

# EC consultation on Hydrogen and Decarbonisation of Gas Markets Package

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A Eurelectric response paper

June 2021

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

### We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

**investing** in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

**transforming** the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

**accelerating** the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

**embedding** sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

**innovating** to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Dépôt légal: D/2021/12.105/29

# Public consultation on Hydrogen and Decarbonisation of Gas Markets Package

## EXECUTIVE SUMMARY

- **Electrification is key to achieve carbon neutrality** and should be the first choice when preparing the “Fit for 55” Package for the EU to meet the 55% GHG 2030 target as well as when unfolding the Energy System Integration Strategy.
- **Revising the Gas Directive & Regulation will adapt the regulatory framework to the changing role of the gas system in a carbon neutral Europe.** The irreversible decline of fossil fuels such as natural gas in the EU energy mix, needed to reach the European climate objectives, requires further direct electrification. Where this is neither feasible nor efficient, other energy carriers can be used, including renewable and low-carbon gases.
- **The European Power Sector supports an integrated approach for a decarbonised energy system.** When it is not yet technically possible to efficiently use a solution that can be plugged into the power system, indirect electrification will play its decarbonisation role. Electrons can be transformed into molecules to decarbonise end-uses and processes that are difficult to electrify directly. This is the case for hydrogen produced by carbon-free electricity via electrolysis. Guarantees of Origins can help to keep track on the decarbonisation level of vectors used.
- **The Fit-for-55 Package, which includes the revision of EU gas rules, will foster the use of energy carriers, services and infrastructure that contributes to a sustainable, cost-effective and just decarbonisation path.** In consideration of the different starting points between European countries and the evolving role of natural gas in the coming years, the revision of the gas regulatory framework should continue to support a competitive European energy market to deliver on the other Energy Union’s objectives: energy security, internal energy market, energy efficiency, research, innovation and competitiveness. Our Decarbonisation Pathway Study foresees that the fossil energy supply will be gradually phased out and represent only ~5% of total energy supply by 2045. Moreover, gas will still account up to ~15% of total installed electricity generation capacity in order to secure system reliability, especially in regions that don’t have access to hydro or nuclear, depending on national specificities and the changes in their generation mix.

- **The Hydrogen and Decarbonised Gas Markets Package should be aligned with the objectives of the Energy System Integration & Hydrogen Strategies** and prepare the gas sector for deep decarbonisation, in line with the EU Green Deal. The new regulatory environment to be built should ensure that the right tools and pieces of legislation enable a seamless transition without conflicting incentives or targets. We also call to develop a clear classification and sound definitions of renewable & low-carbon gases, including power-to-gas fuels, taking into account the GHG emissions relative to their full lifecycle.
- **A robust regulatory framework is needed, ensuring market-based deployment and operation of renewable & low-carbon gases.** Eurelectric does not support the introduction of objectives or quotas for renewable and low-carbon gases penetration but encourages the facilitation of their penetration to reach full decarbonisation of the gas system. A combination of well-designed markets will ensure non-discriminatory participation by all competing technologies and give the right economics signals, considering the positive or negative externalities. Should a market failure be identified, any intervention should counteract its negative effects, aiming to preserve technology neutrality and a level-playing field. This will be of a paramount importance while technology evolution is occurring within an increasingly integrated energy system and provide new options to customers.
- **Gas customers' protection and empowerment rules should mirror the provisions for electricity consumers as conferred by the Clean Energy Package** and adjusted appropriately to the terms specific for gas market actors. It is particularly important to guarantee the same level of protection among energy customers. It will strengthen trust in gas markets and awareness of free choice of supplier for all gas customers.
- **Upgraded grids will be essential to support the integration of renewable and low-carbon energy carriers in all sectors of the economy,** framed within the context of sector integration and optimisation of interlinked energy systems. Eurelectric supports an alignment of national network planning with the European Network Development, based on joint scenarios that include gases and electricity projections consistently with the energy efficiency-first principle. A broad range of scenarios should be considered in the context of any future policy formulation around the connectiveness and diversity of an individual member states energy systems and the role that hydrogen will play. Any investment in networks should be based upon a Cost Benefits Analysis evaluating every option and the evolution of the demand.
- **Detailed & system-wide impact assessment and study, in conjunction with gas-fuelled power plants and their respective OEM's, are needed to assess the impacts of gas quality changes.** Changes in gas quality characteristics can result in impacted performances of gas-fuelled power plants which in turn could create a security of electricity supply risk for a Member State. Given the potential impact of gas quality changes, detailed assessment should be overseen by national regulators in conjunction with gas-fuelled power plants and their respective OEM's to understand the impacts in full before any changes are finalised to ensure risks are minimized.
- **Efficient smart sector integration at a local/regional level between electricity, gases, heat, and transport is necessary where fully electrified solutions are not possible.** The energy transition is not orchestrated solely by top-down measures, but in parallel with

structured bottom-up measures through integrated energy systems. DSOs are the natural proactive enablers of integrated energy systems. Developing planning capacities within this future integrated energy system will be pivotal. Benefits will result from optimised infrastructure planning and development, and efficiency gains from competition between different energy carriers.

