

Public Consultation on the Hydrogen and Gas Market Decarbonisation Package

Summary: the consultation has been put in place to reflect the possible need for legislative changes related to a cost-efficient decarbonisation of the existing gas sector:

- enabling a market for renewable and low carbon hydrogen allowing it to become a key component of the energy sector, and
- facilitating the injection, transmission, distribution, and trading of renewable and low carbon gases in the existing gas grid in the context of the wider energy system integration.
- providing the right framework for off-grid production of certain renewable gases, which might not be connected to any network at all but could be consumed at the place of production (e.g., by small modular electrolysers) or transported by other means (e.g., rail or road) to where they will be used.

The questions are divided into 8 sections:

- Questions about the identity of respondents.
- General questions on revising the Gas Directive and Gas Regulation.
- More specific technical questions on e.g.:
 - consumer rights
 - infrastructure planning
 - hydrogen markets
 - access of renewable and low-carbon gases to the gas market and infrastructures
 - gas quality
 - security of supply

I. General questions on the review and possible revision of the Gas Directive and Gas Regulation

Costs for renewable energies have decreased significantly in the last ten years. In the relevant scenarios used by the Climate Target Plan Impact Assessment, biogas, renewable and low-carbon hydrogen and synthetic fuels would represent two-thirds of the gaseous fuels in the 2050 energy mix, with fossil gas used in combination with CCU/S representing the remainder. The areas where renewable and low-carbon gaseous fuels are expected to come into play include today's industrial sectors (e.g., refineries, fertilisers, steel making, glass, ceramics) and certain heavy duty transport sectors (ships, aviation, long distance heavy vehicles). They are also expected to continue serving the needs of the electricity system as flexible power production. The role of gas in heating depends on the competition with other technologies, including heat pumps. The process to decarbonise the gas supply and to shift demand for gases to most needed uses must start already now. Achieving the 2030 renewable, energy efficiency and greenhouse-gas reduction targets in time is an important step in this process.

1. What is your view on the role of gaseous fuels in 2030, in particular as regards hydrogen, biogas and biomethane?
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In a 1st stage, use renewable H₂ to decarbonise end uses that currently rely on unabated H₂ and have their own H₂ networks. It reduces investments needs associated to long-distance H₂ transport and enables the creation of local jobs and businesses. **In a 2nd stage**, use it to decarbonise hard-to-abate sectors where direct electrification is not cost-efficient or viable. As the most cost-efficient and versatile energy source, solar is primed to be a key driver for renewable H₂ before 2030.

2. Do you see a need to revise the Gas Directive and Gas Regulation to help to achieve decarbonisation objectives?

- Yes
 No

3. If, yes what should the main elements of the reform be? Which benefits do you expect?
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The revision must strengthen the provisions on consumer protection and market liberalisation, in line with the Electricity market design directive and regulation. It should prevent cross-subsidisation between renewable electricity and hydrogen users, enable the deployment of both centralised and decentralised renewable hydrogen systems, provide information on origin and quality of gas supply through GOs, and develop strict requirements for hydrogen certification and traceability.

4. How could the revised legislation support the aims of the Energy Efficiency Directive (2018/2002) and the Renewables Energy Directive (2018/2001/EU)?

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Promote direct electrification and deploy additional RES capacity to maximize **energy efficiency**. Direct electrification is 30-40% more energy efficient than H2, and RES electricity has the lowest primary energy factor. The revised legislation should restrict the use of renewable H2 and derived e-fuels where proven most efficient or technically feasible, compared to direct electrification. Renewable H2 should provide flexibility and storage, supporting the further integration of renewables.

5. Should the revised legislation, in addition to the instruments under the Fit for 55 package, in particular the Renewables Energy Directive and the Energy Efficiency Directive, include also measures that dis-incentivise the use of unabated fossil gases?

- Yes
- No

6. Should the revised legislation, in addition to the instruments under the Fit for 55 package, in particular the Renewables Energy Directive and the Energy Efficiency Directive, include also measures that incentivise the use of renewable and low carbon gases, for example via specific targets?

- Yes
- No

7. Do you expect that the technological and regulatory changes necessary to decarbonise the gas market have a potential to create new jobs by 2030?

- Yes
- On balance neutral
- No

8. What type of jobs will be created? What are the characteristics of jobs that are at risk of being discontinued? If applicable please identify the potential changes in the skills requirements, job quality and occupational safety of the gas market jobs.

