EU energy market developments: Near-term outlook and focus areas

Recent developments in energy markets and their impact on the fiscal policy response in the euro area

Meeting of the Eurogroup on 13 February 2023 - Brussels

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• The glass half full: Recent energy market developments & main factors

• The glass half empty: Though far from ‘out of the woods’ yet …

• What to do about it: Implications for near-term focus & vigilance

• How about further ahead: Beyond the near-term, the recent past may provide a few lessons
Recent energy market developments & main factors
Wholesale price decrease after 2022 ‘rollercoaster’ ride

Electricity & natural gas price evolution, January 2021- February 2023 (Month Ahead, EUR/MWh)

- Better than expected demand-supply balance has driven energy prices further down in the last months.

Source: ACER based on Platts price data
Gas demand reductions have played a key role.

Mild winter weather has contributed to lower heating needs, next to overall demand reduction efforts. Highest contributions have come from industry. Household consumption has generally decreased. Power sector contributions vary.

Source: Bruegel European natural gas demand tracker
Supply alternatives to Russian gas coming strong

The drop in Russian pipeline supply continues to be offset by rising EU LNG imports and lower overall demand. As a result, gas storage outflows to meet demand so far are lower this winter.

Source: ACER calculation based ENTSOG TP; Timera
Gas storage ‘supply’ remains high this winter

Storage filling levels are above last years’ average and have contributed to driving prices down. Stocks are anticipated to finish above 50% by the end of winter 2022-2023.

Source: ACER based on GIE data and Platts’ estimates
Past ‘LNG receiving bottlenecks’ now improving

More LNG terminals coming online make for greater LNG import capacity. Quicker planning, permitting and building for what normally takes several years.

Source: Platts and Bruegel
EU power consumption fell by -3% year-on-year in 2022 (in contrast to -21% overall reduction of EU gas demand), with most of the drop occurring in winter. Renewable and nuclear power generation is anticipated to rise 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 is projected to sizeably drop this year.*
Providing (some) relief to retail prices

Representative household prices including and excluding support schemes in the EU, June 2021 – December 2022 (EUR/MWh)

Retail energy prices often fall more slowly than they rise. Several factors are at play, e.g. some suppliers incurring significant losses in 2022 seeing opportunity to recoup parts of those losses plus some consumers having signed fixed price contracts (meaning prices paid by those consumers will remain flat, at least for some time).

Source: IEA based on VaasaETT

Notes: The household price analysis focuses on general measures affecting typical consumers and selected capital cities which have applied such measures.
However, we are far from being ‘out of the woods’ yet …
Gas price expectations remain higher than pre-crisis

Although gas and power futures’ prices have substantially dropped in the last months, they remain almost three times above recent historical average.

Source: ACER based on ICE Endex and European Energy Exchange (EEX)

Note: EEX Power and TTF gas average prices are shown for comparison and are based on the front-month products traded in the period 2017-2021 (i.e., they are not future prices for delivery in 2023-2024).
Much hinges on demand reductions & weather impacts

Even though gas storages are expected to end the winter season relatively well-replenished, factors like rising gas demand due e.g. to cold weather or non-sustained demand reductions provide grounds for caution. (By way of example, Bruegel estimates a ‘base case’ need for 13% demand reduction, adding a 5–7 %-points ‘swing’ up or down per weather conditions).

Source: Bruegel, Preparing for the next winter, Europe’s gas outlook for 2023

Note: 3 scenarios considered. The baseline scenario assumes that Russian pipeline flows continue across Ukraine and Turkstream (‘UA/TS’). Scenario ‘TS’ assumes that Russian flows only continue across Turkstream. ‘NRPG’ assumes no Russian pipeline gas. EU countries agreed to reduce gas demand by 15% between 1 August 2022 and 31 March 2023, compared to the average of the previous five years.
Supply (global LNG) remains tight the next two years

The EU will compete for extra LNG volumes with Asia, which will see growing demand driven partly by overall economic growth, partly by lowering coal usage. Given market tightness, unexpected events, such as outages, can have outsized impacts, adding tension to global LNG supply and hence to EU gas prices.

