



Hydrogen in the EU Energy Policy: Gas Infrastructure

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An emerging consensus

What role can gas infrastructure play in the EU's path to decarbonisation by 2050?

- Gas will continue to be needed, due to the flexibility it provides for e.g. seasonal storage
- A clear role for biomethane, but insufficient to cover all demand for decarbonized gases
- Hydrogen as carbon-free gas:
 - In a first phase, injection into the natural gas grid for admixture up to 20%
 - Beyond that, shift to 100% hydrogen networks

Parts of the already existing gas infrastructure can be adapted for 100% hydrogen transport and contribute to reduce the cost of decarbonisation

See Trinomics study for DG ENER: "Impact of the use of the biomethane and hydrogen potential on trans-European infrastructure"

Assessing the implications

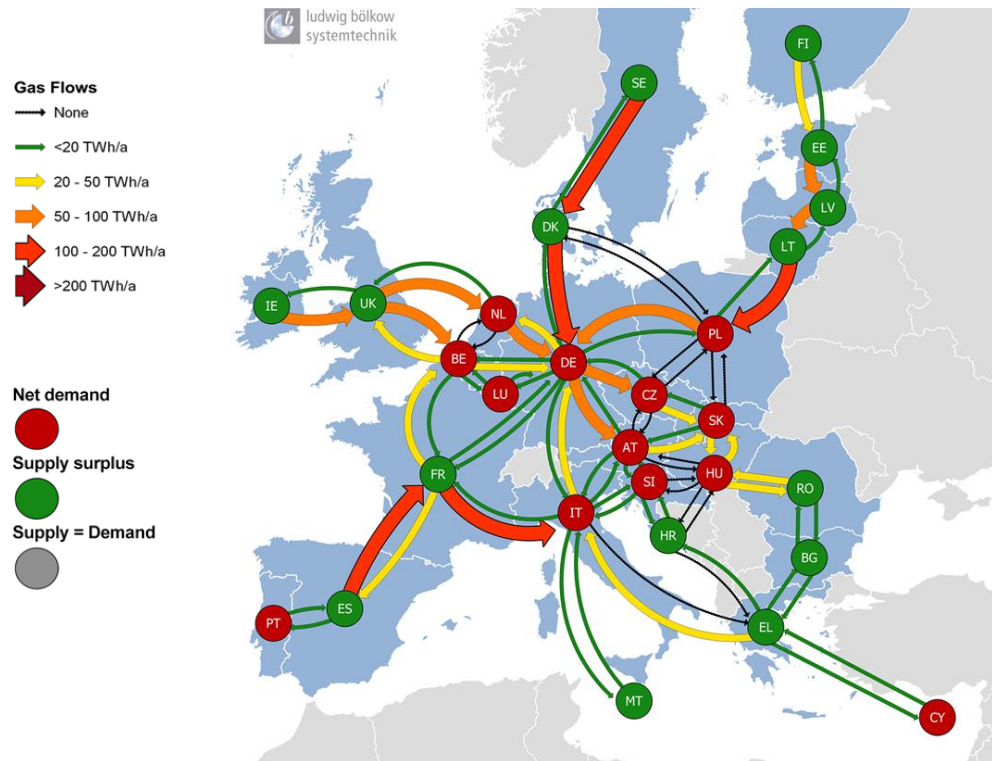
What does this mean for the future shape of the EU's gas infrastructure?

- **Gas and electricity networks get connected and coupled through P2G**
 - **Infrastructure gaps related to RE can potentially be covered by either electricity or gas infrastructure**
- **P2G + Biomethane injection require smart gas grids, decentralization, reverse flow and DSO-TSO cooperation**
- **The replacement of natural gas provides an opportunity in terms of energy independence: what impact for import infrastructure?**
 - **Import sources could change substantially**
 - **Hydrogen and Biomethane could flow within the EU from sun- and wind-rich areas to demand centers**

Hydrogen and Biomethane could provide an opportunity for gas networks to remain relevant, but great challenges ahead

How gas flows can change with hydrogen

*From Trinomics study: Gas flows in the EU by 2050
in a Hydrogen-heavy scenario*



EU-level infrastructure policy tools

TEN-E Regulation

Can PCI and CEF be tools to promote a shift to hydrogen?

- Treaty basis focuses on interconnections between MS, not sustainability
- Current Regulation does not contemplate hydrogen
- But the Regulation also contains hooks that could be exploited

Ten-Year Network Development Plan (TYNDP)

Can the TYNDP integrate a holistic vision of infrastructure planning?

- ENTSO-E and ENTSG have just presented gas-electricity joint scenarios
- ENTSGs also working on the interlinkages between the two models
- As the network evolves, more progress will be needed towards a holistic vision