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The renewable H2 sector will be most job-intensive compared to conventional H2 solutions, and is estimated provide 10,300 jobs per billion EUR invested, complemented by massive deployment of renewable electricity and corresponding in-direct jobs. The solar and wind sectors create around 1,500 jobs per TWh – that is more than nuclear, coal and gas industries. Solar could create 500.000 jobs in the EU by 2030, and is decentralised by nature, creating local jobs. Skilling programs will be needed.

9. Do you consider that investments in installations and infrastructure operating on fossil methane gas subject to the risk of stranded assets. If so can the revised legislation address this issue, and how?

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The future of gas and H2 systems is uncertain on demand, technology, competitiveness, imports, etc. The EU must take a step-by-step approach to avoid stranded assets. **First**, prioritize the development of power infrastructure for RES electricity, as primary energy source for H2 production; **second**, prioritize investments in repurposing existing gas and hydrogen infrastructure for renewable hydrogen, as converting gas networks to transport pure renewable hydrogen is a more cost-efficient option than building new pipelines.

II. Consumer's choice and renewable and low-carbon gases

...

Consumers should become well-informed and empowered as buyers. This could be achieved through clearer billing and advertising rules, trustworthy price comparison tools, the possibility to conclude contracts to buy specifically renewable or low carbon gas and by leveraging their significant bargaining power through collective schemes (such as collective switching and energy communities). Finally, consumers need to be free to generate and consume their own energy under fair and transparent conditions in order to save money, help the environment, and ensure security of supply.

10. Do you consider that the Gas Directive needs to be modified to ensure consumer protection and empowerment?

(multiple answers possible)

- Yes, it needs to be more ambitious to reflect the citizen/consumer focus of the Clean Energy Package for all Europeans and the Green Deal.
- Yes, and mirroring consumer protection and empowerment rights of electricity consumers conferred by the recast Electricity Directive and by 2018 Energy Efficiency Directive would be the most straightforward approach to do so.
- No, it strikes the right balance as it is.

11. If you answered 'yes' to the previous question, which provisions pertaining to consumer protection and empowerment should be prioritised in the revised Gas Directive?

(multiple answers possible)

- Provisions on protection of energy poor and vulnerable customers.
- Provisions on single points of contact for consumers for information on rights, gas consumption and costs, legislation and dispute settlement.

- Provisions on protection mechanisms to ensure efficient treatment of complaints through transparent, simple and inexpensive procedures and out-of-court dispute settlements.
- Provisions on supply contract information and modification.
- Provisions on accessibility to transparent information on share of renewable gas consumed, gas quality, applicable prices and tariffs and on standard terms and conditions.
- Provisions on frequency of billing and available payment methods.
- Provisions on cost of access to metering and billing information.
- Provisions related to switching suppliers (switching related fees, final closure account).
- Provisions on accessibility of consumption data.
- Provisions on smart installation of individual meters in multi-apartment or multi-purpose buildings.
- Provisions on intelligent and remotely metering systems and their costs.
- Provisions on protection against disconnection during winter.
- Other

12 Which of the following do you think would be appropriate in strengthening the rights and information of consumers in the gas market? (multiple answers possible)

- Consumer participation in demand response through aggregation contracts to sell or buy gases.
- Enabling the participation/the establishment of energy communities.
- Access to reliable online price comparison tools for improved switching rates.
- Introduction/deployment of smart metering systems for gases.
- Obligations to provide pro-active consumer information on switching possibilities, consumer rights etc.
- More consumption and billing information.
- Additional requirements (please explain further in next question).
- Enabling self-consumption for large customers using gas absorption heat pumps.
- Setting minimum requirements for billing information.
- Providing further billing information on breakdown of gas supply prices.
- Providing further information about historical consumption and energy sources.

Very Important Neutral Not very important Not important No opinion

and energy efficiency and decarbonisation?

18. The recast Electricity Directive clarifies the scope of Public Service Obligations which concern notably the price setting for the supply of electricity (see Art. 5) in the electricity market. In your view, should such provisions be introduced in the field of gas?