- **A regulatory framework for the nascent hydrogen market is essential.** While leaving the non-urgent technical rules for later development, the same criteria and principles should apply to both hydrogen and gas markets, including technology neutrality, third party access to regulated infrastructures and access to the retail market to all end-users. This would allow similar regulation for other gases and ensure a level playing field. It would also set clear rules and provide the appropriate protection for a new emerging natural monopoly as well as security for the necessary investment. Moreover, future hydrogen storage development should be open to market mechanisms, reflecting the same regulatory framework applied to methane storage for large-scale storage units.
- **In a more interconnected energy system, cautious considerations towards the potential of hydrogen blending are necessary.** Eurelectric is currently assessing the pros and cons of the different scenarios for the delivery of Hydrogen, considering the evidence currently available on their effectiveness for the decarbonisation of the economy. One of the scenarios include the temporary blending of hydrogen with methane gas into the existing grid, which requires further assessment on the supply and demand of renewable & low-carbon hydrogen, as well as its impact in terms of greenhouse gas emissions. On the challenging question of blending/deblending, a harmonious EU-wide approach is hardly possible due to the specific features (existing and future) of the national networks and decarbonisation strategies. Moreover, hydrogen grids initially arise at a local level (i.e. in a decentralised manner connecting Hydrogen Valleys). While the priority (in the short to medium term) should be to support growing direct electrification, we also need to leverage from the existing flexibilities available between existing power and gas systems, prior to blending or to the launch the large deployment of a dedicated hydrogen network. In the long run, the (national) markets should decide which option is the best to transport hydrogen from production to consumption points, considering sustainability requirements, the need to avoid the fragmentation of the internal gas market, and the necessity of a coordinated planning of an integrated energy system that optimises it as a whole.

# Open Public Consultation on the Hydrogen and Gas Market Decarbonisation Package

Fields marked with \* are mandatory.

## Introduction

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The European Green Deal establishes a roadmap for cutting greenhouse gas emissions, fighting biodiversity loss and tackling pollution, while boosting a modern, resource-efficient economy and creating jobs. Energy policy is a central pillar in the European Green Deal and in the decarbonisation of the European economy. Energy instruments are needed to achieve climate targets in a cost-effective manner, to the benefit of EU customers. These include measures already outlined in the relevant initiatives adopted under the European Green Deal. Specifically, the Energy System Integration Strategy and the Hydrogen Strategy adopted on 8 July 2020 set out how the energy markets could contribute to achieving the goals of the European Green Deal, including the decarbonisation of the production and consumption of hydrogen and methane.

This consultation aims to collect views and suggestions from stakeholders and citizens related to a possible proposal for a revision of the Gas Directive (2009/73/EC) and Gas Regulation ((EC) No 715/2009). This review is planned for Q4 2021.

The possible need for legislative changes relates primarily to cost-efficient decarbonisation of the existing gas sector by (i) enabling a market for renewable and low carbon hydrogen allowing it to become a key component of the energy sector, and (ii) 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.

Moreover certain renewable gases 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 scope of the off-grid production compared to production connected to a network depends inter alia on technological developments and market uptake.

While preparing for and incentivising the transition to renewable and low carbon gases, legislative changes may also contribute to a better and more consumer friendly functioning of the gas market, taking into account rapid technological developments and the principles introduced in the recent electricity market design proposals.

To organise the transition from fossil to carbon free fuels and to achieve a climate-neutral Europe by 2050, the Commission will table a Fit for 55 package to reduce greenhouse gas emissions by at least 55% by 2030. This will cover wide-ranging policy areas – from energy efficiency to renewables, energy performance of buildings, as well as land use, energy taxation, effort sharing and emissions trading. The on-going reviews of the Renewable Energy Directive ((EU) 2018/2001) and the Energy Efficiency Directive ((EU)

2018/2002) are addressing, among other things, issues of regulatory incentives for production or consumption of renewable energy. The gas market legislation is part of the Fit for 55 package will need to be consistent with measures under both Directives as well as other measures under the package.

In the Commission's view, in order to deliver the 2030 and 2050 targets, an integrated planning and operation of the energy system as a whole, across multiple energy markets, carriers, infrastructure types, and consumption sectors is necessary.

Households and industrial consumers are at the centre of an integrated energy system. Consumers should be able to choose among the available and accessible renewable and low-carbon technologies that best serve their needs in terms of reliability, resource efficiency and cost. Competitive energy markets are a key tool to achieve the targets of the Green Deal in a cost-efficient manner and to stimulate the significant investments. Putting all technologies into competition, in particular smart electrification, demand response, energy efficiency, and renewable and low-carbon gases like hydrogen and bio methane, or Carbon Capture and Usage/Storage (CCU/S) technologies, will serve customers and empower them to make choices which, in turn, help to achieve decarbonisation targets in a cost efficient way. As such efficiencies and active consumer participation are facilitated, an integrated energy system must be effective and reliable in providing vulnerable and energy poor consumers with a high level of protection.

Direct electrification is in most cases the most cost-effective and energy-efficient way to decarbonise final energy demand. Electrification coupled with increased contribution from renewables, energy efficiency and applying circular economy will thus deliver a substantial part of the emission reductions across the energy system. In certain areas, where a decarbonisation of the current use of gaseous fuels through full electrification is unlikely to be technically or economically viable, gaseous fuels are likely to remain present in the EU's energy system.

The answers to this questionnaire will feed into the review process of the Gas Directive and Gas Regulation, in particular into the impact assessment that the Commission will carry out to assess whether a revision is needed and, if yes, what revision would be the most appropriate.

In the context of developing this initiative, the Commission will conduct an evaluation of the relevant gas market rules. The evaluation will assess the current effectiveness, efficiency, relevance, coherence and the added-value of action at EU level of the Gas Directive and Gas Regulation, in particular in reaching the EU decarbonisation targets.

The combined evaluation roadmap has been consulted previously and is available here:

<https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12766-Revision-of-EU-rules-on-Gas>

**The questions are divided into eight sections:** questions about the identity of respondents, general questions on revising the Gas Directive and Gas Regulation and 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, and security of supply.

**If you do not have an opinion on a question, do not reply.**

**NB:** There is a session timeout for the submission of your contribution after **60 minutes**; this is an automatic security feature. In order to avoid any loss of data, do not forget to use the "Save as Draft" option on the top right side of your screen before the 60 minutes expire. You can subsequently resume work on your contribution, and submit once completed.

Please note that this questionnaire will be available in all EU-languages in the coming weeks.

