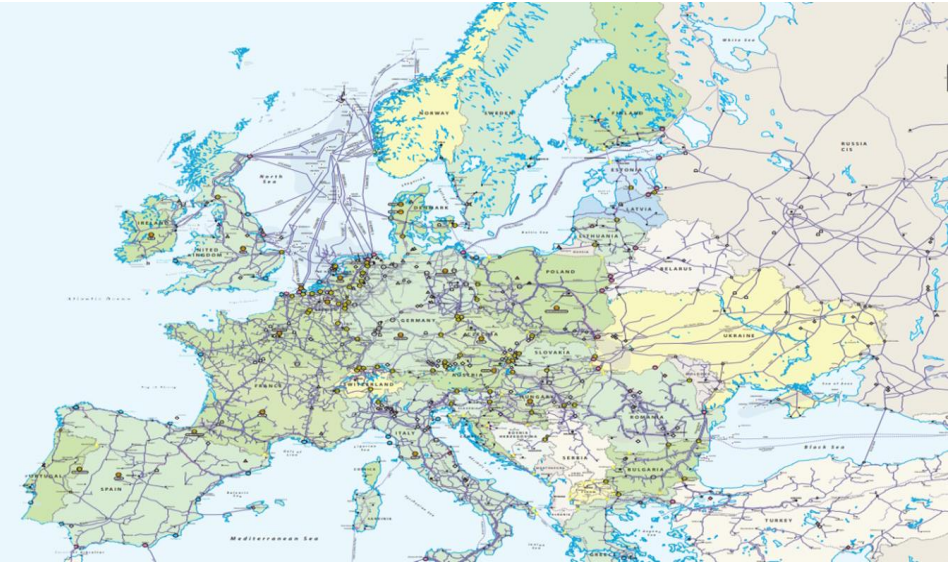


'Making European gas grids ready for the energy transition'



Advisory Panel for Future of Gas Grids

4th meeting on 26 October

Jan Ingwersen, ENTSOG General Director

1. Introduction by Jan Ingwersen

Broad Stakeholder Representation



Agenda

Agenda	Time
1. Introduction and welcome by Jan Ingwersen	13:00 –13:10
2. Repurposing framework 2.1. Introduction to 4 key topics 2.2. Recommendation report – process and goal 2.3. Summary of Technical aspects 2.4. Summary of Market aspects	13:10 –14:30
3. Session on Planning and Regulation for hydrogen Chair: Klaus-Dieter Borchardt Speakers: Ilaria Conti (FSR), Riccardo Galletta (ACER), Ralph Bahke (GIE) Discussion	14:30 – 15:30
4. Session on Cost/risk allocation (financing mechanisms for transferring the gas assets into the hydrogen networks) Chair: Walter Boltz Speakers: Alberto Pototschnig (FSR), James Watson (Eurogas), Benoit Esnault (CEER) Discussion	15:30 – 16:30
5. Summary and next steps	16:30 – 17:00
6. Closure of the meeting	17:00

Key take-aways from 3rd meeting of Advisory Panel



Session1: European Clean Hydrogen Alliance project collection:

- **262 transmission and distribution projects collected in ECH2A**, 45 integrated infrastructure and storage projects, 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
- Portuguese presidency highlighted **need to overcome the geographical determinism for the clusters** by efficient combinations of shipping, pipelines and inland distribution through all MSs
- Port of Antwerp **highlighted EU ports have an important role to play**, in connecting production with consumers, all transportation means need to be used

Session 2: End-users – use cases of renewable and decarbonized gases:

- **On cost for transition:** most projects unbankable, high cost, 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
- **Barriers:** uncertainty of future H2 volumes & costs, 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.

Session 3: Smart gas grids and digitalization:

- **Digitalisation not new in gas sector** - Gas quality tracking exists for a long time
- Important for **grid operators to know about their sensitive customers and 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; Brings in new opportunities of developing the grid and to solve problems with meters etc; Better 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**

2. Repurposing framework

Recommendation Report



- Focus: Repurposing framework for gas grids
- Chapters: Technical, Market, Regulation & Planning, Financing
- Include stakeholders' views and positions along the whole-value chain
- Goal: External publication and dissemination to EC and wider public

- Presentation of stakeholder's views on Repurposing framework and work of the Panel in 2021 in a video format to be presented at the ENTSOG Annual Conference

Gas Grids repurposing framework



Market elements

Key points raised on H2 and Gas Decarbonisation package in April:

- Energy system approach needed
- Need to mobilise significant amount of capital investment to manage transition
- Industrial competitiveness important
- Need for gradual regulation – offering sufficient certainty and flexibility to investors
- Differing views on cross-subsidisation between gas & H2 tariffs
- Establishment of GOs system needed, differences on which carriers to include
- Gas TSOs to manage gas quality

1. Any additional points to be included?
2. How did your messages evolve?
3. What are the key elements for you and your sector?

