Current EU energy market situation & insights from the ACER-CEER Market Monitoring Report

The European Parliament’s ITRE Committee
28 November 2022 - Brussels

Christian Zinglersen, ACER Director
• The current EU energy market situation
  • Brief overview of recent market developments
  • The next year(s) will likely prove challenging
  • Current gas flows reveal congestion. What to target?
  • Near-term vigilance remains relevant

• A few words on reform of the EU’s wholesale electricity market

• ACER’s draft Programming Document 2023-2025
Brief overview of recent market developments
Gas and electricity supply challenges drive prices up

Electricity & natural gas price evolution, 2021-2022 (Month Ahead)

Source: ACER calculation based on Platts price data
In turn, impacting record high retail prices

Notwithstanding various government interventions, final retail prices saw steep increase.

Average EU electricity and gas prices for median* EU household consumer

Notwithstanding various government interventions, final retail prices saw steep increase.

*Median is the value separating the higher half from the lower half of a data sample, a population, or a probability distribution.

Source: VaasaETT
By way of example, gas expenditure of households significantly increased (more than 10% in 9 countries). Electricity expenditure accounts for more than 5% of household income in 9 countries.
The next year(s) will likely prove challenging
Current gas storage ‘success’ has come with a price

After significantly higher injections than in 2021, EU gas storages are currently 95% full but reportedly at eight times historical costs (est. 50 billion euros).

Source: GIE (storage status as of 20 November 2022), Reuters
Notes: (1) EU 27; (2) compared with average imports in corresponding months between 2019 and 2021
A season of ‘ifs’: security of supply for next winter

Scenario for winter 2022-2023 - EU + UK - bcm/winter

Scenario for winter 2023-2024 - EU + UK - bcm/winter

If gas storages are fully depleted during winter 2022/2023 and/or not sufficiently replenished in summer 2023 Europe might face demand curtailments in winter 2023/2024. Factors like rising gas demand (due to cold weather, unmet demand reduction targets), fully halted Russian supplies, and larger volumes of LNG diverted to Asia are of concern.

Source: Estimates; ACER based on Timera and ENTSOG

* Stocks cannot be fully depleted by end-winter for operational reasons
LNG capacity remains tight in the coming years

The EU will compete for extra volumes with Asia which will see growing demand, partly for overall economic growth, partly for lowering coal usage.

Source: IEA Gas Quarterly Report Q2 2022
With one particular ‘demand variable’ standing out

Year-over-year change in LNG imports (Jan-Aug), million tonnes

- China’s COVID-driven demand decline in LNG volumes is currently being absorbed by Europe while US LNG supply continues to grow.
- This raises questions as to when China’s LNG demand may turn back towards normal growth rates.

Source: Shell interpretation of Kpler and customs data. Article is from Reuters, 21 November 2022.
Gas prices have decreased to the post-invasion price average in the second half of October due to healthy LNG supply, mild autumn weather, high renewable electricity generation and gas storage fullness.

Source: ACER based on ICIS Heren price data
... but price expectations for coming years remain high

Evolution of gas (TTF) forward prices comparing the contractual outlook (October 2021 - November 2022)

Source: ACER calculation based on ICE
Current gas flows reveal congestion. What to target?
Natural gas flow changes – first half of 2021 vs first half of 2022

Source: Bruegel policy brief: “A grand bargain to steer through the European Union’s energy crisis”, September 2022
Price differences between hubs remain elevated

Price differences reflect that relevant volumes do not reach higher-priced regions where gas is most in demand. Prices could converge if relevant bottlenecks are addressed.