## About you

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\* I am giving my contribution as

- Academic/research institution
- Business association
- Company/business organisation
- Consumer organisation
- EU citizen
- Environmental organisation
- Non-EU citizen
- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

\* First name

Ronan

\* Surname

HAAS

\* Email (this won't be published)

rhaas@eurelectric.org

\* Organisation name

*255 character(s) maximum*

Eurelectric

\* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

## Transparency register number

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Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

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### \* Country of origin

Please add your country of origin, or that of your organisation.

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- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
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- Bulgaria
- Burkina Faso
- Burundi
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- Georgia
- Germany
- Ghana
- Gibraltar
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- Grenada
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- Northern Mariana Islands
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- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
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- Sri Lanka
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- Syria
- Taiwan
- Tajikistan
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- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago

- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
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- Israel
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- Jamaica
- Japan
- Jersey
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
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- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
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- Russia
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- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen

- Czechia
- Lebanon
- Saint Helena  
Ascension and  
Tristan da  
Cunha
- Zambia
- Democratic  
Republic of the  
Congo
- Lesotho
- Saint Kitts and  
Nevis
- Zimbabwe
- Denmark
- Liberia
- Saint Lucia

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. **For the purpose of transparency, the type of respondent (for example, ‘business association, ‘consumer association’, ‘EU citizen’) country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published.** Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected

#### \* Contribution publication privacy settings

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#### \* Language of my contribution

- Bulgarian
- Croatian

- Czech
- Danish
- Dutch
- English
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- Finnish
- French
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## I. General questions on the review and possible revision of the Gas Directive a n d                                      G a s                                      R e g u l a t i o n

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 allready 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?

*500 character(s) maximum*

Reaching the EU climate's objectives primarily requires further direct electrification and, where not feasible or efficient, the deployment of other energy carriers such as renewable & low-carbon (R&LC) gases as a complement. While decarbonised molecules will be first used where electrification is not feasible or as a feedstock for some industrial processes, the gas system can also provide additional flexibility solutions when /where efficient for the energy system and therefore contribute to SoS

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?

*500 character(s) maximum*

Align the H2 and gas regulatory frameworks with the objectives of the Green Deal; Enable an efficient integration of R&LC gases into the market, on both commodity & infrastructure sides; Gradually develop a H2 market based on key market & regulatory principles and cost-effective scenarios; Enable fossil-free H2 production via electrolysis; Ensure transparency on the different types of gases supplied to customers; Enable system integration of electricity, gas/hydrogen, heat at a local level.

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

*500 character(s) maximum*

A coordinated intervention on different texts covering the elements of the decarbonisation process should be implemented to support the integration of RES and implement the energy-efficiency-first principle. A GO system for RES gases within RED II could be complemented, within the revised gas framework, by a system disclosing to customers the origins of the non-RES gas consumed. Infrastructure planning should be based on a long-term no regret approach.

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.

*500 character(s) maximum*

New jobs can be created in sectors such as energy, agriculture, transport and industry. Reducing the dependence from fossil gas will enhance the domestic production of R&LC gases, smart grids and support the EU industrial and technological leadership. Moreover, the entire R&LC gases value chain will require research and innovation programmes, operation and maintenance. Fostering research institutes, knowledgeable scientists, talent and skilled staff will be crucial.

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?

*500 character(s) maximum*

Avoiding stranded assets should not be a legitimate policy objective and require a system-wide view. Gas regulation should (i) enable, when and where efficient, a gradual increase of R&LC gases penetration, (ii) remove undue regulatory barriers to trade any gases, while respecting gas quality standards and (iii) ensure that, in case measures are taken, they do not distort competition, create cross-subsidies or obstacles to the development of other infrastructures.

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

Recognising that citizens must be at the core of the Energy Union and the European Green Deal, clear and easily accessible information is essential to enable citizens to change energy consumption patterns, switch to solutions offered by an integrated energy system, and whenever applicable, switch supplier. Today's consumers are not always made aware of the origin of gases they consume and their climate impacts. To that effect, the certification of renewable and low-carbon gases is envisaged in the context of the upcoming

revision of the Renewable Energy Directive (EU) 2018/2001. Recent changes to market rules for electricity have established a comprehensive framework for consumer protection and empowerment (see articles 4, 5, 9-19, 22-29, and Annexes I and II of recast Electricity Directive (EU) 2019/944) in the sector.

While technical and economic conditions in gas markets may differ from electricity markets, updating the legislative framework for gases could ensure an equal level of protection and empowerment for electricity and consumers of gaseous fuels, and increase certainty for market actors. This revision could establish the tools to empower consumers to actively take part in the energy transition while enjoying high level of consumer protection, and ensure that they fully benefit from their contributions to the decarbonisation process. This gives also an opportunity to complement existing legislation addressing the challenges related to vulnerable households and energy poverty.

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.
- Providing information on the nature of gas supply i.e. fossil, renewable, low carbon.
- Other

13. Please specify and/or explain your choice for the three previous questions.

*500 character(s) maximum*

It is important to guarantee the same level of protection and empowerment to all consumers in both electricity and gas. Therefore, the Gas Directive should be aligned to the provisions introduced by the Electricity Directive which are equally relevant to gas, if technically feasible, including self-consumption of gas. For suppliers of both, electricity and gas, this prevents different sets of rules for similar activities.

14. Whether for residential or commercial purposes, consumers may bundle their utilities with a single energy provider. The idea of bundling is based on combining several services in one package. As regards households, some utility companies can provide electricity, gases and heating offers in a single deal. How do you think transparency and the flexibility of such bundled electricity, gases and heating offers could be further improved to benefit consumers?

