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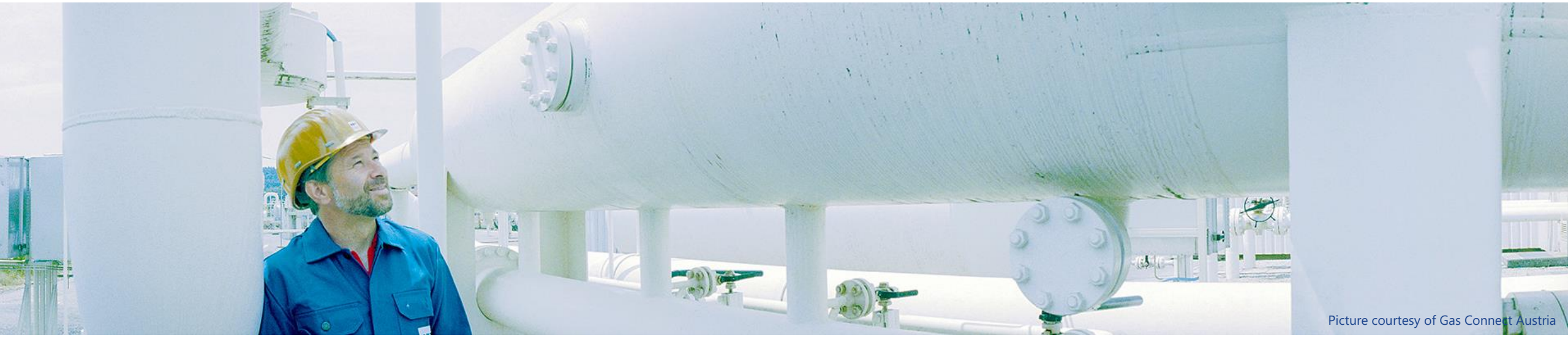
Rev0



Picture courtesy of Gas Connect Austria

3rd meeting of ENTSOG Advisory Panel for Future Gas Grids

Key take-aways from 24 June

ENTSOG Team

Session1: European Clean Hydrogen Alliance project collection

- **DG GROW:**
  - 262 transmission and distribution projects collected in ECH2A, 45 integrated infrastructure and storage projects - confirms that large scale storage is no longer theoretical.
  - Data shows emergence of geographical clusters, which will be assessed further to determine the H2 corridors
  - Large number of projects are not integrated, with promoters who look for the project partners.
  - 80% of projects collected are confidential
- **Portuguese Presidency:**
  - Need to overcome the geographical determinism for the clusters, by efficient combinations of shipping, pipelines and inland distribution through all MSs
  - Highlighted importance of ports as important hubs for H2 economy, shouldn't focus only on grids and pipelines. Therefore in Annex 1 of TEN-E explicit broadening of what is understood as corridor is needed
  - Coordination of CAPEX and OPEX support mechanisms in PT is needed, and to properly link consumers and producers, OPEX support mechanism should be applied in Europe.
- **Port of Antwerp:**
  - EU ports have an important role to play, in connecting production with consumers, all transportation means need to be used
  - Future will be both molecules and electrons, power grids are only part of the solution

Project collection showed large number of H2 project to be deployed in the next 2-3 years, still need to integrate projects to establish H2 corridors, but H2 will be transported via all means (pipelines, ships, inland distribution)

Session2: End-users – use cases of renewable and decarbonized gases

- **EU Turbines equipment is partly H2 ready**, will indicate for every new plant the level of readiness, **but being H2 ready doesn't help if there is no access to H2,** planning is focused on hard to decarbonise sectors and not enough on gas powered plants
- **On cost for transition:** CO2 price central for steering, also some in favour for CCfD
- **Blending**: Industry does not see role for blends (except EHI), need predictability and stability, as some production is continuous production, and need steady flow
- **Preservation of production industry in Europe to ensure certain level of independence** - need to be very cautions for the precursors, if final products made in EU become uncompetitive – and therefore more economical to import.
- **Digitalization** would help heating system to become smarter, however installed stock today will require time to have uptake, dependent on the market
- **Barriers:** uncertainty of future H2 volumes & costs (costs of using green H, instead of grey is 3-4 times the price, difficult to make a business case and projects are currently not bankable), high demand of affordable renewable electricity not there, clear terminology missing, lack of a comprehensive certification & verification framework for clean H2, etc.
- **Asks to TSOs**: predictable direction on GQ and predictable direction is missing - TSOs need to ensure involvement of the industry into planning process.

Industry needs stable GQ, technologies are H2 ready, but digitalisation tools needed, however green H2 projects still not bankable

Session3: Smart gas grids and digitalisation

- **Digitalisation not new in gas sector** - Gas quality tracking exists for a long time
- **Smart GQ tracking** - applies measure data as input data for simulation of flows in the grid. Dynamic simulation typically in hourly resolution. Gives a clear picture about gas distribution of a past period. Systems are used for billing
- **City grids can demonstrate better adaptability to green gases** than rural grids.
- It is important for **grid operators to know about their sensitive customers and to have measures to provide stable Gas Quality - Simulation toolkit is needed (e.g. SmartSim)**
- **Benefits of digitalisation:** Flexible grid – better opportunities for operating/optimising grids, compressors etc; Brings in new opportunities of developing the grid and to solve problems with meters etc; Better communication of implementation of green gases, monitoring (e.g. methane emissions)
- With smart tools possible to **create a data hub** that can serve to optimise production and injection of gases into network to achieve most cost efficient sector coupling - Data available to consumers, will provide transparency to end-consumer and to make better decision regarding SoS.
- **Challenge: Cyber security** (e.g. Colonial Pipeline cyber attack)

Digital tools in gas sector not new, will need them more in future as GQ to fluctuate and to supply sensitive customers, though risk of cyber attacks

Thank you for your attention

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