Source: ACER calculation based on ICIS Heren price data
Revealing supply bottlenecks in the EU gas system

Flow congestion is the highest between BELUX and West-Germany

<table>
<thead>
<tr>
<th>Flow Direction</th>
<th>Interconnection Point</th>
<th>Utilisation ratio 2016-2021 (%)</th>
<th>Utilisation ratio Jan-Aug 2022 (%)</th>
<th>Utilisation ratio Sep 2022 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PL to DE</td>
<td>Yamal</td>
<td>71%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>2 RU to DE</td>
<td>North Stream 1</td>
<td>90%</td>
<td>45%</td>
<td>0%</td>
</tr>
<tr>
<td>3 UA to SK</td>
<td>Velke Kapusany</td>
<td>63%</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td>4 BE to DE</td>
<td>VIP Belgium</td>
<td>12%</td>
<td>82%</td>
<td>100%</td>
</tr>
<tr>
<td>5 NL to DE</td>
<td>VIP-TTF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 UK to BE</td>
<td>IUK-Zeebrugge IZT</td>
<td>27%</td>
<td>69%</td>
<td>96%</td>
</tr>
<tr>
<td>7 AT to IT</td>
<td>Arnoldstein / Tarvisio</td>
<td>67%</td>
<td>36%</td>
<td>13%</td>
</tr>
<tr>
<td>8 ES to FR</td>
<td>VIP PIRINEOS</td>
<td>2%</td>
<td>34%</td>
<td>4%</td>
</tr>
<tr>
<td>9 NO to DE</td>
<td>Europipe(s)</td>
<td>68%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>10 DZ to IT</td>
<td>Mazara del Vallo</td>
<td>37%</td>
<td>57%</td>
<td>65%</td>
</tr>
</tbody>
</table>

*Note: Utilisation ratio computed for April-August 2022 due to data unavailability

Investments are focusing on expanding LNG import capacities and on removing interconnectors’ congestion.

Source: ACER based on GIE and ENTSOG data
What to target (per current demand destruction)?

By mid-October demand has fallen by an estimated 10% year-to-date, with dissimilar contributions per sector.

Source: ACER based on ENTSOG and Bruegel data
* For select Member States September data is not yet available
What to target (per electricity supply & demand mismatch)?

Year on year change in EU-27 electricity generation by fuel type – January to October 2022 - TWh

- Favourable solar conditions over much of Europe. Despite low wind output over the summer, overall high wind yields in 2022 (compared to unusually low wind output in 2021).
- Coal increase per gas-to-coal switching. Production impacted by fuel supply logistics (e.g. Rhine) and plant closures.
- Lower availability of nuclear plants for technical and drought related reasons.
- Drought impacting overall hydro production.

Source: ACER calculation based on ENTSO-E data
Near-term vigilance remains relevant
Member States rely heavily on each other for energy flows

To optimise electricity usage and production, Member States rely on neighbouring countries to alleviate network congestion & generation scarcity.

Average flows over other Member States' grid for within-Member State trades

Restrictions to exports (‘do not count on me’) may lead to a contagious effect. Cross-border capacity for electricity trade should be increased rather than reduced during an energy crisis.

If all Member States ‘play it safe’, no Member State is likely to be ‘safe’.

France, one of the biggest EU exporters of power over the last years, became a significant net importer in 2022*

* By way of perspective, the ‘export-to-import’ swing of France of 56TWh is similar to the total demand of Belgium during the considered period.
Interdependence often cuts both ways

Making cross-border electricity capacity available for trade (per also the so-called ‘70% target’) will be 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

Even structural exporters tend to benefit from a significant number of hours of electricity imports.
REMIT: Countering market manipulation risk

![Graph showing the increase in market manipulation risk over the years from 2015 to 09/2022. The x-axis represents the years, and the y-axis represents the number of records per year and per day in millions. The graph shows a significant increase in the number of records over time.]
A few words on reform of the EU’s wholesale electricity market
Long-term markets & investment signals prove key

Today’s forward electricity markets exhibit limited liquidity (especially beyond 3 years ahead), hampering the hedging of, and thus the development of, (CAPEX-heavy) low-carbon technologies.

