



An European Industrial view, enhancing the debate on energy

1st IEF-EU Energy Day

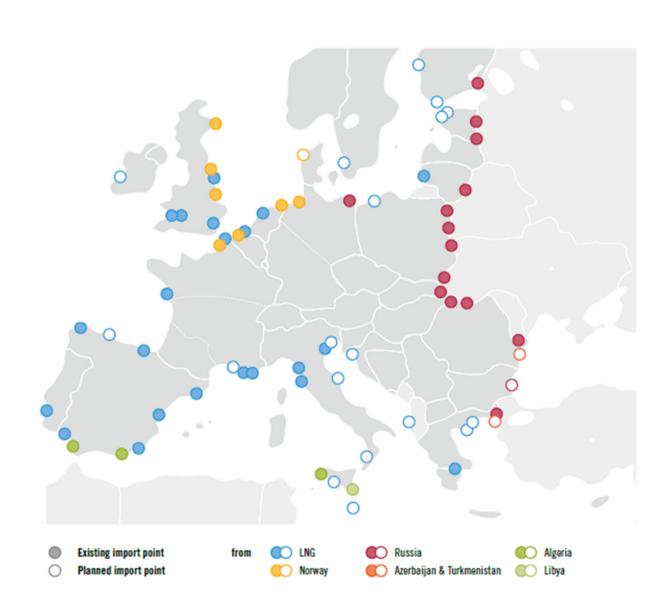
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Geert Greving, Public Affairs, GasTerra B.V. in the Netherlands and member of the IAC, part of the IEF organization in Riyadh

The change of the EU energy market

- From 'fixed' take-or- pay only contracts to a more liquid delivery from supplier to EU end-consumer.
- External deliveries (outside the EU) within the EEA to be 'exchanged' over the zoneline with common rules to end consumers and internal EU shippers.
- Commodity EU market is now for 85% liquid and energy exchanges are supporting the need for energy and are competing for low end user prices (full competition).
- The past 'middle-man' function is deemed, the exchange is in direct channel between supplier (shipper) and consumer.

Market Structure Europe: entry



Diversification of gas supplies, one market and for 85% liquid.

More imports are needed from outside, at EEA location available, onwards to consumers

Internal EU rules in force: for all of us within the EEA.

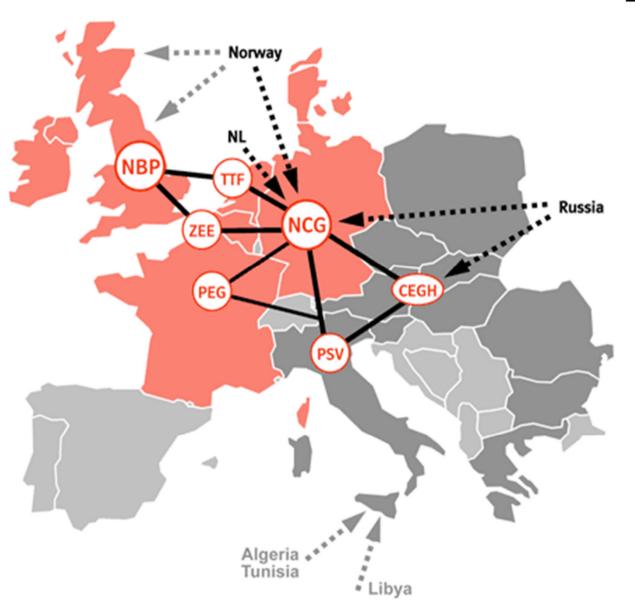
From the EEA entry to the next hub for trading

Transmission etc.: TSO regulated transport.