[Read here Article 5 of the recast Electricity Directive.](#)

- Yes
 No

III. Integrated infrastructure planning

Coordinated infrastructure planning across multiple energy carriers, types of infrastructure, and consumption sectors – is the cornerstone of an integrated energy system. In this spirit, the TEN-E Regulation requires that projects of common interest are to be included in national network development plans with highest priority. ... The requirements for national development plans of the Gas Directive and Gas Regulation are focused on preventing underinvestment that could result in less competition. These requirements correspond neither to the decarbonisation objectives nor to the planning requirements on European level. They also lack consistency between gases and electricity sectors.

19. How to ensure non-biased scenario building and planning?
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Adopt a holistic infrastructure planning **prioritizing electricity infrastructure**, integrating electricity storage and flexibility sources into both gas and electricity scenarios and cost-benefit analysis, to maximize energy savings, efficiency, and cost-cutting potential. **Maximize the use of digitalization and flexibility sources** that can support the grid integration of renewables. This allows for a reduction in electricity and hydrogen infrastructure investment needs.

20. Do you support an alignment of the national network planning with the European Network Development, for instance regarding frequency of the plans (i.e. timing of submission), time-frames and scenarios to consider?

- Yes
 No

21. Should the national network development plan be based on a joint scenario used for gases and electricity planning?

- Yes
- No

22. What actions are needed to ensure that national network development plans properly take into account the Energy Efficiency First Principle, meaning that energy efficiency alternative solutions must be first considered when national network development decision are made?
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The Energy System Integration Strategy states that applying the “energy efficiency first principle” across sectoral policies is at the core of system integration. This Package must incorporate the elements required for a coordinated planning and operation of the energy system, at EU and national level. The EEFP **should be applied to planning for hydrogen infrastructure.**

23. What is your position on establishing a single national network development plan for all energy carriers?

Statement	Completely agree	Agree	Neutral	Disagree	Completely disagree	No opinion
A single national network development plan can optimise infrastructure needs.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All regulated infrastructure should be part of a single national network development plan.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should the single national network development plan be binding?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no objective model to optimise network planning across different energy carriers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
It is better to keep separate network plans for each sector but based on a joint scenario.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Do you support requiring the setting up of national network development plans by all electricity and gas transmission system operators, irrespective of the unbundling model (i.e. also including ownership unbundled transmission system operators)?

- Yes

No

25. What role should distribution system operators have in relation to network planning?
(multiple answers possible)

- Provide information on expected supply and demand for the creation of a joint scenario for the national plan.
- Prepare their own distribution system network plan.
- Share information with transmission system operators for network planning purposes.
- Be allowed to conduct their own cross-sectoral optimisation.
- None of the above.

26. Should hydrogen transmission/distribution infrastructure be included in national network development plans?

- Yes
- No

27. What should the network development plan be used for?

(multiple answers possible)

- Provide transparency.
- Ensure a robust network to match supply and demand for different scenarios.
- Enable execution of investments.
- Regulatory prerequisite for cost acceptance in regulated network tariffs.
- Guarantee that infrastructure contained in the plan is built (binding plan).

28. Should the national network development plans provide information where new electricity production, consumers, storages or electrolysers reduce additional investment needs into the network?

(multiple answers possible)

- No, the selection of production, consumption and storage sites is not an activity system operators should be involved in.
- Yes, but only as information, without legal consequence.

- Yes, for hydrogen production.
- Yes, for electricity production (renewable and/or conventional).
- Yes, for electricity and/or hydrogen storage.
- Yes, for major consumption sites.
- Yes, to take into account externalities not necessarily perceived by market participants.

IV. Hydrogen infrastructure and a hydrogen market

Pure hydrogen, used today mainly as a feedstock, can be expected to be used as a fuel or as an energy carrier. Pure hydrogen may be transported via a network of dedicated pipelines that could consist of repurposed methane gas pipelines and/or newly built pipelines. Currently, infrastructure for the transport of pure hydrogen is not covered by the Gas Directive, as the gas system currently does not include network infrastructure dedicated to the transport of pure hydrogen.

The Commission's vision as set out in the EU's hydrogen strategy^[1] is that (low carbon and, preferably renewable) hydrogen will be used first in certain industrial applications (like refineries, steel production, fertiliser production, chemical complexes) and certain transportation modes (heavy duty road transportation, maritime) and that, progressively, an integrated market will emerge from initially disconnected hydrogen valleys. The hydrogen landscape is expected to evolve rapidly in the coming years, but its development is likely to differ in speed and scope per Member State. The present consultation seeks to collect views on regulatory measures that may be required to accompany the emergence of an EU hydrogen market over the next 10-15 years.