“… In some Member States, the revenues obtained by some generators are already capped by way of State measures such as … two-way contracts for difference. These generators do not benefit from increased revenues resulting from the recent spike of electricity prices. Therefore, existing producers subject to that type of State measure … should be excluded from the application of the cap …”
A spectrum of reform options to consider

Change the pricing method
• Pay-as-bid
• Price capping
• Bidding capping

Develop regulated insurance mechanisms
• Insurance for consumers and producers: e.g. two-sided (cap and floor) options, reliability options, support to PPAs …
• Insurance for consumers: e.g. affordability options

Reform structurally short-term markets
• Splitting of merit order per generation type

Integration of long-term (hedging) markets
• Integrating forward markets (e.g. regional trading hubs + transmission rights)
• Supporting liquidity

Further integration of short-term markets
• Demand-side response
• Balancing market integration
• Scarcity pricing
• Locational price signals (nodal, local)

In the current high price setting, many proposals aim at strong investment signals for new-build; more (cost-based) average pricing; less price volatility; thereby also tackling the impact e.g. of gas generation prices on consumers.
Key questions to be posed towards such options

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option ....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability?</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Security of supply &amp; facilitates cross-border flows?</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Energy transition compliant?</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Signals for needed demand response?</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Investment signals (incl. for CAPEX-intensive technologies)?</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Implementation time?</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td></td>
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</tbody>
</table>
Closing with ACER’s draft Programming Document 2023-2025
BACKGROUND / REQUIREMENTS

Energy systems undergoing massive change
Unprecedented high energy prices
Changes in the regulatory landscape
ACER plays an increasing role
Resources to increase but nevertheless remain limited per the numerous tasks

CHALLENGES

Implementing Electricity and Gas Network Codes and Guidelines and monitoring their effects
Increasing the transparency of wholesale energy markets and promoting their integrity under REMIT
Contributing to the EU's energy infrastructure challenge under the TEN-E regulation
Contributing to safeguard the security of gas supply
Contributing, from a regulatory perspective, to the EU's energy crisis response policy work, decarbonisation goals and the EU Green Deal
Implementing the Clean Energy for All Europeans Package
Engaging on the future gas market design and decarbonisation of Europe
Engaging stakeholders for greater impact, communicating strategically and via modern tools
(Re)deploying financial and human resources to meet future challenges

STRATEGIC GOALS

Contribute to the completion of the internal Energy Market and the monitoring of its functioning
Contribute to the Infrastructure and Security of Supply Challenges
Increased integrity and transparency of wholesale energy markets
Contribute to address longer-term regulatory challenges
Thank you for your attention. Looking forward to the discussion.
Annex
ACER: Role & governance

• 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.
Ongoing assistance to vulnerable consumers

To date EUR 500 bn+ spent on support measures for consumers.

Source: ACER-CEER Market Monitoring Report (Retail and Consumer Protection volume); Bruegel
TSOs assess higher adequacy risks for this winter

• TSOs assessed higher adequacy risk and overall lower margins compared to recent winter periods.

• TSOs can mitigate the identified risks by e.g. increasing cross border transmission capacity.

• Main risk factors:
  - Nordics: hydro levels & nuclear availability.
  - France: nuclear availability.
  - Ireland: availability of aging power plants.
  - Malta & Cyprus: isolated systems.

Source: ENTSO-E’s Winter Outlook 2022-2023 early insights, 20 October 2022
Electricity market integration: some progress, more remains

Whilst available cross-border capacity is used more efficiently than in the past ...

% of EFFICIENT USE OF INTERCONNECTORS IN 2021 ...

- **DAY AHEAD**: 88% in 2021, 12% in 2020
- **INTRADAY**: 66% in 2021, 34% in 2020
- **BALANCING**: 49% in 2020, 51% in 2021

... there is, however, NO clear trend suggesting a relevant overall increase in cross-border capacity being made available.

...% of REMAINING GAINS

- **€ 1 billion** from finalising the integration of short-term electricity markets.
- **€ 300 billion** from keeping market integration at pace, including coordinated security of supply and increased cross-border capacity.
Whether to cap gas prices or not …

- How would the mechanism look like in practice (e.g. what is in scope)?
- What about more exact implementation (e.g. TTF traded but delivery outside of EU)?
- Could a cap impact security of supply (e.g. by exacerbating scarcity)?
- Might a cap affect liquidity (e.g. day ahead trade moving to forward markets)?
- Could it invite gas suppliers not to supply to the EU? If so, are some more ‘at risk’ than others?
- Could trade move to the Over-the-Counter (OTC) market?
- Might there be additional litigation risks for existing contracts (whether linked to TTF or not)?
- Might this impact investments?