



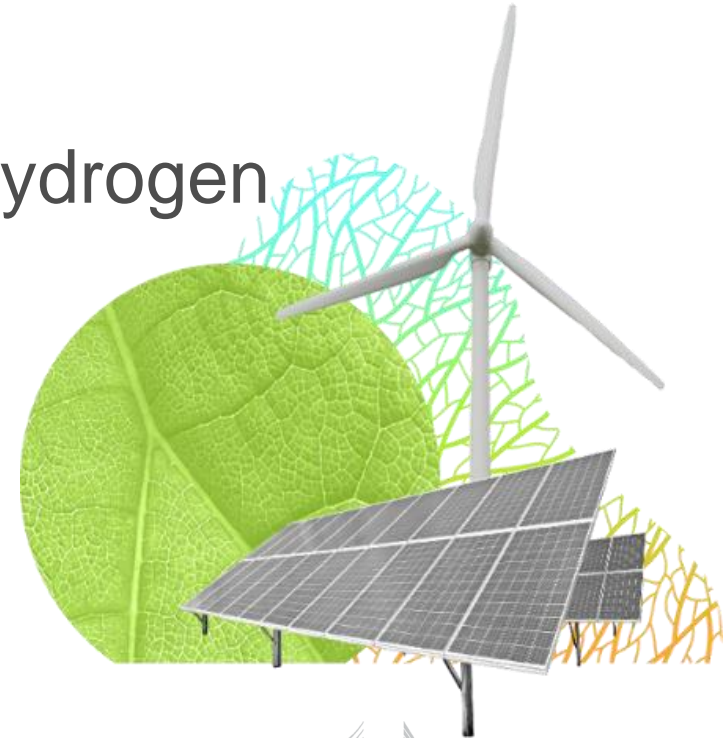
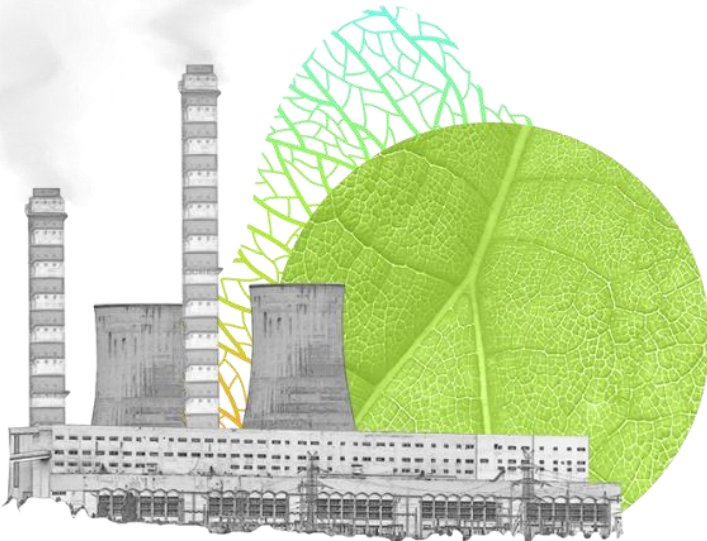
Fit for 55 package

HYDROGEN AND GAS MARKETS DECARBONISATION PACKAGE

Energy Community Regulatory School
15 February 2022

Agenda

1. Introduction – Context of the Commission proposal
2. Architecture of the Commission proposal
3. Overview of proposal for natural gas and for hydrogen