*500 character(s) maximum*

While avoiding strong constraints, bundling products (BP) can be a simple & cost-effective option for consumers, provided that the terms & conditions are transparent and include a clear assignment of roles & responsibilities. These conditions are already ensured by the existing horizontal and energy specific legislation. Additional rules bear the risk of creating regulatory obstacles for offering BP or administrative effort for suppliers but should, in any case, be duly included in BP.

15. To what extent has current EU legal framework on gas been effective:

for vulnerable consumers in:

	<b>Highly effective</b>	<b>Effective</b>	<b>Moderately effective</b>	<b>Somewhat ineffective</b>	<b>Not effective</b>	<b>No opinion</b>
ensuring a fair protection against disconnections?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for customer empowerment in:

	Highly effective	Effective	Moderately effective	Somewhat ineffective	Not effective	No opinion
contributing to decarbonisation i.e. choose the most affordable sustainable energy source?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
contributing to the achievement of the EU internal energy market (i.e. choose the preferred supplier irrespective of their place of residence)?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
stimulating the availability of comparison tools?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
protecting consumers from aggressive marketing practice?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
stimulating <i>green offers</i> ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
stimulating diversity in the choice of payment methods?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
setting clear deadlines for dealing with requests to switch supplier?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
establishing unique contact points for consumers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for information about dispute settlement mechanisms in:

	<b>Highly effective</b>	<b>Effective</b>	<b>Moderately effective</b>	<b>Somewhat ineffective</b>	<b>Not effective</b>	<b>No opinion</b>
establishing conditions to exercise the right of withdrawal?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
accessing to speedy and effective complaint handling procedures?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
providing available out-of-court procedures?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for right to information in:

	<b>Highly effective</b>	<b>Effective</b>	<b>Moderately effective</b>	<b>Somewhat ineffective</b>	<b>Not effective</b>	<b>No opinion</b>
spreading the practice of clear description of the service/product?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
spreading the practice of offers presented in a clear, consistent and simple manner?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
spreading the practice of clearly presenting key information about prices, discounts, termination fees?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for access to consumption data in:

	<b>Highly effective</b>	<b>Effective</b>	<b>Moderately effective</b>	<b>Somewhat ineffective</b>	<b>Not effective</b>	<b>No opinion</b>
ensuring access to consumption data shortly after consumption?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
boosting consumer confidence in the market?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ensuring transparency and fairness of contractual conditions?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
preventing unilateral change of contractual conditions by the supplier?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for right to accurate information on billing and switching in:

	Highly effective	Effective	Moderately effective	Somewhat ineffective	Not effective	No opinion
providing price increase notifications?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
stimulating transparent bundled offers to consumers?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
discouraging surcharges in the payment methods?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ensuring a smooth and fast switching process?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
preventing termination fee or penalty for switching?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Do you see the price of residential gaseous fuel products as an important element in affordability? Do you see an energy poverty challenge in households' access to gaseous fuel products in the future?

*500 character(s) maximum*

Competitive, liquid markets are the most-effective way to ensure most affordable prices. The risk of higher gas access tariffs due to low utilisation of infrastructure must be tackled by MS without distorting competition between energy carriers, creating cross-subsidies or obstacles for the efficient development of other infrastructures. Problems with the affordability of residential gaseous fuel products require welfare state solutions (social policy) to avoid market & competition distortion.

17. In your view, how important are price signals to consumers in the gas market?

	Very important	Important	Neutral	Not very important	Not important	No opinion
Would consumers benefit from price signals?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would price signals drive system integration and energy efficiency and decarbonisation?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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?

- 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 Commission proposal

<https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12382-Revision-of-the-guidelines-for-trans-European-Energy-infrastructure>

envisages provisions for cross-sectoral infrastructure planning. Hydrogen infrastructure is included as a new infrastructure category and used for the network development plan on European level. 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?

*500 character(s) maximum*

The scenarios building & planning exercise should be aligned with the EU targets and NECPs. This should be done transparently by systems operators (with greater role for DSOs), applying guidelines defined by the regulator and pursuing an integrated approach considering the EEF principle, a high level of SoS and connection of new customers. It should prioritise the most efficient solutions in the longer-term for the system needs identified, taking into account non-infrastructure solutions.

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?

*500 character(s) maximum*

National demand & supply projections should assume that end-users will adopt the most technically, economically and environmentally sound energy efficiency measures. They should consider an efficient mix of centralised/decentralised resources, with all sources of flexibility allowed to compete, and national specificities of neighboring countries. Scenarios shouldn't integrate undue administrative barriers (e.g., assume that existing inefficient networks congestion can be effectively removed).

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 type="radio"/>	<input type="radio"/>	<input checked="" 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 type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should the single national network development plan be binding?	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 checked="" type="radio"/>	<input 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.

29. [question available only if “yes” to one of the bullets under 30]: If you answered yes, how should this be achieved?

- By selecting indicative areas which are particularly suitable from an energy network perspective for the given type of production/storage/major consumption site, as an information only.
- By defining areas where sufficient connection capacity to the energy networks for such sites can be guaranteed.
- By establishing that this type of site may only be connected in the indicated areas.
- By establishing areas in which lower network tariffs for the use of the respective sites, and/or connection charges can be expected, based on the tariffs approved/decided by the national regulatory authority.
- By indicating in which areas system operators expect to make offers for the purchase of system services which could typically be provided by the given type of site.
- By using connection in designated areas as a prerequisite for eligibility in support schemes.
- Other

30. If you consider that, in question 29, other approaches are required, please explain what approach is needed and why?

*500 character(s) maximum*

#### 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<sup>[1]</sup> 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.

[1] [https://ec.europa.eu/energy/sites/ener/files/hydrogen\\_strategy.pdf](https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf)

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?