With one particular ‘demand variable’ standing out

<table>
<thead>
<tr>
<th>Region</th>
<th>Change (TWh)</th>
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<tbody>
<tr>
<td>Other Europe</td>
<td>487</td>
</tr>
<tr>
<td>China</td>
<td>111</td>
</tr>
<tr>
<td>Brazil</td>
<td>-198</td>
</tr>
<tr>
<td>India</td>
<td>-70</td>
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<td>-49</td>
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<td>Other</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>227</td>
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China’s COVID-19 driven demand decline in LNG volumes was absorbed by Europe, while US LNG supply continues to grow. However, in 2023, in line with the expected increase in its economic growth, China’s LNG demand is expected to gradually rise, intensifying competition for overall LNG resources.

Source: Bruegel based on Bloomberg, Reuters 21 November 2022.
Implications for near-term focus & vigilance
Recent gas storage injection patterns hold lessons

Volatile value of gas impacting EU storage – 2019 - 2023 (bn euros)

EU successfully filled gas storages for the winter 2022/2023, but at a cost of approx. 100 billion, thus contributing to very high gas prices over the summer. Different instruments (e.g. Contracts for Differences) could be considered to reduce price volatility and/or the risk of unattractive seasonal price spreads. Similarly, more gradual replenishment trajectories, adding cost-sensitive incentives, could be considered.

Congestion revenues per country in 2022* (EUR)

Congestion revenues have increased drastically to EUR 4 billion in 2022 (compared to EUR 55 million in 2021). Germany and the Netherlands have the most congested entries, while Belgium and France have the most congested exits.

Source: ACER based on GSA, PRISMA and RBP - gas transportation cong. revenues calculation is based on auction time (in 2022), not on delivery time (i.e. includes prod. for delivery after 2022)

Note: *Mem. States & third count. with cong. reven. exceeding EUR 10 MM during auctions held in 2022. (Swiss cong. reven. for transit Wallbach-Passo Gries, estimated at EUR 245 MM, but not depicted.)
Demand ‘reduction’ vs demand ‘destruction’?

- Industrial energy consumption has decreased significantly in 2022.
- Despite this, overall manufacturing output is above past years average.
- However, output differs by sector, presumably a function of substitution and/or enhanced efficiency options.
- Generally, manufacturing relying on gas as feedstock (as opposed to fuel) has fewer substitution options.

Source: Bruegel based on Eurostat. Note: Index 100 = 2015
For the first time in the EU, wind and solar generation produced more electricity in 2022 than gas. New solar capacity additions - a particularly low-lead time generation source - doubled in 2022 compared to the year before.
To date ~EUR 600 billion+ have been spent on support measures in the EU. If support measures are retained, experience offers lessons e.g. for further targeting such measures plus retaining incentives to lower demand.

Beyond the near-term, the recent past may provide a few lessons
One-sided focus on the supply-side holds risks

Source: IEA's World Energy Outlook, October 2022 (emphasis added)

- “… The uncertainties around long-term fossil fuel demand and supply-side fossil fuel investments mean that demand-side responses are now more important than ever …”

- “… The speed at which fossil fuel infrastructure can safely be retired depends crucially on the speed at which clean energy technologies are deployed and fossil fuel demand declines …”

Focusing on supply-side restrictive measures as opposed to (also) focusing on demand-side measures may bring strong upward pressure on prices. Also, targets do not constitute results.
Volatility is here to stay: A problem or a call to action?

Diverging views on how to tackle price volatility

‘Volatility needs to be avoided’ (e.g. new pricing rules)

vs

‘Volatility needs to be managed’

What are the tools to tackle price volatility in ACER’s view?