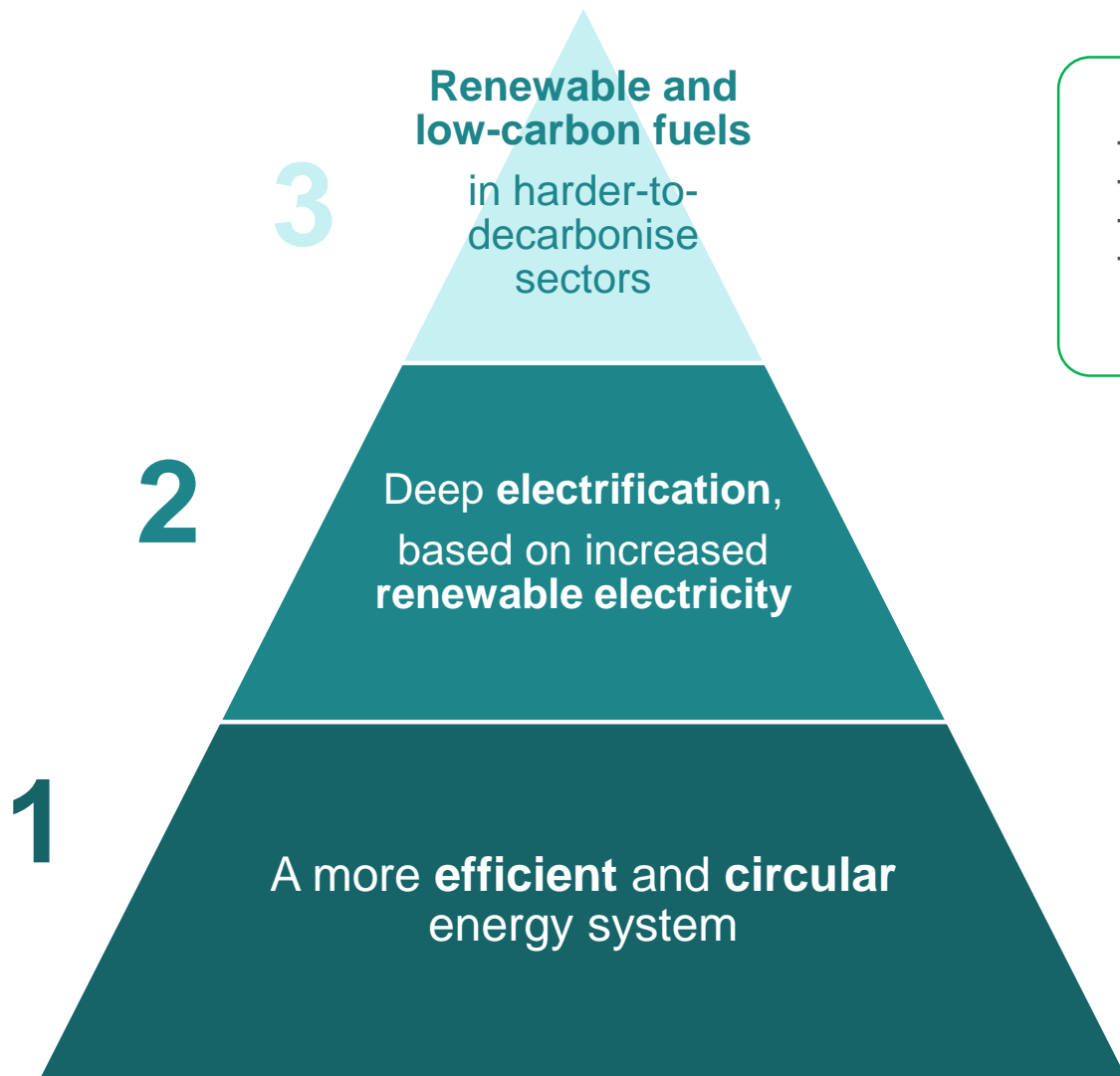


Introduction – context of the proposal

Transforming our energy system



EU Hydrogen Strategy



- **6 GW** of renewable hydrogen electrolyzers
- Replace **existing hydrogen production**
- Regulation for liquid hydrogen markets
- Planning of hydrogen infrastructure