*500 character(s) maximum*

[1] Lack of clear product definition for customers. [2] Unclear state aid framework. [3] Technical constraints, that require a cautious approach to infrastructure planning and access. [4] The suggested additionality criterion for RES H2 that requires additional work to avoid hindering the use of existing RES power. [5] Risk of double charging/taxation for P2G products. [6] Cost of GHG emissions not internalised for all carriers / end-uses. [7] Free EUAs for SMR-H2 in carbon leakage sectors.

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?

*500 character(s) maximum*

Adding to Q° 31, tracking, verification and consumer disclosure of R&LC hydrogen is key. Imported H2 should respect the same criteria requested for European production and the GHG footprint should serve to much-needed CBAM. Moreover, the EU H2 Strategy includes the objective of developing an EU based H2 industrial value chain. Therefore, the EU should avoid being excessively reliant on H2 imports given that the H2 can be obtained from renewable sources within the UE in a cost-efficient way.

#### **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.

34. If you consider that other approaches are needed/required, please explain what approach is needed and why.

*500 character(s) maximum*

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 type="radio"/>	<input checked="" 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 checked="" type="radio"/>	<input 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 checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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 type="radio"/>	<input checked="" 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.2. Regulated versus non-regulated hydrogen networks

38. With the imminent phase out of low-calorific methane gas (L-gas) and the demand for methane gas expected to decline after 2030, parts of the existing pan-European gas infrastructure could be repurposed to provide for the necessary infrastructure for large-scale cross-border transport of hydrogen. Should existing methane gas network operators be allowed to own, operate and invest in hydrogen networks?

- Yes, the current gas network operators (TSOs/DSOs) should have a prominent role. The current gas market model could serve as a model for future hydrogen markets.
- Yes, but a parallel pathway for non-regulated infrastructure investments by private parties should exist.
- No, a hydrogen network will need to be regulated, but the current gas network operators (TSOs/DSOs) should not have a prominent role.
- No, hydrogen networks should be left unregulated. “Competition for the market” can work.

39. How should **existing private** hydrogen pipelines (pipelines directly connecting hydrogen supply and demand whilst not being part of a meshed, interconnected network) be regulated?

- Existing private networks should be left unregulated. This is a pathway for infrastructure development in parallel to a regulated system.
- Existing private network operators should be left unregulated but able to unilaterally choose to ‘opt-in’ into an existing regulated system.
- Existing private networks can be exempted (under NRA supervision) from regulatory requirements (such as unbundling and third party access) but a sunset date needs to be set (e.g. once supply contracts expire, once it is integrated in a other, already regulated hydrogen network or by conducting regular market tests to verify market interest in accessing the pipeline).
- No special treatment for existing private infrastructure. Main regulatory principles should apply to all networks as of the moment of their introduction.

40. Should **future private** investments in hydrogen pipelines be regulated?

- Future private networks should be left unregulated. This is a pathway for infrastructure development in parallel to a regulated system.
-

The default rule for future networks should be that they are regulated.

Exemptions for private investment from certain provisions (e.g. unbundling, third party access, tariff regulation) can be considered provided conditions are met (akin to Article 36 of the current Gas Directive).

- Private investments should be allowed and exemptions for private investors to stimulate them should be considered. However, day-to-day operations of private networks could be left to other bodies, e.g. an Independent System Operator (ISO).
- No special treatment for future private infrastructure. Main regulatory principles should apply to all networks.

### **Section IV.3. Main principles for regulated hydrogen networks**

41. Vertical unbundling<sup>[2]</sup> should prevent that hydrogen network operators (i) discriminate against third parties with regard to the connection or access to the network in favour of affiliated production and supply activities, and/or (ii) that hydrogen network operators over- or under-invest in their energy network which could increase energy system costs or purposely limit capacity to hinder competitors access. Please indicate the extent to which the vertical unbundling principle should apply to hydrogen networks:

[2] For the purpose of this questionnaire and to reflect the specific situation of interrelation between hydrogen and methane gas networks, the Commission will refer to “vertical unbundling” when describing the separation of hydrogen production, trade and supply activities from hydrogen network-related activities and to horizontal unbundling, when describing the separation between ownership of hydrogen and methane gas networks.

- Accounts unbundling should be applied: the use of separate accounts for the regulated hydrogen network activities and hydrogen production and supply activities.
- Functional unbundling should be applied: the effective separation of the decision making rights between the network and production/supply activities, as well as the separation of the human, technical, physical and financial resources.
- Legal unbundling should be applied: the separation of network operation activities in a distinct legal entity.
- Based on the experience in gas and electricity markets, ownership unbundling should be applied from the start: the same company is not allowed to control both the hydrogen network and hydrogen production or

supply interests, although e.g. the ownership of minority shares without rights to vote or appoint board members may be allowed.

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.

43. How should non-discriminatory access to future regulated hydrogen networks be ensured?

○

The principle of negotiated third party access should apply. It will be left to the hydrogen network operator and the network users to negotiate the terms of access to the network, such as tariffs. National regulators play a role at distance only.

- The principle of regulated third party access should apply. Infrastructure operators should be obliged in EU legislation to provide non-discriminatory access to network users on the basis of published terms and conditions, including tariffs that are set or approved by the national regulator.
- Third party access does not have to be ensured.

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 checked="" type="radio"/>	<input 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 type="radio"/>	<input checked="" 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 type="radio"/>	<input checked="" 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*

Non-zero tariffs on cross-border points are cost reflective. In the mature EU gas market, cross-border transmission tariffs have been set at non-zero tariffs and this did not hamper the functioning of the interconnected market, whereas setting zero cross-border tariffs will certainly not be enough to develop the interconnected hydrogen market, for which significant investments will be needed in both hydrogen production and end-usage, as part of the indirect electrification process.

46. The creation of hydrogen networks, specifically by repurposing, may give rise to coordination problems when operated by separate and fragmented system operators. This may hamper the development of a well-functioning cross-border hydrogen market. The creation of hydrogen markets opens up a possibility to manage and operate the hydrogen pipelines by a European Independent System Operator (ISO). Do you support to introduce an EU ISO model for hydrogen?

