European Gas Dialogue 2021

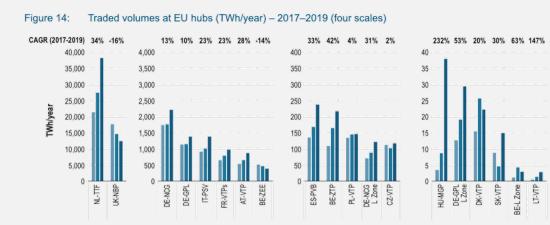
Gas Market Integration: How liquid are Europe's hubs?

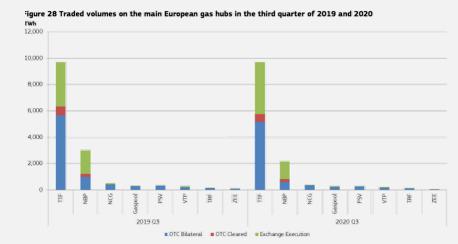
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Liquidity on EU hubs is still "good"

- Through many years liquidity continuously grew on EU hubs.
- 2020 the COVID-pandemic stopped this trend in the second half of the year.
 - Q3 2020 -8% (1,150 TWh) y-o-y.
 - All EU hubs, except TTF, saw decreases.
- Pipeline & LNG (-15% Q3 y-o-y) imports, consumption &, thus, traded volumes were falling.
- Importance of TTF (88% without NBP) % of exchange executed contracts grew (41%)
- This year liquidity will most likely grow again once economy recovers somewhat from the lockdowns



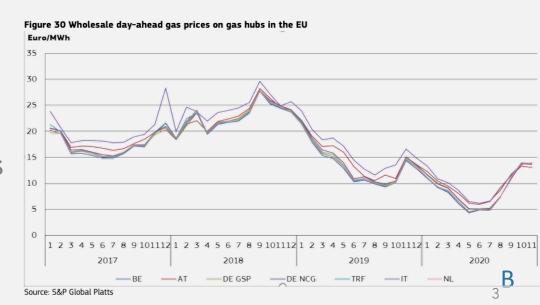


he chart covers the following trading hubs: Netherlands: TTF (Title Transfer Facility); Germany: NCG (NetConnect Germany) and Gaspool; France 'RF (Trading Region France); Italy: PSV (Punto di Scambio Virtuale); Austria: Virtual Trading Point (VTP); Belgium: Zeebrugge beach; UK: NBP (National Poliship Poliship Poliship)

Balancing Point)
Source: Trayport Euro Commodities Market Dynamics Report

Hub development is a goal of the regulatory framework

- The current EU gas regulatory framework, essentially the 3rd package & the respective NCs, target the opening of markets & increase of competition.
- The establishment of entry/exit zones & harmonisations at cross-border level improved possibilities of market participants.
 - The 'old' gas world, purely 'at the flange' is outdated.
- Developments since 2009 show that the 3rd package delivered fairly well.
 - Significant progress towards the Internal Energy Market, as e. g. price alignment between hubs increased.
- However, improvement is still desirable.
 - Market mergers → growing market sizes
 - Trading/transportation across several E/E zones
 - Full competition with LNG



Relevant rules for hub development

- In addition to the 3rd package, the **Gas Target Model**, with a focus on timely completion of the internal market outlined
 - How the EU gas market should look like;
 - How the different 3rd package instruments relate to each other, and;
 - Where & how to implement additional measures proposed.
- In general hubs work best when:
 - Markets are big (30 bcm+)
 - Several supply sources and storage capacity is available at acceptable prices;
 - The E/E zones (or the VTP) are easy to reach without structural congestion from as many other hubs/regions as possible;
 - Tariffs are low enough to allow flexible re-routing of gas.
- The relevant regulatory framework consists of
 - Capacity Allocation Management Network Code (CAM NC),
 - Balancing Network Code (BAL NC),
 - Tariff Network Code (TAR NC),
- However, all other Network Codes & Guidelines are of relevance as well.
- In essence they fit well together as the basis for hub development.

2030 Agenda: Retaining & improving liquidity

- Decarbonisation is the top priority for EU policy makers these days, next to economic recovery.
- Hydrogen will be the "energy molecules" traded in 2050.
- However, for quite some time wholesale markets will primarily trade natural gas & only increasingly decarbonised gases & hydrogen.
 - Whether separately or on a joint market has to be seen/discussed.
- Regarding gas wholesale market development new opportunities from neighbouring regions & from new infrastructures arise.
 - Ukraine (as a low cost storage location and as a regional trading hub
 - Turkish Stream,
 - NS2, (more transportation optionality)
 - etc.
- As transport patterns are changing, adjustments & support from Regulators & policy makers is needed to retain & further improve the liquidity of European wholesale gas markets.

Challenges ahead for wholesale gas markets

1. LNG

- Supports liquidity of wholesale markets already today,
- Access rules and downstream delivery options in Europe need improvement
- Global market rules are desirable,
- Longer-term effects of COVID-19 on the LNG glut? → Many FIDs delayed; What next?
- Price formation intransparent (e.g. Asian price spike)
- Restrictions from destination clauses, etc.

2. Energy transition

- The decarbonisation & hydrogen economy targets could fragment the gas wholesale market
- Different gas qualities in member states pose significant risks for cross-border trade.
- Careful considerations needed on how to transition the achievements of the IEM & gas wholesale market to a future fit market place with fully decarbonized "molecules"
- If the total energy consumption decreases significantly in general, this would impact markets as well.

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