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Hydrogen storage
A regulator's perspective

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EU ambitions in terms of hydrogen

In its **2020 strategy**, the European Commission's approach was based on a progressive development of the sector

1. Decarbonisation of existing industrial H2 consumption (2020-2024),
2. Development of local H2 ecosystems to promote the take-off of renewable H2 (2025-2030)
3. Creation of dedicated network infrastructure in particular based on the repurposing of gas assets (as from 2030)

EC's legislative proposal on gas decarbonisation (December 2021) laid down the bases of a European market for hydrogen

- Regulatory model inspired from natural gas
- Central role for transmission infrastructure for the development of a competitive H2 market
- Transitory measures until 2030 to facilitate the development of the H2 value chain
- H2 storage to be regulated as default model

The revised **TEN-E guidelines** adopted in 2022 made hydrogen pipelines (and H2 ready gas pipes) and electrolysers eligible to become projects of common interest

The **RePowerEU communication reinforced the EU objectives:** 10 Mt of production and 10 Mt of imports in 2030

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Challenges for a nascent sector

The challenge: to create the conditions for the development of a new industry, knowing that there are many obstacles to overcome: competitiveness of carbon-free hydrogen production, availability of carbon-free electricity…

1. What are the relevant sectors for H2 consumption?

1. Industry: decarbonise captive usages of H2
2. Heavy transport
3. Thermal usages where electrification is not feasible (households seem out of scope)

2. Quality of service and security of supply

- Need to address in a consistent way H2 production, consumers needs and constraints specific to the power sector
- Redundancies and storage will be needed under the constraint of economic competitiveness

3. Infrastructures

- Strong pressure from the gas sector to convert existing infrastructures: a solution that has its advantages but must not ignore the needs of the hydrogen sector.
- If concepts of essential facility and natural monopoly emerge, thus regulation and third party access will make sense

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H2 infrastructure regulation?

Reminder: energy infrastructure regulation was designed for mature sectors, moving from monopolies to competitive organisations in electricity and gas

- Gas and power markets enjoyed high consumption (and needs)
- Technologies were mature and economically competitive
- New assets could be included within large existing systems thus making their financing easy (cost socialization)

Role of regulators in this context: ensure regulated costs are efficient and stimulate competition via TPA rules to essential facilities (including gas storage)

What about hydrogen?

- Regulators should not be requested to determine the relevant business models, it is the role of the market and the industry
- Assets are to be created from scratch, their costs cannot be secured on a large number of consumers: how to address risks? Who should pay for sunk costs?
- Costs must be minimized for a sake of EU industry competitiveness: selecting the relevant investments is critical

Regulating H2 storage?

- Storage has proved to be critical in the natural gas sector, a large scale development of demand could bring comparable needs
- However usage profile will likely be very different: need to specifically think about H2 storage value
- Regulation: the use of storage services will steer the design of rules and tariffs

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Thank you

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