Technical elements

Key points raised in the last meeting:

- Digital tools in gas sector not new, will need them more in future as GQ will fluctuate
- Important for grid operators to know about their sensitive customers and to have measures to provide stable GQ
- End-users want predictable GQ, majority against blends, negative impacts on equipment and feedstock (except EHI)
- Creation of data hubs can optimise production and injection of new gases into network, cyber threats need to be factored in
- Technological readiness for end-users:
 - heating H2 appliances are quite competitive with technologies that are already on the market
 - Turbines - upgrading existing plants needs individual analysis. Up to 20-30% H2 blending requires in most cases small modifications
 - Chemical industry - technological risk during process scale-up to commercial size

1. Any additional points to be included?
2. How did your messages evolve?
3. What are the key elements for you and your sector?

Recommendation Report timeline



3. Session on Planning and Regulation for hydrogen

Panel: Planning and Regulation for hydrogen



Chair: Klaus-Dieter Borchardt



Ilaria Conti
Head of the Gas Area
Florence School of Regulation



Riccardo Galletta
Policy Officer,
ACER



Ralph Bahke,
GIE New Gases Area Sponsor
Gas Infrastructure Europe

4. Session on Cost/risk allocation (financing mechanisms for transferring gas assets into H2 networks)

Panel: Cost/risk allocation (financing mechanisms)



Chair: Walter Boltz



Alberto Pototschnig,
Executive Deputy Director
Florence School of Regulation



James Watson,
Secretary General
Eurogas



Benoit Esnault,
Vice-Chair of the Gas Working Group
Council of European Energy Regulators

Online, 10.26.2021

4th Advisory Panel for

Future Gas Grids cost/risk allocation

Walter Boltz

Senior Adviser European Energy,
Member ACER Board of Appeal,
Former Chair ACER Gas Working Group

Financing the decarbonisation of gas networks

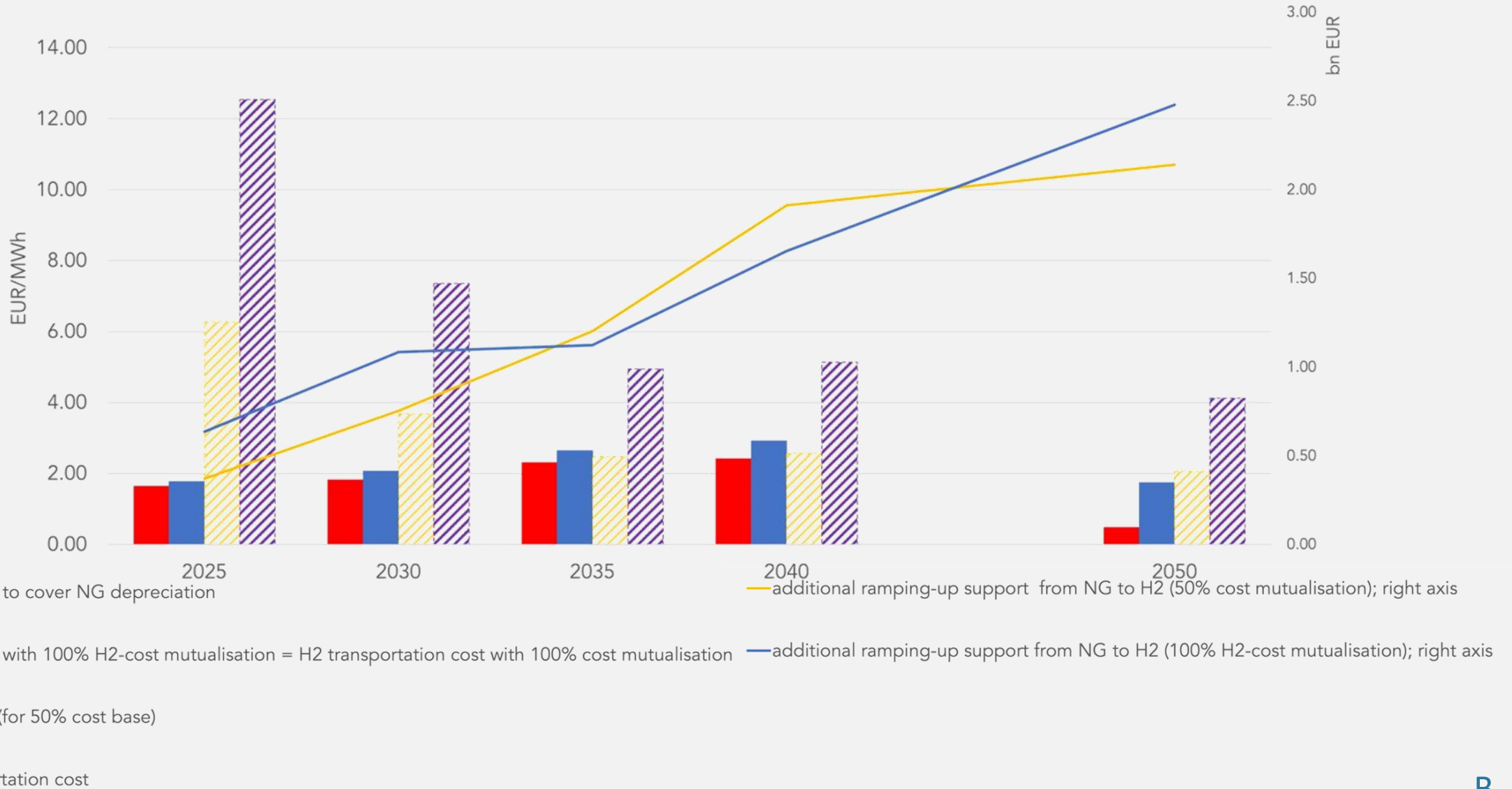
We can probably all agree on:

- Decarbonisation in general needs to happen asap & at large scale.
- ... also, in hard to electrify sectors like industry, transport & maritime applications.
- Costs do matter & we need to ensure the most cost-efficient transformation.
- Investor's appetite is currently limited due to unclear risks & financing options.

Room for discussion exists regarding:

- What we are aiming for: hydrogen as a niche market or a common/mass market.
- The right level & timing of regulatory interventions incl. network development
- The financing approach for hydrogen transportation
 - State subsidies
 - Pure cost-based hydrogen network tariffs
 - Cost mutualisation/cost socialisation

Transportation cost & needed financial support for H2



Walter Boltz

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Panel: Cost/risk allocation (financing mechanisms)



Chair: Walter Boltz



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Enabling gradual and flexible regulation for hydrogen



Ensuring a level playing field in a decarbonised and integrated energy system



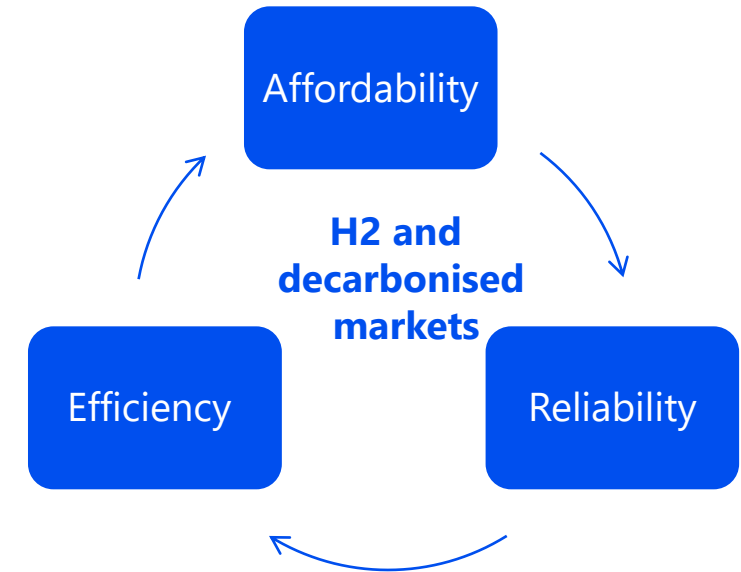
Empowering and protecting consumers for the energy transition

Guiding principles for hydrogen

- Transparency: before repurposing, the transparency of gas assets value should be guaranteed. The cost of repurposing should not impact cross-border gas transmission tariffs
- Adopt a more integrated approach to infrastructure development, both in relation to different levels of supply chain and to various energy carriers
- The development of hydrogen infrastructure should be in line with needs and should be paid back by the hydrogen sector, be it in a long-term perspective (beneficiary pays principle). This approach corresponds to a rational development of any industry sector.

Views on subsidies to the hydrogen sector

- No clear rationale for subsidies from gas, whether they take the form of asset transfer below their residual value or direct payment of H2 transportation cost by gas network users.
- The practicality of a support of H2 by gas should not prevent from a sound management: subsidies, if any, should come from dedicated mechanisms (based on public funding preferably).



5. Summary and next steps

Next steps





Thank you for your attention

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