- Yes
- No

*Please explain your answer*

*500 character(s) maximum*

The introduction of an EU ISO for hydrogen is not necessary. In any case, an ambitious regional coordination arrangement / governance should be included in the H2 Target Model to be defined in the legislation. Such a Model would be gradually developed (i.e., elaboration of the detailed technical rules and implementation) following the evolution of the H2 market.

47. The configuration of many energy networks and the rules that apply to them set out a clear distinction between a transmission and distribution level. Is this distinction relevant for a hydrogen regulatory framework before 2030? Do you expect the development of a “transmission” and a “distribution” level for hydrogen?

-

No: hydrogen networks may have different features than methane networks (e.g. high/low pressure distinction less relevant in hydrogen network). At this stage, main regulatory principles should apply at any point in a hydrogen network.

- Yes: Many potential customers are connected to distribution grids; it should already be anticipated now that different rules should apply for the distribution and transmission level.
- Yes: At this stage, rules should be set for the transmission level only. EU rules for the distribution level can wait until later or be defined at Member State level.
- Yes: At this stage, rules should be set for the distribution level. EU rules for the transmission level can wait until later or be defined at Member State level.

*Please explain your answer*

*500 character(s) maximum*

The current H2 market is still developing at transmission level. While the first customers to be connected will be the hard-to-electrify heavy industries, which will, at some point, require to be connected at transmission level, it is important to set clear rules at distribution level for a consistent regulatory framework given that many industrial customers are today connected at the distribution level as will be the decentralised H2 generation.

#### **Section IV.4. Inventory of national rules on the construction of methane and hydrogen pipelines**

48. In order to repurpose the existing methane gas infrastructure for hydrogen transport, it is necessary to clarify whether rights of land use, private easements as well as (other) public permits that have been granted for the construction and operation of methane gas pipelines will remain valid once the transported gaseous energy carrier changes from methane gas to hydrogen. In addition, a legal framework covering these aspects might also be required for the construction and operation of new hydrogen pipelines. Will the construction of dedicated hydrogen pipelines (either repurposed or new built pipelines) be considered a public interest in your Member State?

- Yes
- No
- Do not know

49. Will rights and permits in your Member State initially obtained for the construction and operation of methane gas pipelines remain valid in case the development and (re-) use of these pipelines for hydrogen transport is foreseen?

- Yes
- No
- Do not know

50. Is a (new) legal framework covering public permits and rights of land use required in your Member State for the construction and operation of new hydrogen pipelines?

- Yes
- No
- Do not know

51. Should rights and permitting requirements for hydrogen infrastructure be similar to that of those that are applicable today to methane gas pipelines in your Member State?

- Yes
- No
- Do not know

52. If you replied 'no', please explain

*500 character(s) maximum*

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

53. The Commission expects as set out in the EU hydrogen strategy<sup>[1]</sup> 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?

[3] [https://ec.europa.eu/energy/sites/ener/files/hydrogen\\_strategy.pdf](https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf)



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 important	Very important
Access to consumption data	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on billing	<input type="radio"/>	<input checked="" type="radio"/>	<input 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"/>
Information on CO <sup>2</sup> content of hydrogen along its life-cycle <sup>[4]</sup> [Including emissions determined from hydrogen transport, distribution, liquefaction and storage].	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information on rights to switch supplier	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information about dispute settlement mechanisms	<input type="radio"/>	<input checked="" type="radio"/>	<input 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<sup>[4]</sup>. 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?

[4] In a simplified way, we can distinguish between industrial grade purity for the hydrogen used e.g. in refineries, for ammonia and steel production and fuel cell grade purity for use in low temperature fuel cells, e.g. current road and rail transport applications.

- 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.

60. Hydrogen may be transported via pipelines into the EU, but also via non-network based transport options. In case you expect non-network based imports from outside the EU, in which way do you expect hydrogen to be carried into the EU?

- Shipped into the EU as liquefied hydrogen.
- Shipped into the EU as ammonia.
- Shipped into the EU on the basis of Liquid Organic Hydrogen Carriers ('LOHCs').
- Transported into the EU via trucks.

61. Do you see a need to prepare EU LNG terminals to receive liquefied hydrogen?

- Yes, today's import terminals can play an important role in supplying the EU.
- No, imports will become important but large-scale LNG terminals will not be relevant.

62. In case hydrogen is carried into the EU as liquefied hydrogen, ammonia or LOHC, would you expect subsequent injection into pipelines?

	No	Yes
If imported as liquefied hydrogen	<input type="radio"/>	<input checked="" type="radio"/>
If imported as ammonia	<input checked="" type="radio"/>	<input type="radio"/>
If imported as LOHC	<input checked="" type="radio"/>	<input type="radio"/>

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

Regulatory principle	No opinion	Very important	Important	Neutral	Not very important	Not important
Market rules for access to storage for (pure) hydrogen	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market rules for access to import terminals for pure hydrogen	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

Today, biogas<sup>[5]</sup> and biomethane provide the most significant sources of renewable and low carbon gases in the EU with some 18 bcm annually (5% of total gas demand). Whereas biogas is used off the grid (for power production or by the industry to reduce process related CO<sub>2</sub> emissions), biomethane can be injected into the existing methane network. However, the deployment of biomethane is currently below its potential. There are about 725 biomethane plants connected to the gas grid, the majority at the distribution grid level. Synthetic methane has the potential to support the decarbonisation of gas as well. It is produced by adding CO<sub>2</sub> 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.