2025

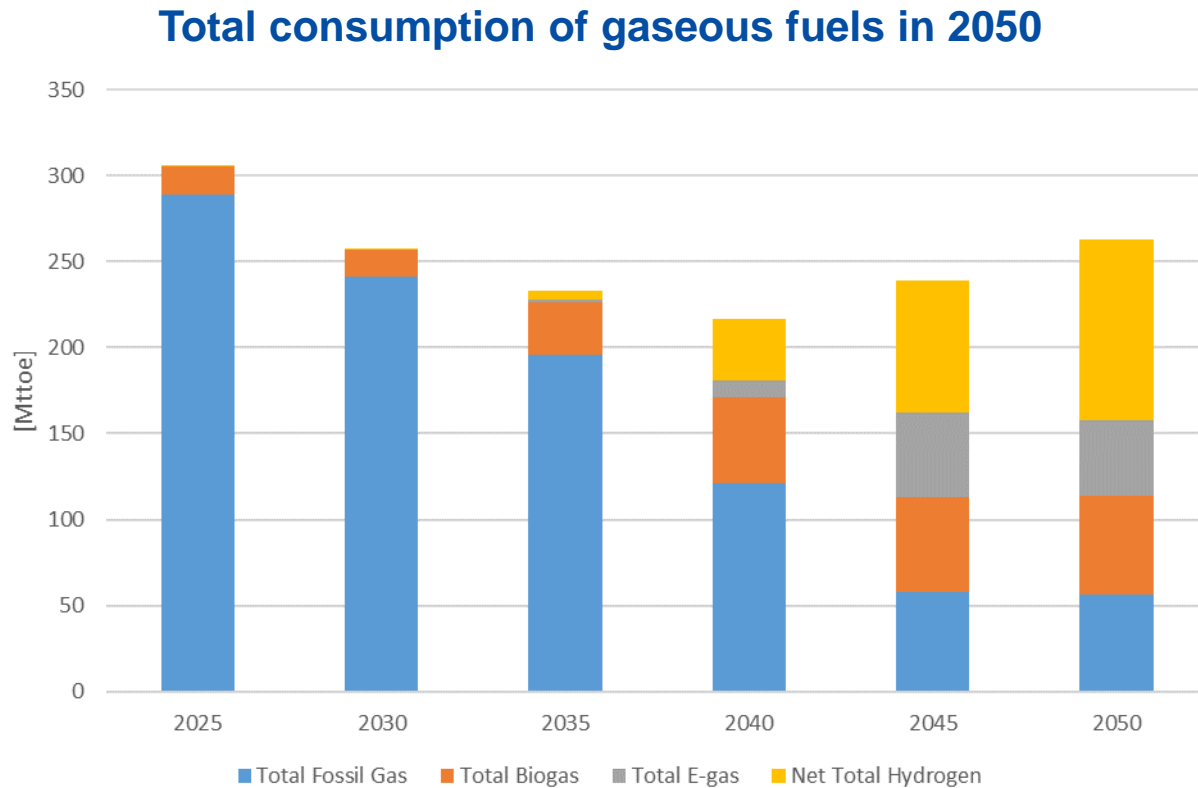
- **40 GW** of renewable hydrogen electrolyzers
- New applications in **steel and transport**
- Hydrogen for electricity balancing purposes
- Creation of “Hydrogen Valleys”
- Cross-border logistical infrastructure

2030

- Scale-up to **all hard-to-decarbonise sectors**
- Expansion of hydrogen-derived **synthetic fuels**
- EU-wide infrastructure network
- An open international market with € as benchmark

2050

Expected changes in the composition of gaseous energy carriers in the EU towards 2050



- Gaseous fuels will represent approximately 20% of final energy consumption in 2050
- Shift from unabated fossil gas towards renewable and low-carbon gases
- Gaseous fuels in 2050 to include mainly biogas, bio-methane, renewable and low-carbon hydrogen as well as synthetic methane

Source: EC PRIMES MODEL, MIX H2 scenario. This scenario takes strategic targets of European hydrogen strategy into account and considers options of promoting RFNBOs in industry and transport.