31. Which are in your view the main regulatory barriers to the development of a well-functioning cross-border hydrogen market and a cross-border hydrogen infrastructure within the EU?

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Fragmentation in control, certification and traceability must be avoided. Common terminology and unified GO/certification system are vital. More harmonised policies to stimulate the update of renewable H2 across EU (e.g. targets for renewable H2 in hard-to-abate sectors in RED III) are needed. Taxation rules and support schemes in EU countries should incentivise H2 with lowest environmental footprint and contributing to the renewable hydrogen and electrolyser roll-out objectives for 2024 and 2030.

32. Which are in your view the main regulatory barriers to the development of a cross-border hydrogen market and a cross-border hydrogen infrastructure with third countries?

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Europe must tap into its domestic renewable potential and use electrolyzers “Made in EU”. Developing a cross-border H2 market and infrastructure depends on availability in third countries. Access to electricity is an issue, with an average rate of only 40% in the African continent. Limiting EU dependence on energy and H2 imports is strategic in the medium term. Alignment with third countries is necessary for a consistent regulatory framework, information disclosure and certification system.

Section IV.1. Regulatory framework for pure hydrogen markets and pure hydrogen infrastructure

33. What regulatory model at EU level do you consider suitable to foster the emergence of a well-functioning and competitive hydrogen market and hydrogen infrastructure?

- No regulatory intervention is needed. Progress so far has been made without rules at EU level and competitive markets outcomes are likely to emerge without intervention.
- The creation of ‘competition for the market’ by tendering concessions at national level to own and operate hydrogen networks is a market model that can work for hydrogen. It will foster infrastructure development. Rules on the operation of the network are not needed.
- We need regulation to ensure “competition in the market”. A common approach is needed in which an EU legislative framework outlining key regulatory principles (such as neutrality of network operation, third party access, cost reflective and market compatible network tariffs, treatment of private networks) are set as networks can represent natural monopolies. The rules could be developed stepwise, e.g. the creation of more detailed EU-wide technical rules could be left to later, or Member States could be allowed to develop such rules earlier where needed.
- We need regulation to ensure “competition in the market”, already with a greater level of detail at EU level. The final market organisation should be specified now to prevent regulatory divergence between Member States and create investment certainty. Detailed rules (with implementing regulatory principles and technical rules) are needed at EU level from the start.
- Other approaches are needed/required to regulate the hydrogen network as the regulatory approach currently used in gas and electricity offers little guidance.

35. Although further development of hydrogen markets along the value chain seems highly likely, significant uncertainties remain. How should this uncertainty be taken account of in designing a ‘fit for purpose’ regulatory framework?

- Setting clear key regulatory principles for infrastructures will remove important uncertainties, while flexible rules do not. Precise rules are thus better than flexible ones.
- Setting main regulatory principles leaves enough flexibility for details to be set later or at Member State level. No specific provisions are required to allow for flexible application of main regulatory principles.

- Main regulatory principles are needed. However, flexibility needs to be built in, e.g. by allowing temporary exemptions/derogations from main regulatory principles.
- A dynamic regulatory approach should apply. Based on a periodic assessment of the market's maturity, it will be decided if regulatory intervention along pre-defined principles is needed. The benefits of such a flexible approach outweigh the costs of interventions with retroactive effect and regulatory uncertainty.

37. How important would you consider to define the following regulatory roles and principles early in order to facilitate the development of a dedicated hydrogen network and market framework towards 2030?

Role/regulatory principle	No opinion	Very important	Important	Neutral	Not very important	Not important
Role of existing network operators (TSOs/DSOs) in developing hydrogen infrastructure	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Role of private parties (non-TSO/DSO operators) in developing hydrogen infrastructure	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rules to ensure the neutrality of hydrogen network operations (i.e. unbundling)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Third Party Access to hydrogen infrastructure	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost-reflective, non-discriminatory network tariffs for hydrogen networks that are market compatible.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market rules on capacity allocation and congestion management at cross-border interconnection points in hydrogen networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market rules on balancing the injection of hydrogen in a network with the volumes taken off the network by a given network user	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Role/regulatory principle	No opinion	Very important	Important	Neutral	Not very important	Not important
Rules on cross-border operability of hydrogen networks.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rules on tariff setting for hydrogen networks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rules on the valuation of assets when they are repurposed and taken out of the regulated asset base of a gas-TSO	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section IV.3. Main principles for regulated hydrogen networks

42. Should (regulated) network operators (e.g. gas, electricity or hydrogen TSOs/DSOs) have a role in Power-to-gas installations (i.e. electrolyzers)?