[5] Biogas is about 60% methane, 40% CO<sub>2</sub> + some impurities. Upgrading biogas to biomethane level requires removal of CO<sub>2</sub> and impurities. If used and, more importantly, stored the CO<sub>2</sub> obtained in production of biomethane from biogas is sometimes argued to create 'negative' emissions

### 64. Which are in your view the main regulatory barriers to the deployment of biomethane and synthetic methane?

*500 character(s) maximum*

We need a harmonised approach in the rules for the access of biomethane and synthetic methane to the gas network and for cross-border trade. Gases shall be differentiated based on the "climate performance of the gas", including the production GHG footprint, and the "origin of the gas" (renewable, non-renewable) and CO<sub>2</sub> used (for synthetic methane). Production costs should be reduced and financial support proportionate. There is also a risk, in some MS, of double taxation of P2X facilities.

### 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 type="radio"/>	<input checked="" 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 type="radio"/>	<input type="radio"/>	<input checked="" 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 volumes of biogas, biomethane or hydrogen not injected to the interconnected grid.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obliging operators to ensure connection for new renewable gases facilities i. e. priority connection and dispatch.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input 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 type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" 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 type="radio"/>	<input checked="" 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).



68. The current gas market model implies diverging access tariffs at the borders of Member States. As pointed out by ACER “*Cross-border tariffs tend to have a referential role over hub price spreads, although the role may vary per case. In hub pairs, mainly in the Nord-West Europe area, day-ahead price spreads are regularly below daily transportation tariffs and frequently also below yearly transportation tariffs (the latter being usually more economic)*”<sup>[6]</sup>. For the sake of an enhanced efficiency of gas markets into an integrated EU-wide internal market so as to facilitate the uptake of renewable and low-carbon gases within the market, a re-design of the access tariff to be more compatible with market dynamics could be introduced. This would lead to a full integration of gas markets and avoid price spreads across EU. It would however bear the risk of redistribution of transportation tariff between Member States in accordance with inter-TSO agreements and changes to end-user tariffs. Moreover, the re-designing of the short-term capacity products may avoid capacity foreclosure/lock-in in favour of long-term (natural) gas trade to the detriment to the renewable and low carbon gases. This may also help in aligning the capacity products of the future methane-based system with the electricity market operating on the basis of short-term trading. This could be done even in absence of EU-wide common rules on e.g. the overall rate of return, depreciation times or asset value for the gas grids, as these are set out at national level.

How do you rate the measures below to reach this enhanced level of design?

[6] see ACER’s Market Monitoring Report 2019, p.58)

Measure	No opinion	Very important	Important	Neutral	Not very important	Not important
<ul style="list-style-type: none"> <li>● Abolishing grid charges on intra-EU cross-border points, payable price for capacity booking determined by auctions only (minimum price fixed at variable costs only).</li> <li>● Charging the entry points from non-EU countries based on capacity weighted distance to a virtual point in the middle of EU’s grid in addition to some fees set according to market and security of supply criteria</li> </ul>						

<ul style="list-style-type: none"> <li>Collecting the remuneration of the EU's network operators from capacity auction revenues at extra-EU entry points, intra-EU entry points for gas' production and from exit points</li> <li>Introducing an inter-TSO compensation mechanism to reconcile revenues by keeping TSOs revenues neutral with the current circumstances.</li> <li>Setting up short-term capacity products</li> </ul>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Harmonising allowed revenues parameters for TSOs (e.g. WACC, depreciation time, valuation of assets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
EU level guidance for the regional integration of the gas market, including gas market mergers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

69. The measures under question 67 and 68 could be combined. How do you see such a possibility?

*500 character(s) maximum*

We do not see a combination of measures as advisable, current rules are appropriate. However, some measures of Q67 are recommendable: common rules for physical access and market access of R&LC gases and the integration of the DSO level into the entry-exist system. If priority connection is introduced (it should not), this shall also apply to hydrogen, whereas priority dispatch should be banned. It is important to ensure a stable gas quality within the allowed ranges set by authorities.

70. The LNG market in Europe has significantly changed since the adoption of the Third Energy Package setting the rules applicable to LNG terminals in the EU. Additional LNG volumes imported to the EU, more short-term trade and an increased number of LNG terminals in the EU change the way the terminals operate. Market participants are calling for more transparency, flexibility of products and access rules<sup>[7]</sup>. Provided that adaptations are made and that sustainable renewable gases can be verified in third countries, LNG terminals can play a role in importing renewable and low-carbon gases (i.e. liquid hydrogen, biomethane, ammonia, synthetic-fuels). Gas storage facilities may also play an important role for renewable and low-carbon gases either directly or after adaptations. Do you think the existing regulatory framework for LNG needs to be modified? (multiple answers possible)

[7] <https://op.europa.eu/en/publication-detail/-/publication/efa4d335-a155-11ea-9d2d-01aa75ed71a1/language-en>.

- Yes, it needs to incentivise and promote the access of renewable and low-carbon gases into the LNG terminals (i.e. synthetic methane, bioLNG, etc.)
- Yes, it needs to be more harmonised in terms of transparency and access to available capacities to improve the functioning of LNG market in the
- Yes, it needs to be less prescriptive compared to the current framework, allowing for negotiated access rules to LNG terminals
- No, it strikes the right balance as it is
- Other (pls allow for comments)

71. Do you think that LNG terminals will play an important role in the decarbonisation of the gas sector?

- Yes, the import of renewable and low-carbon gases via LNG terminals into the EU will play an important role
-

No, LNG terminals cannot be used to import renewable and low-carbon gases

72. Which renewable and low-carbon gases, in your view, can be imported via LNG terminals?

100 character(s) maximum

imports of LNG downstream decarbonisation hydrogen, bioLNG, synLNG, H2 production ammoniac, e-fuels

73. How important do you consider the following measures to be to improve the current regulatory framework for LNG terminals?