Architecture of the package

Legal structure: 2 legal acts and further amendments



Brussels, 15.12.2021
COM(2021) 803 final
2021/0425 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on common rules for the internal markets in renewable and natural gases and in hydrogen

{SEC(2021) 431 final} - {SWD(2021) 455 final} - {SWD(2021) 456 final} -
{SWD(2021) 457 final} - {SWD(2021) 458 final}

[Old Gas Directive 2009/73]

THIRD ENERGY PACKAGE



Brussels, 15.12.2021
COM(2021) 804 final
2021/0424 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the internal markets for renewable and natural gases and for hydrogen
(recast)

{SEC(2021) 431 final} - {SWD(2021) 455 final} - {SWD(2021) 456 final} -
{SWD(2021) 457 final} - {SWD(2021) 458 final}

[Old Gas Regulation 2009/715]



Further amendments to:

SoS Regulation (EU) 2017/1938

ACER Regulation (EU) 2019/942

**REMIT Regulation (EU) No
1227/2011**

Hydrogen and gas markets decarbonisation package: 5 policy aims

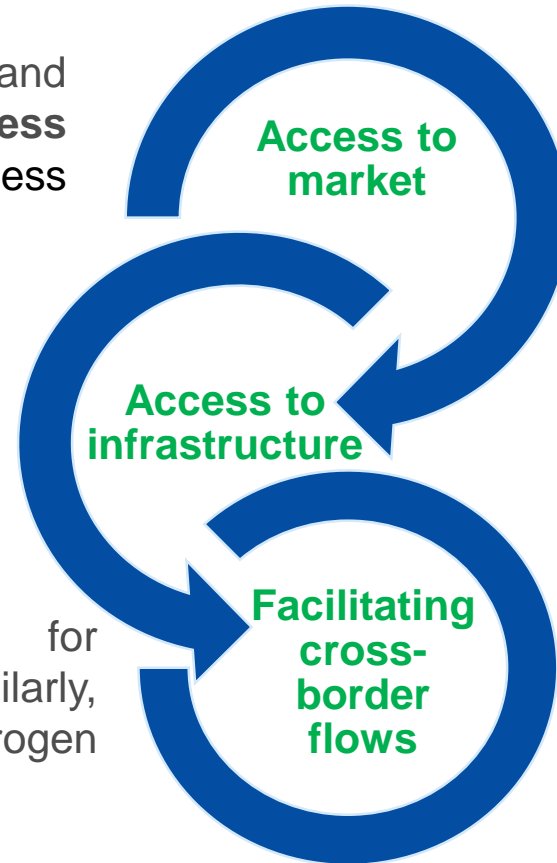
- I. Facilitate access of **renewable and low-carbon gases** to existing gas network
- II. Enabling development of **dedicated hydrogen infrastructure** and market
- III. Fostering **network planning** electricity, gas and hydrogen
- IV. Promote **consumer protection and engagement** in renewable and low-carbon gas markets
- V. Improve **resilience and security of supply**

Overview of the regulatory framework for hydrogen infrastructure and markets

I. Facilitate access of renewable and low-carbon gases to existing natural gas network

Facilitating access of renewable and low-carbon gases into the existing natural gas network

- ✓ Allowing and promoting renewable and low-carbon gases **full market access** including: **wholesale market access** **physical flexibility - reverse flows**.
- ✓ Measures to facilitate **gas storages and LNG terminals** to **receive** renewable and low-carbon gases
- ✓ **Removing cross-border tariffs** for renewable and low-carbon gases. Similarly, in the future for dedicated hydrogen network.