- Network operators should never own or operate Power-to-gas installations. To avoid conflicts of interest and network foreclosure, system operators should be precluded from investing in and running power-to-gas installations (as is currently the case). Investment and management of power-to-gas installations should be market-based and open to competition among market players. Investment by regulated entities will discourage investments by market participants and create competition distortions.
- Network operators should never own or operate Power-to-gas installations. However, network operators should be encouraged to be involved in R&D and development projects that are related to energy grid operations (e.g. grid connection and grid services, like balancing provision). Network operators are well placed to assist in such projects and encouraging their active involvement will facilitate the integration of Power-to-gas installations where no rules exist and speed-up rule setting.
- Vertical unbundling remains the default option. Exemptions for network operators to own or operate Power-to-gas installations should only be allowed in clearly defined circumstances. For example, only if this is necessary to guarantee network operations and if no other market party is willing to carry out the investment. Clear and limited conditions should be defined (e.g. limitations in scope, scale and time), after it has been proven that the market is not willing to invest in such installations and foreseeing a procedure to transfer such installations back to a market-based regime once the derogation expires.
- There are no reasons to impose restrictions on network operators to operate or invest in power to gas installations or such choices can be left to Member States or National Regulatory Authorities.

44. Today's rules for gas network tariffs (see Art. 13 of the Gas Directive) seek to avoid cross-subsidies between network users but also to provide incentives for investments. In an emerging

hydrogen market, the transported hydrogen volumes as well as the customer base might be low initially. This could lead in certain cases to high initial hydrogen network tariffs for early users of a hydrogen network. Please indicate the appropriateness of the statements below in case incumbent methane gas network operators should be allowed to retrofit their assets for hydrogen transport:

Statement	No opinion	Completely agree	Agree	Neutral	Disagree	Completely disagree
Horizontal unbundling rules should ensure that hydrogen pipelines are being financed by hydrogen network users only and not by methane gas network users. Methane gas network users should not carry the costs and risks for a hydrogen network and non-TSO hydrogen operators should not suffer a competitive disadvantage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-subsidisation between users of the methane gas infrastructure and the hydrogen infrastructure should be allowed. This could lower the initial tariffs for the use of hydrogen networks and could facilitate the conversion of parts of the methane gas infrastructure into hydrogen infrastructure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-subsidies between methane and hydrogen network users should not be allowed. Other measures should be made available to lower initial hydrogen network tariffs (such as public grants or subsidies to network users or network operators).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

45. Do you think the current structure of cross-border gas transmission tariff system is suitable for the development of the hydrogen market (or other renewable and low carbon gases) in the EU?

Yes

- No, other ideas should be developed, for instance to avoid tariffs on cross-border points between EU Member States.

Please explain why

500 character(s) maximum

Tariffs need to evolve in the light of major future changes like decarbonisation, sector integration, gas demand, and transportation capacity, and become predictable for traders and TSOs. Most long-term contracts for gas transportation in Europe will expire in the next ten years, and the trend is to book shorter-term capacity products to pursue as much flexibility as possible. Tariffs for electrolyzers must send the right signal to produce when is more beneficial to balance the system.

Section IV.5. Consumer rights for users of pure hydrogen

53. The Commission expects as set out in the EU hydrogen strategy [1] that renewable and low carbon hydrogen will be used first in certain industrial applications (like refineries, steel production, fertiliser productions, chemical complexes) and certain transportation modes (heavy duty road transportation, maritime). In view of these typical end-users that may adopt hydrogen by 2030, what rights and protection rules for users connected to a pure hydrogen network may be needed?

