructure**, ensuring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

An optimistic scenario for winter. Mitigating factors.

■ Winter UGS withdrawals
■ Winter LNG send-outs
■ Winter domestic production
■ Winter pipeline imports



EVOLUTION OF CO2 PRICES 2010 TO 2021 - (EUR/ton CO2)

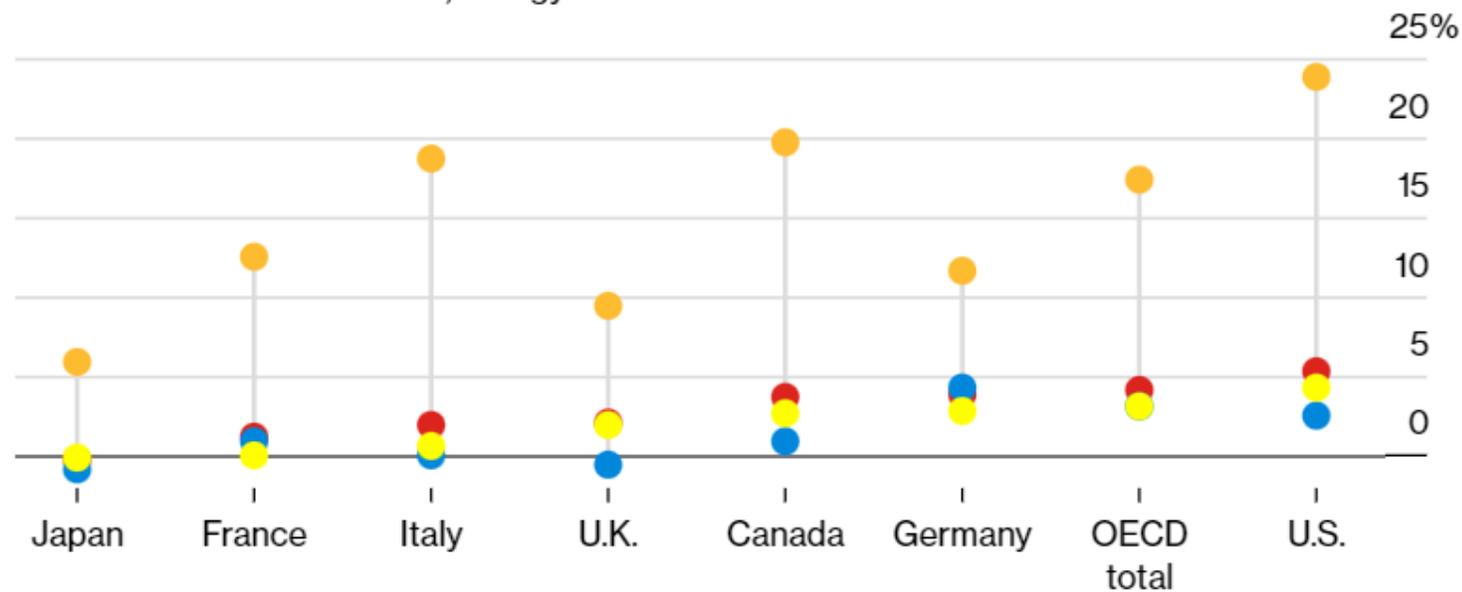


CONSUMERS PRICE CHANGES YOY – JULY 2021

Price Pressure

Energy inflation is soaring across G-7 economies

- July consumer-price change (YoY)
- Food inflation
- Energy inflation
- Inflation rate without food, energy



- The rise in final consumer bills has been uneven so far per different price formulas and type of contract.
- Price rises of up to 40% have occurred or are expected to occur in multiple Member States.

- “While the internal market has often been considered as an instrument to keep prices for consumers in check and set efficient investment signals for investors, it has become clear in recent years that it is **also of key importance for delivering on the EU's ambitious climate targets. ...**”
- “The integration of 27 national energy systems into one EU-wide market is crucial for efficient decarbonisation, as it will **allow renewable energy to be traded across borders, benefiting from diversity and complementarity** of the generation potential in the different EU regions. ...”
- “Crossborder markets can **save significant CO2 emissions from fossil backup generation** which would be necessary in fragmented national energy systems. Well-connected markets **also improve security of supply ...**”

Feature	Why is a competitive, integrated EU energy market important?
<p>➔ Sequential markets: from long-term to closer-to-real-time markets</p>	<p>Covering market participant's needs (hedging needs, integrate renewables ...)</p>
<p>➔ Based on bidding zones (BZs): normally a BZ being a country (though with exceptions)</p>	<p>Efficiently manage the network</p>
<p>➔ Based on marginal pricing: price set by the last supply unit needed to meet demand</p>	<p>Lower-carbon. Flexible. Transparent: recover fixed costs, incentivise new investments, including low-carbon technologies and demand side response; reveal true costs.</p>
<p>➔ Integrated via market coupling: coordinated process to set market prices across Europe</p>	<p>Optimise the use of resources across the EU</p>

➤ Measures aiming at **changing the pricing methods**, e.g. pay-as-bid instead of marginal pricing may risk leading to inefficient dispatch, higher costs and less incentives for new, lower-carbon and cost-efficient technologies

Feature

Variety of traded products: standardised products of **different duration** traded at hubs

Based on national market areas (hubs): different products traded at each market area; typically a **market area/hub being a country**.

Continuous trading: continuous trading of all the distinct products occurs **constantly throughout the trading day**.

Eased market accessing: high levels of **price convergence** have been reached among hubs. Hub price differentials hover around transportation costs

Why is a competitive, integrated EU energy market important?

To use the **transportation network** more efficiently; the duration of capacity products is **adjusted** to the **duration of the products** traded at hubs

To facilitate the **mid-term price hedging of supply at hubs** and outside bilateral contracts as well as

To grant **flexibility** to build **procurement portfolios** and to enable **transparent price discovery**

To foster the **use of transportation capacity** following **economic signals**, what leads to **source gas at alike costs** across EU markets