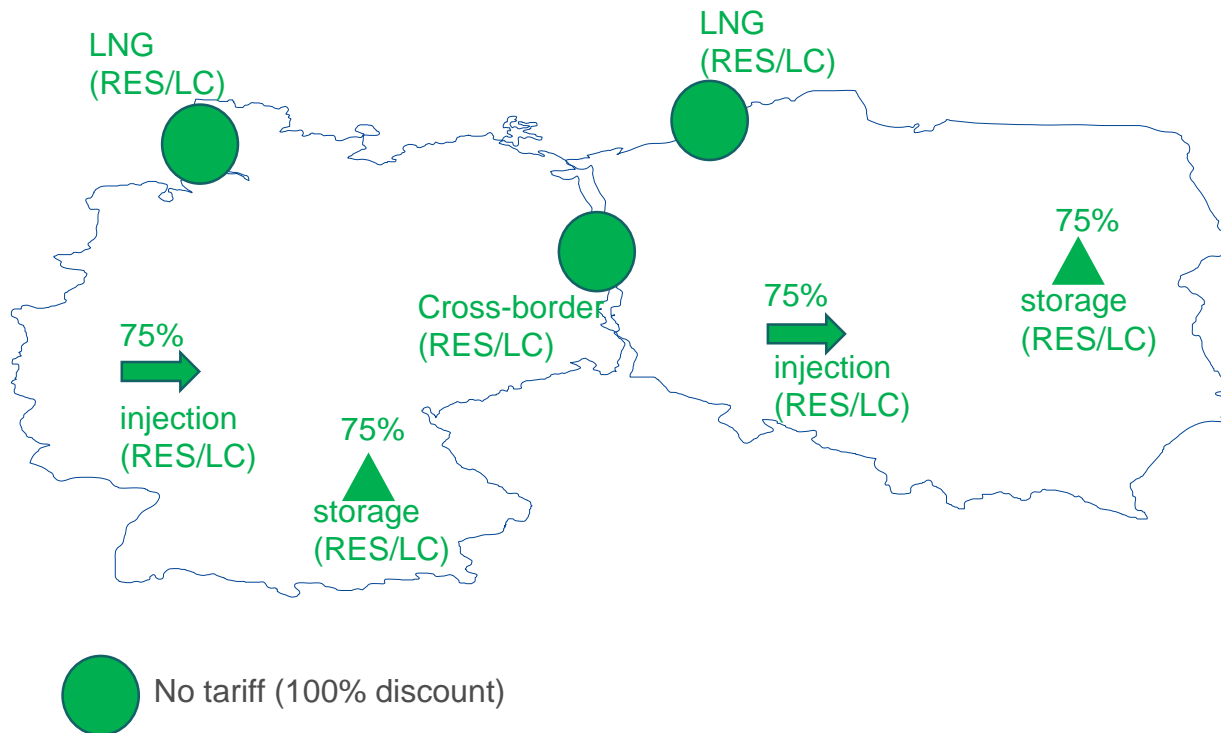


- ✓ More **transparency and better use** of free capacities at **LNG terminals and gas storages** allowing more flexible gas trade and use of the terminals and storages.
- ✓ **75% tariff discount** for the **injection** and connection of renewable and low-carbon gases.
- ✓ Introducing a **5% cap for hydrogen blends** at interconnection points between Member States to avoid cross-border flow restrictions due to differences in blending, which network operators must accept. No blending obligation; voluntary agreements for higher blends possible.

- ✓ **Ban for Long-Term Contracts for unabated fossil gas by the end of 2049.** Short term supply, with contracts below one year, important for security of supply and market liquidity reasons will still be allowed.

Tariff discounts for renewable and low carbon gases

Articles 15-17 Gas Regulation



New mandatory tariff discounts for renewable and low carbon gases:

- Removing (100% discount) the **cross-border tariffs** and for **entry tariffs from LNG terminals** to the grid.
- 75% discount **on entry points (injection) production facilities** (e.g. biomethane or hydrogen) for the purposes of scaling-up these gases.
- 75% entry points from and exit points to **storage** facilities

5% allowed cap for hydrogen blends at interconnection points

Articles 20, 65(7) Gas Regulation

- It is a cap, not a blending obligation. It means that transmission system operators must accept at interconnection points max. blend of 5% to avoid market segmentation.
- Provides a process to agree on the practical implementation (technical solutions and financing) with clear roles for market participants and regulators.
- It applies at interconnection points between Member States. It does not set a cap for a Member State's domestic network.
- Voluntary agreements for higher blends at interconnection points between Member States remain possible.
- In line with the Hydrogen Strategy: reflects the priority to use hydrogen in its pure form.
- 5% was found by studies cost-efficient in terms of abatement and adaptation costs for end-users and infrastructure operators.