- Preserve price signals: today’s volatility triggers tomorrow’s flexibility (technologies)
- Strengthened EU market integration
- Improved forward markets
- Consumer protection remains key
- Longer-term contracting may play a role (if done well, avoiding distortive effects)

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

Source: ACER based on NEMOs simulations (from ACER’s Final Assessment of the EU Wholesale Electricity Market Design, April 2022)
Making cross-border electricity capacity available for trade (per also the so-called ‘70% target’) is vitally important for many Member States. This also includes Member States that are predominant electricity exporters over the year.

* Covers all months for 2021 and January – September for 2022
Note: Without MT, CY, IE
The EU holds advantages; will they be leveraged?

“... whilst increased energy independence vis-à-vis (particular) third-countries is a policy objective of growing importance, realising this may well depend on enhanced energy inter-dependence amongst EU Member States.”

Further strengthening a ‘shared resources’ model across the EU requires investment; in infrastructure, rules, institutions and governance. Importantly, it also requires political investment in the ‘comfort levels’ of being more (inter-)dependent on other Member States for one’s energy needs.

Source: ACER’s Final Assessment of the EU Wholesale Electricity Market Design, April 2022
Thank you for your attention. Looking forward to the discussion.
• **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, **deterring 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.
ACER and ESMA published the two preliminary reports on 23 January with indicators to continue monitoring market developments and detect potential impacts and risks of the MCM.

**ACER MCM Preliminary Data Report: Key findings**

1. **Executive Summary**
   - “The effects of the Regulation seem to remain limited.” No significant impacts can be unequivocally and directly attributed to the adoption of the MCM.”
   - “It cannot be concluded that the MCM has played a relevant role in reducing EU gas prices. The lower prices seem driven by fundamental supply and demand factors.”
   - “Gas supply has remained reasonably stable following the adoption of the MCM Regulation and security of supply has been well ensured.”
   - “The MCM Regulation has not prompted a discernible shift in trading activity.”

2. **Gas price developments**
   - Observed results and market effects related to price developments
   - Potential market effects and risks related to price developments

3. **Gas flow developments**
   - Observed results and market effects related to flow developments
   - Potential market effects and risks related to flow developments

4. **Gas trading developments**
   - Observed results and market effects related to trading developments
   - Potential market effects and risks related to trading developments

New gas flows hit by ‘transportation bottlenecks’

Natural gas flow changes – first half of 2021 vs first half of 2022

The flow shift resulted in infrastructure congestion at North-West LNG terminals and at the gas pipelines flowing gas in West to East direction. In turn, this has moved hub spreads above historical averages.

Source: Bruegel policy brief: “A grand bargain to steer through the European Union’s energy crisis”, September 2022
‘Energy redistribution’ may still be relevant

Given the risks of further supply shocks and/or sudden price spikes in the next couple of years, it may still be relevant to have measures in place redistributing unusually high revenue earned in the electricity market. Recent experience provides lessons on opportunities and drawbacks of different options available.

Source: European Commission factsheet (emergency intervention package proposal of 14 September 2022)
One-sided focus on the supply-side holds risks (2/2)

Oil prices rise in a net zero emissions scenario driven by supply policies vs. decline when driven by demand policies (US dollars a barrel)

Counterfactuals for oil and gas capital expenditure

Focusing on supply-side restrictive measures as opposed to (also) focusing on demand-side measures may bring strong upward pressure on prices. Also, targets do not constitute results.

Source: IMF World Economic Outlook, April 2022
Long term market design, meaning what exactly

Electricity market diagnostics

- Far term market is almost non-existent (without state support)
- Near term market struggles in many areas (lack of market integration)
- Short term market works fairly well (yet improvements are still needed and planned)
Judging from experience, implementation takes time

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<th>Examples</th>
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<td><strong>The Clean Energy Package</strong></td>
<td><strong>CACM Regulation</strong></td>
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| Legislative process | 11/2016 - 12/2020* | 2012 – 08/2015 |

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<td>Minimum capacity targets: 01/2026</td>
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<th>Establishing new governance &amp; entities</th>
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<td>approx. 3 - 6 years</td>
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* Note: Includes transposition into national law