- Other than network access rights, little needs to be done in terms of customers rights. These typical end-users do not need specific consumer rights and protection.
- It is important that these typical users of a hydrogen network have the same rights as if they would be connected to the methane gas grid. Having the same consumer rights and protection ensures a level playing field between energy carriers.
- It is important that consumer rights and protection rules for all consumers connected to a hydrogen grid are fully aligned with those for consumers of connected to the methane grid, regardless as to whether they are likely to use hydrogen or not or their size (i.e. households).

54. What consumers rights and protection rules will need to be clarified already now for users receiving pure hydrogen from dedicated hydrogen networks?

Consumers rights and protection rules	No opinion	Very important	Important	Neutral	Not very important	Not important
Access to consumption data	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on billing	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on quality of H2 supplied	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Consumers rights and protection rules	No opinion	Very important	Important	Neutral	Not very important	Not important
Information on CO² content of hydrogen along its life-cycle [4] [Including emissions determined from hydrogen transport, distribution, liquefaction and storage].	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on rights to switch supplier	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information about dispute settlement mechanisms	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section IV.6. Quality standards for pure hydrogen and its governance

55. Different hydrogen production methods produce hydrogen of different purity and different end-uses require specific purity levels[4]. To ensure the cross-border flow of pure hydrogen from production to consumption centres and to ensure the interoperability of the connected, neighbouring markets, common quality standards or cross-border operational rules may be necessary. In your view, at what level should such binding hydrogen quality (purity) standard be established?

- At Member State level (i.e. maintaining potential differences between Member States).
- At Member State level with EU-level cross-border coordination rules (i.e. allowing for coordination between Member States).
- At EU-level, setting common standards for hydrogen quality across the EU.
- No common rules on hydrogen quality standard are necessary before 2030.

56. In a cross-border dedicated hydrogen network, adapting the quality of hydrogen for specific end uses (purification) might become an important task (including the measurement and monitoring of hydrogen quality). In your view, what would be the most efficient and appropriate way to establish the necessary rules on roles, responsibilities and cost-allocation for the management of hydrogen quality?

- Member State level regulatory framework (i.e. with potentially very different regimes per Member State).
- EU-level principles providing for a common overall approach in the Member States.
- EU-level principles providing for a common approach combined with regional implementation.

- EU-level rules ensuring a harmonised approach across the EU.
- No common rules are necessary before 2030.

Section IV.7. Hydrogen storage and hydrogen import from outside the European Union

57. Do you see the need to develop larger-scale, dedicated hydrogen storage facilities in the EU in light of the increased use of hydrogen in the EU?

- Yes
- No

58. Do you think that regulation of hydrogen storage would be necessary?

- Yes, to the same degree as for methane storage (leaving Member States the choice of negotiated or regulated third party access).
- Yes, but it should not be directly available to the market itself and should only be used by the operators for network operation purposes.
- No, hydrogen storage facilities can be left unregulated.

59. Hydrogen is likely to be produced inside the EU at the same time imports from outside the EU may be possible and competitive for the supply of hydrogen.

- I disagree, imports will not take place before 2030 and therefore there is no need to look into relevant infrastructure.
- Whilst imports may still be modest by 2030, they will require the necessary infrastructure and reflection on appropriate measures should start now.
- It is important that import infrastructure is in place by 2030.

V. Access of renewable and low carbon gases to the existing methane gas networks and markets, including LNG terminals and gas storages

... Synthetic methane has the potential to support the decarbonisation of gas as well. It is produced by adding CO₂ captured during the upgrading of biogas to biomethane, from industrial processes, or eventually directly from the air to renewable or low carbon hydrogen.

Biomethane and synthetic methane injected at distribution level may face barriers preventing it from being traded on the EU's wholesale markets to the same degree as methane gas. Similar difficulties may be encountered by hydrogen when blended into the existing gas grid.

65. Do you consider it important to adapt the Gas Directive and Gas Regulation to facilitate injection biomethane and synthetic methane into the existing methane gas grid?

Yes No

66. Do you consider it important to adapt the Gas Directive and Gas Regulation to the needs of hydrogen to be injected into the existing gas grid?