II. Enabling development of dedicated hydrogen infrastructure and market

Regulatory approach hydrogen infrastructure and market

- Point of departure: **hydrogen value chain = immature**
- **Phased approach** on introduction of market and network regulation
 - Based on **proven regulatory principles** for energy networks: TPA, unbundling, tariff regulation
 - **Flexibility** in application of these regulatory principles until 2030
 - BUT application of main regulatory principles for mature markets (after 2030) is defined upfront
- ‘Main regulatory principles now’ → investor certainty, better rules at lower regulatory costs/avoidance of high costs of ex-post interventions and flexibility to define details later.
- Importance of ensuring convergence of regulatory treatment of initially dispersed hydrogen network elements (private networks, geographically confined networks, hydrogen backbone)

Vertical unbundling of hydrogen networks (separation from energy production and supply) Art. 62 Gas Directive

- Default rule: ownership unbundling, i.e. no participation of hydrogen network operators in energy production/supply
- NB: no changes for gas and electricity TSOs and DSOs → production/supply of hydrogen remains prohibited (exception: rules on energy storage for electricity TSOs and DSOs)
- Rules do not imply divestitures of networks by currently vertically integrated undertakings (e.g. natural gas TSOs/DSOs aiming to pursue H2 network activities, existing private hydrogen companies)
 - Exceptions until 2030:
 - ISO/ITO model for Vertically Integrated Undertakings (VIUs) at entry into force legislation
 - Vertically integrated networks (for VIUs at entry into force)
 - For geographically confined networks
 - Exceptions after 2030:
 - ISO (for VIUs existing at entry into force)
 - For geographically confined networks (conditional)

Horizontal unbundling of hydrogen networks (separation from other energy network activities) Art. 64 Gas Directive

- Legal unbundling for different types of energy networks (separate subsidiary, but no functional unbundling, i.e. no rules on independence of management etc.)
- Combined operatorship possible for hydrogen networks, storages and terminals
- However, accounts unbundling for different infrastructure operation activities
 - Operational synergies between hydrogen and natural gas network operations can be retained
- NB: Separation of regulatory asset bases applies (see slide 15)

Separation of regulatory asset bases

Art. 4 Gas Regulation

- Regulatory asset base = all network assets used for provision regulated service (e.g. transmission of gas). Basis for calculating network tariffs.
 - Default rule: Separation of regulatory assets bases (e.g. networks for gas and hydrogen)
 - Member States can temporarily allow cross-financing between network assets subject to NRA approval:
 - ✓ Collection of levies on domestic exit points of networks only;
 - ✓ Financing only for infrastructure with tariff revenues; no over-funding
 - ✓ Limited duration: max. 1/3 of depreciation period (consequently, cross-financing after 2030 remains possible)
 - ACER to issue recommendation on methodologies
- Principle of separate asset bases retained as most cost-efficient in the long-run. However, barriers to network development during initial ramp-up phase addressed.

Third-party access and network tariffs for dedicated hydrogen infrastructure

Networks: Art. 6 Regulation, 31 and 53 Directive

Storage and Terminals: Articles: 2(6), 2(8), 32 and 33 Directive

Networks

- Scope: (repurposed) hydrogen transport pipelines

Regulatory regime until 2030

- Member States can choose **negotiated TPA**
- Tariffs agreed bilaterally between operator and network user

Regulatory regime after 2030

- **Regulated TPA** mandatory
- Tariffs set or approved by NRA
- No tariffs on interconnectors between MS.
- Financial compensation mechanism cross-border infrastructure (Art 53)

Hydrogen Storage facilities

- Scope: large scale underground storage facilities
- Easily replicable storage facilities not in scope
- Scarcely available (risk of natural monopoly) & important systemic function

