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

Meeting of the Eurogroup
4 October 2021, Luxembourg

Christian Zinglersen, ACER Director
• 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.
Sign of the times? Not quite.
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.

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).

Source: Reuters and ACER calculation. Articles from Bloomberg and Platts.
CONTRIBUTING FACTORS FOR THE EU SPECIFICALLY:

- 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

With similar demand compared to 2019, the EU has in 2021 net approx. 10% less gas supplied at its disposal. So far the gap has been picked up by gas storage.

Source: Reuters and ACER calculation
Power prices significantly impacted.

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

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

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

Source: ACER calculation based on ENTSOG data. REMIT stands for ‘Regulation on Wholesale Energy Market Integrity and Transparency’; for further information, see ACER website at [LINK].
Tight market conditions expected to relax in spring.

**GAS**

TTF AND JKM FORWARD CURVE 17 SEPTEMBER 2021

**ELECTRICITY**

EEX PHELIX FUTURE 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

Source: Platts, Reuters, ACER calculation (Platts forwards price assessments are on monthly granularity only for the next three months)
Winter season a key variable for gas demand.

- 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
Policy considerations (1/3): Short-term relief.

AVERAGE ELECTRICITY BILL BREAKDOWN

35% taxes, levies & VAT

30% networks

35% energy

POSSIBLE MEASURES:

• Adapting taxes & levies etc.

• Social security measures (outside energy)

• The dilemma: Maintaining price signals to drive desired behaviour (e.g. further efficiency, new investment etc.) whilst protecting the most vulnerable from sudden impacts

Source: Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) (May 2021)
Policy considerations (2/3): Market design.

**PRICE SETTING MECHANISM**

Marginal Pricing: Pay-as-clear

- **Bid stack**
  - 100GW: Gas €70
  - 80GW: Coal €55
  - 60GW: Hydro €15
  - 40GW: Wind ~€0
  - 20GW: Solar ~€0

If the demand is 100GW, the market clears at €70

If the demand is 80GW, the market clears at €55

Producers bid true costs and get the market clearing price.

**RENEWABLES MORE CAPEX HEAVY**

Combined Cycle

- 24%
- 71%
- 13%
- 82%

Solar

- CAPEX
- Fixed O&M
- Variable O&M
- Transmission

Hence the need for significant market revenue ‘above’ marginal operating costs.
Policy considerations (2/3): Market design.

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


- Focus on supply and 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

Source: Leader in the Economist of 25 September 2021 (LINK).
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’.

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

Follow-up questions or comments are also welcome via
director@acer.europa.eu
BACK-UP SLIDES
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.
An optimistic scenario for winter. Mitigating factors.

- Demand recedes to average levels
- Nord Stream 2 entry in operation (potentially including Rosfnet) and Russia delivers ~7 to 10 bcm more
- Equinor and Socar deliver some 2-3 bcm more
- Global LNG supply turns less tight and EU imports increase
- Domestic production is maintained
- Storage usage becomes less essential

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<thead>
<tr>
<th>Winters 2013/2014 to 2018/2019</th>
<th>Winter UGS withdrawals</th>
<th>Winter LNG send-outs</th>
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<tbody>
<tr>
<td>302 bcm</td>
<td>50%</td>
<td>7% 22% 21%</td>
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<th>Winter 2019/2020</th>
<th>Winter domestic production</th>
<th>Winter LNG send-outs</th>
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<tr>
<td>296 bcm</td>
<td>45%</td>
<td>19% 18% 18%</td>
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<th>Winter 2020/2021</th>
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<td>314 bcm</td>
<td>52%</td>
<td>12% 15% 25%</td>
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<th>Best Case Scenario 2021-2022</th>
<th>Winter domestic production</th>
<th>Winter LNG send-outs</th>
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<tr>
<td>300 bcm</td>
<td>54%</td>
<td>14% 14% 18%</td>
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CO2 prices on the increase.

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

Source: Platts
Energy prices & inflation risk.

CONSUMERS PRICE CHANGES YOY – JULY 2021

Price Pressure
Energy inflation is soaring across G-7 economies

- 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.

Source: OECD
Europe’s power market integration.

- “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** …”

Source: The European Commission’s State of the Energy Union report of 14 October 2020 (annex on progress report on the internal energy market), COM(2020) 950 final. [LINK](#).
## Feature

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<th>Feature</th>
<th>Why is a competitive, integrated EU energy market important?</th>
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<td><strong>Sequential markets</strong>: from long-term to closer-to real-time markets</td>
<td><strong>Covering market participant’s needs</strong> (hedging needs, integrate renewables …)</td>
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<td><strong>Based on bidding zones (BZs)</strong>: normally a BZ being a country (though with exceptions)</td>
<td><strong>Efficiently manage the network</strong></td>
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<td><strong>Based on marginal pricing</strong>: price set by the last supply unit needed to meet demand</td>
<td><strong>Lower-carbon. Flexible. Transparent</strong>: recover fixed costs, incentivise new investments, including low-carbon technologies and demand side response; reveal true costs.</td>
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<td><strong>Integrated via market coupling</strong>: coordinated process to set market prices across Europe</td>
<td><strong>Optimise the use of resources across the EU</strong></td>
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> 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 | Why is a competitive, integrated EU energy market important?
---|---
**Variety of traded products**: standardised products of different duration traded at hubs | To use the transportation network more efficiently; the duration of capacity products is adjusted to the duration of the products traded at hubs.

**Based on national market areas (hubs)**: different products traded at each market area; typically a market area/hub being a country. | To facilitate the mid-term price hedging of supply at hubs and outside bilateral contracts as well as.

**Continuous trading**: continuous trading of all the distinct products occurs constantly throughout the trading day. | To grant flexibility to build procurement portfolios and to enable transparent price discovery.

**Eased market accessing**: high levels of price convergence have been reached among hubs. Hub price differentials hover around transportation costs | To foster the use of transportation capacity following economic signals, what leads to source gas at alike costs across EU markets.