The role of the HUB's in Europe

- Due to the law of one price, the liquid market in Europe is setting one price at a certain moment (see also the publication about the law of one price).
- Although the TTF is leading more than before, the price within the EU market is the 'same' and underlines that the market is liquid (between Hub's we experience transport costs for moving volumes between the Hub's).
- Moreover caused by many entry options, also lately improved by many LNG receiving terminals, the resilience is stronger than ever before: the market is working and SoS for end users is established.
- The mechanism to install resilience within the EU system is price peaks: incentives to attract other or alternative sources (from pipeline to LNG as an example).
- Given Brexit, the trade at NBP (UK) is moving more towards the continent; shippers avoiding currency risk (pound versus euro).

Market Structure Europe : inside



Increased interconnectivity between national markets.

Creating an one internal European gas market

Law of one price

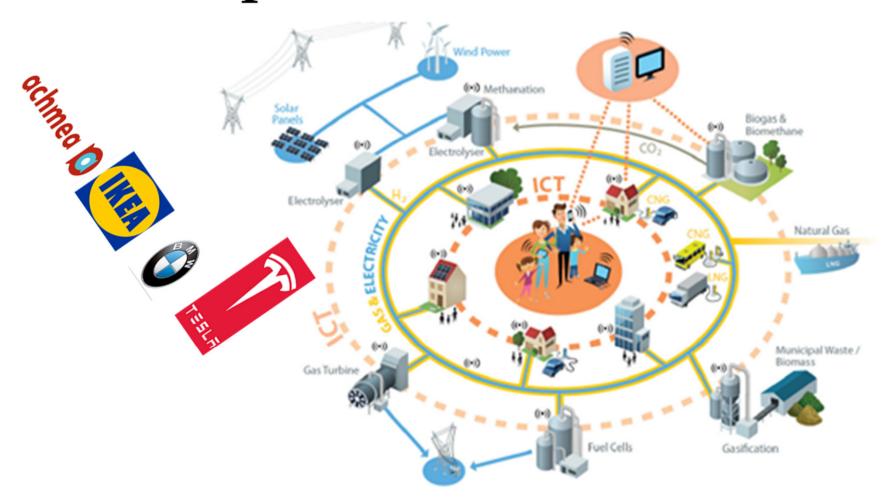
Liquid, transparent market

No one is dominating!, also not Gazprom!

What are the movements, trends;

- Energy demand is pending into the European market: slow down economy?; real energy efficiency, heavy industry is moving global?
- More energy has to be imported; so Europe has to compete for new resources at global scale
- The wishes: more renewables and more sustainable actions: strong ETS: yes!
- Only all needs by renewables: difficult, but joint cooperation with present setting: a better economic solution and one focus: deeming emissions.
- But the EU has to compete also on global industrial actions: being smart as well as in the system devolvement's: smart with decentralized solution: people in power.
- One of the largest challenges: the storage in particular during the day and fall back if intermitted is not delivering (the curtailment issue).
- The realities: markets are the real movers;
- The real barriers and public awareness: no nuclear, no tight oil, no shale gas, NIMBY, etc.: are there options??????

People in Power NW-EU



The best solution: don't use energy and save money: energy efficiency in extreme !!

New entrepreneurs into the energy scene: companies more closer to the public,
forwarding energy packages to consumers, already owning some own power!

The curtailment issue of incoming renewables solving by electric storage and/or power
to gas solutions: be smart and integrate power with gas transmission!

In conclusion, what could be done

- Dr Sun, Secr General IEF;
- Interconnection is a real issue: the more EU is internally connected the better the market is functioning, even deeming dominant suppliers positions. In the EU – IEF setting, the mentioned GCC interconnecting Ring, like the old OECD peace pipeline: interconnect the GCC into the environment, to Europe?; enlarging resilience to end consumers.
- Develop means for transport: south corridor or even go: High Voltage Direct Current (HVDC), the more long distance connections the better: IEF could bridge the issues between IEF partners.
- A smart system is with renewable and taking care of storage, curtailment and intermitted: IEF and IRENA are key here. Further cooperation is encouraged.
- In mature markets, like in Holland, solution like 'gas on design', incorporating renewables, could be real solutions: future partnership is key. These kind of approaches are also deeming emission and support's COP positions (see also the related paper; gas by design).