Regulated TPA from the start as well as after 2030

Hydrogen Terminals

- Scope: installation dedicated to transformation of imported liquid hydrogen or ammonia into gaseous hydrogen for injection in dedicated hydrogen network.
- Expected competition not only among terminals but in particular among means of hydrogen import

Negotiated TPA from the start as well as after 2030

Regulatory derogations for hydrogen networks

Art. 47 & 48 Gas Directive

➤ Existing private networks:

- For networks belonging to a VIU at entry into force of the Directive
- Derogation from unbundling and third-party access
- Expires in 2030 or before if network is extended/connected

➤ Geographically confined networks:

- For geographically confined networks with one entry point
- Derogation from unbundling → rules on third-party access apply
- Expires after 2030 if network is connected or a renewable hydrogen producer requests access to network

⇒ Regulatory convergence:

- of all existing and new networks on main regulatory principles by 2030
- if part of an interconnected system

Definition and certification of low-carbon hydrogen

Article 8 Directive

➤ Definition of low-carbon hydrogen:

- Greenhouse gas emission savings are at least 70%, to be reviewed if threshold should be raised for installations starting operations as of 2031.

➤ Objective of the certification system:

- Ensure consistent and robust certification of low-carbon hydrogen (in addition to the certification already applicable to renewable hydrogen under the Renewable Energy Directive) across Europe and for imports.
- Certification based on the existing good practices of voluntary and national certification schemes already developed under the Renewable Energy Directive.
- Applying a life-cycle emission approach in line with the Hydrogen Strategy.
- The exact methodology to assess emissions for low-carbon hydrogen will be developed through a Delegated Act adopted by the end of 2024.

Rules for hydrogen interconnectors with third countries

Article 49 Directive

- Hydrogen interconnectors with third countries are subject to the rules for hydrogen networks.
- Conclusion of Union-level intergovernmental agreements where deemed necessary to ensure application of EU energy law.
- Content can also include provisions to set out how compliance with EU sustainability requirements will be ensured.
- Clarification regarding IGA Decision (EU) 2017/684: Member States' obligation to notify IGAs in the field of gas applies also to hydrogen

European Network of Network Operators for Hydrogen (ENNOH)

Articles 40-46 Regulation

European Network of Network Operators for Hydrogen (ENNOH) to ensure EU level coordination of hydrogen network operators:

- Composed of certified hydrogen system operators;
- With mandate for all hydrogen topics, incl. H2 TYNDP, H2 network codes, etc.;
- Working in cooperation with the other ENTSOs and consulting relevant stakeholders; and
- Financed by hydrogen network operators (NRA can take the costs into account in calculation of tariffs).

A separate **ENNOH**:

- Underpins the role of hydrogen in decarbonisation, equal footing with ENTSO-E and ENTSG;
- Ensures dedicated approach to better target the development of hydrogen networks to the real needs of the hydrogen market;
- Takes into account that the use of hydrogen and thus the hydrogen infrastructure needs are expected to differ from the current gas market;
- Managed gradual transfer of infrastructure planning tasks from ENTSG to ENNOH.

Fostering network planning: electricity, gas and hydrogen

Single network development plan at national level of all gas TSOs.

Gas network operators include information on infrastructure that can or will be decommissioned (and could potentially be repurposed for transport of hydrogen).

Alignment with National Energy and Climate Plans (NECPs) and Union wide Ten Year Network Development Plan.