Yes No

67. How do you rate the measures below? (one answer per question)

Measure	No opinion	Very important	Important	Neutral	Not very important	Not important
Adapt tasks and responsibilities of national regulatory authorities to oblige them to facilitate the process of decarbonisation of gas when taking decisions (e.g. as regards development of infrastructure).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve the coordination between transmission and distribution system operators to facilitate the process of decarbonisation of gas.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure access to the transmission level and to the EU's wholesale market of renewable and low-carbon gases produced at distribution level.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrate the distribution system operator level into the entry-exit system with the same balancing regime that is applicable to the transmission system operator.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extending the model of energy communities of the Electricity Directive to the gas market to consume	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Measure	No opinion	Very important	Important	Neutral	Not very important	Not important
volumes of biogas, biomethane or hydrogen not injected to the interconnected grid.						
Obliging operators to ensure connection for new renewable gases facilities i.e. priority connection and dispatch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Reducing network tariffs for injection of renewable gases to the grid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Limit tariffs to efficient network operations, not supporting other policy objectives.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make the short-term capacity products for methane pipeline and storage infrastructure more attractive to better reflect the interdependency with electricity and compatibility with the support schemes for renewable and low-carbon gases.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abolish special treatment of fossil methane long-term contracts e.g. abolish derogations for take-or-pay clauses.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System operators should be obliged to explore the opportunities for improving the energy efficiency of the system (i.e. eliminate leaks, recovering energy from pressure drops between high, medium and low pressure grids, optimise heat management including cold recovery from pressure decrease).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

75. Do you think the Gas Directive and Gas Regulation should be revised to encourage and promote the role of storage for use of renewable and low-carbon gases by introducing transparency measures such as coordination of development plans, market tests?

- Yes
- No

76. The blending of hydrogen and other renewable or low carbon gases into the existing methane gas grid requires a consideration of its contribution to the decarbonisation of the energy system as well as its economic and technical implications (see specific questions on technical implications in section on gas quality). Please indicate the appropriateness of the statements below with regard to blending

Statement	Completely disagree	Completely agree	Agree	Neutral	Disagree
Blending provides a cost efficient and fast first step to energy system decarbonisation. It will facilitate the offtake of hydrogen and other renewable and low carbon gases by using existing methane gas infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Blending prevents the direct use of pure hydrogen in applications where its value in terms of GHG-emission reductions is higher, such as industry and transport.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blending creates technical constraints and additional costs at injection and end-use appliances which makes it a less cost-efficient option for decarbonisation.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

VI. Gas Quality

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The issue of gas quality is becoming more pressing with the effort to decarbonise the EU's energy sector, as this will require the injection of growing volumes of renewable and low-carbon gases into the existing gas transmission and distribution networks. The quality

parameters of gas consumed and transported in Europe will change, leading to more frequent quality fluctuations to a much larger extent than is the case today. This will affect the design of methane gas infrastructure and end-user applications, as well as industrial processes using gases as feedstock. However, the existing regulatory framework was not designed to cater for such developments [11].

VIII. Security of supply dimensions

With the adoption of the Security of Gas Supply Regulation[14], the framework for the security of gas supply in the EU has developed significantly over the past years. Other EU initiatives such as the protection of critical energy infrastructure and cybersecurity were added to the energy security and safety framework. The revision of the Gas Directive and the Gas Regulation needs to take into account this evolution. At the same time, the upcoming revision and the clean energy transition might imply amendments to these other pieces of EU acquis applicable in the sector of gases.

92. How do you see the security of supply challenge in the context of the decarbonisation of the supply of gases in the EU in line with the climate-neutrality objectives?

- Security of supply will not be an issue when renewable and low-carbon gases will be used in the EU.
- Security of gas supply will still be an important challenge that needs to be taken into account in the context of increased use of renewable and low-carbon gases in the EU.
- New security issues should be taken into account.

93. In case you consider that new security issues should be taken into account please explain which
500 character(s) maximum

Guarantees to avoid any renewable hydrogen shortfall should be provided. Security aspects on storage and transmission infrastructure should be reinforced, such as explosive risks and disruption of supply along any point of the power and gas networks. It should be guaranteed that no single exporter country (within or outside Europe) would have sustained bargaining power over other Member State or over Europe.

98. Do you think that energy-specific measures should be introduced to improve the resilience of critical gas infrastructure, including renewable and low-carbon gases?

- Yes
- No

* If Yes, please explain (*mandatory field*)
500 character(s) maximum

Resilience of critical gas infrastructure needs to be secured, it needs to be studied whether there are new risks with the upcoming changes, and they should be addressed. In terms of storage, we should have the capacity to provide a continuous supply by establishing a minimum level of the storage.