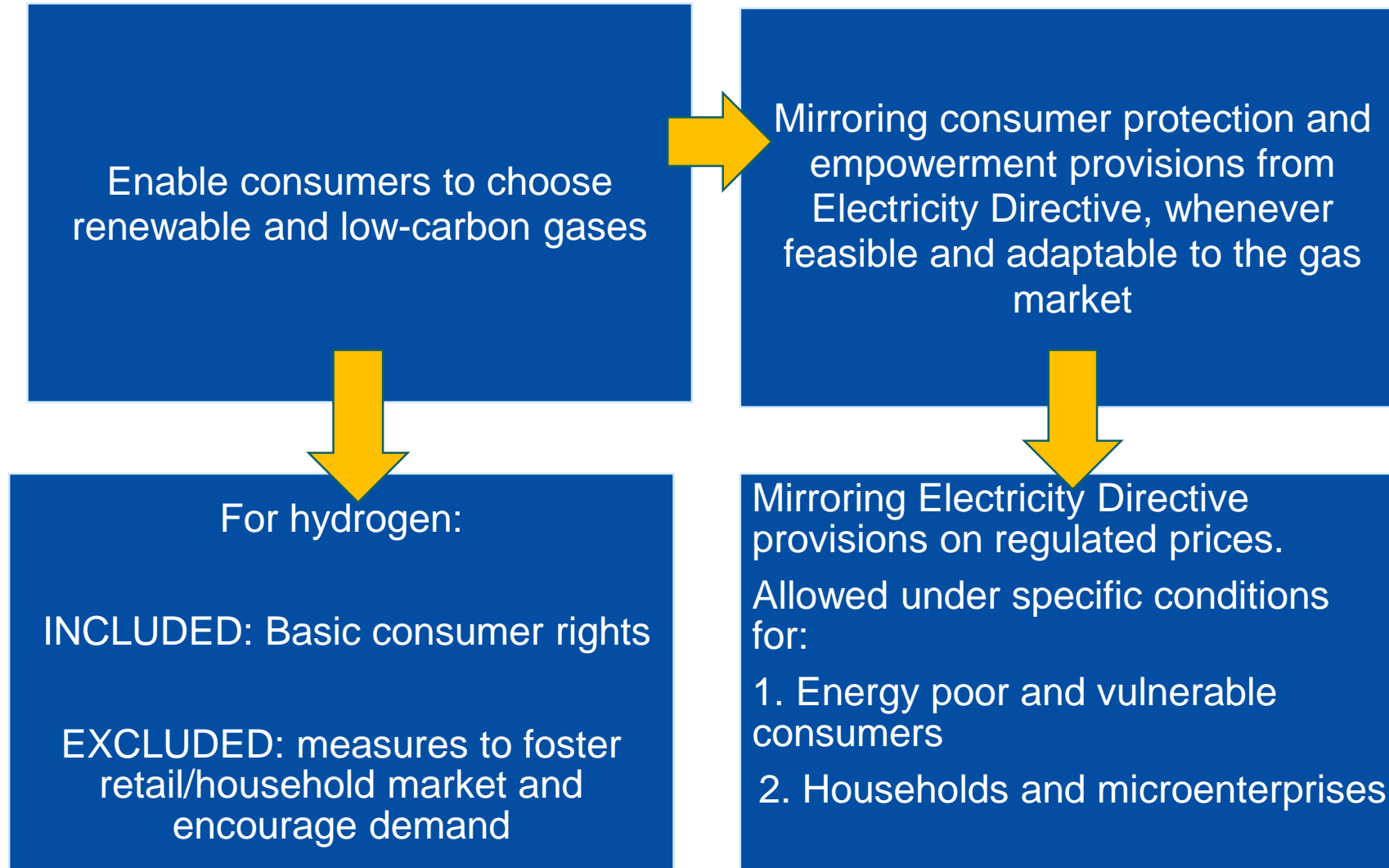
Separate hydrogen network development *reporting* to ensure that construction of hydrogen system is based on realistic and forward looking demand projection.

Separate hydrogen network development reporting

Article 52 Directive

- Lighter reporting approach corresponds with emergent development hydrogen network.
- No regulatory approval of report. Why? Under initial TPA-regime tariffs are negotiated between network users and operators and not set/approved by the regulator (on basis of required investments included in network development plan)
- Report should create transparency in development hydrogen network for stakeholders and facilitate H2 PCI-projects selection under revised TEN-E

Promote consumer engagement in renewable and low carbon gas markets – Options and selected “mirroring” approach: see IA par 5.5, 6.4, 6.5.4, 7.4, 8.4, Annex 9



Thank you

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