	No opinion	Very important	Important	Neutral	Not very important
Require LNG terminals and other gas depressurising sites to provide waste heat/cold to nearby heat/cold consumers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Introduction of measures coordinating the adaptation of LNG terminals to renewable and low-carbon gases e.g. coordination of development plans, market tests etc.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Removing of the tariff discount for gaseous fuels entering the TSO grid from LNG terminals, regardless of the type of gas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Introduction of stronger enforcement rules preventing cross-subsidisation of LNG terminals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Introduction of an EU-wide information platform that ensures transparency on and comparability between terminal service offerings, tariff levels, and available capacities.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitate more transparency in the secondary trading of capacity.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonise the congestion management rules to improve terminals' usage.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide an option for Member States to opt for "negotiated" access similar to storage facilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

74. Do you have any other view or ideas related to improve current regulatory framework for LNG? Please specify.

*500 character(s) maximum*

The EU should also take into consideration the role of small-scale LNG (SSLNG). SSLNG is well placed to meet the growing demand from the shipping and trucking industries for future-proof fuels and could thereby contribute to the decarbonisation of transport where direct electrification is not possible, especially when fed with biomethane and synthetic methane. Improving cumbersome and lengthy permitting processes will be crucial to allow for the further development of SSLNG.

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 checked="" type="radio"/>	<input 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 type="radio"/>	<input checked="" 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 type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

## VI. Gas Quality

The variety of sources of gases transported through the EU's methane gas networks<sup>[8]</sup> leads to a corresponding variety of gas quality with different physical and chemical characteristics. These gas quality characteristics are an essential consideration for the design of gas infrastructure and end-use appliances, as well as for industrial processes using gas as feedstock, in order to ensure the safety and efficiency of operation. To this end, gas quality standards have been developed. Member States have established their own practices to control gas qualities at national level, adapted to their national context (e.g. quality of gases historically consumed and appliances in use). In addition, the CEN standard on H-gas quality<sup>[9]</sup> is currently the fundamental standard for the EU gas sector used in EU Member States. However, the CEN standard is not applied in a coordinated<sup>[10]</sup> or binding manner and therefore, is not sufficient on its own to provide for a harmonisation of gas quality standards across EU Member States. Differences in gas quality can lead to problems for end users and have negative effects on cross-border trade.

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<sup>[11]</sup>.

[8] Currently mainly natural gas from different sources in and outside of the EU combined with a growing volume of renewable and low-carbon gases produced in the EU.

[9] European Committee for Standardisation, EN 16726 "Gas infrastructure – quality of gas – group H", OJEU, December 2015.

[10] Study: Potentials of sector coupling for decarbonisation: Assessing regulatory barriers in linking the gas and electricity sectors in the EU, December 2019, [https://ec.europa.eu/energy/studies/potentials-sector-coupling-decarbonisation-assessing-regulatory-barriers\\_en](https://ec.europa.eu/energy/studies/potentials-sector-coupling-decarbonisation-assessing-regulatory-barriers_en); 6th CEER benchmarking report on the quality of electricity and gas supply, 2016.

[11] The Interoperability and Data Exchange Network Code is establishing a dispute resolution process in case of cross-border trade restrictions due to gas quality differences; Commission Regulation (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules, Article 15.

78. In your view, what is necessary to ensure efficient coordination on gas quality between Member States?

- The current cross-border coordination framework, is sufficient to deal with problems due to gas quality differences in the energy transition.
- Reinforced cross-border coordination tools (e.g. streamlined procedure, involving all impacted market participants, increased transparency).
- Harmonised application of gas quality standards across the EU.

79. In your view, the harmonised application of the CEN standard across EU Member States would be best achieved by:

	Completely disagree	Completely agree	Agree	Neutral	Disagree

Increased transparency on the application of the current standards (e.g. on measured parameters, on frequency of measurement, on rules of information provision).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU-wide harmonised rules on information provision and publication of CEN quality parameters.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonising the gas quality standard across the EU based on the CEN H-gas standard.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonising the gas quality standard across the EU based on a standard taking fully into account renewable and low-carbon gases, developed by an independent technical expert group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

80. The injection of hydrogen into the existing methane gas network (blending) is currently explicitly accepted only in a few Member States and only possible at very low concentration levels. Similarly, hydrogen blending limits at cross-border interconnection points are applied only in a few Member States. In your view, what would be necessary to avoid or limit potential negative effects of hydrogen blending into the existing methane gas network from the perspective of end-users and infrastructure operators (e.g. for safety, production efficiency, product quality, emissions, etc.)?

- Not to blend hydrogen into the current methane gas network.
- Develop robust gas quality standards (e.g. CEN, national) allowing for the injection of renewable and low-carbon gases (including hydrogen) into the existing methane gas network.
- Establish EU wide harmonised quality specification at the transmission level, including at cross-border interconnection points, allowing for the injection of renewable and low-carbon gases (including hydrogen) into the existing methane gas network.

81. Clearly defined allowed blending levels at the EU or national level (e.g. minimum and/or maximum level of hydrogen in % by volume to be accepted in the network) could provide certainty for producers, infrastructure and appliance manufacturers and end-users. Applied at cross-border interconnection points, such blending levels would enable the unhindered flow of blended gases across Member

States. In your view, should allowed hydrogen blending levels be introduced, and if yes in what form?

- Not at all.
- National hydrogen blending levels set by Member States.
- National hydrogen blending levels set by Member States in a standardised and transparent way, based on EU rules.
- Harmonised EU-wide hydrogen acceptance level for hydrogen blends, which TSOs have to accept at cross-border interconnection points (minimum and /or maximum level of hydrogen in % by volume).

82. Do you consider that rules on roles and responsibilities on gas quality management, including e.g. on cost allocation, dispute resolution and regulatory oversight, should be defined, and if yes in what form?

- Not necessary to define such rules.
- At Member State level (i.e. maintaining potential differences of the regulatory framework across Member States).
- By establishing EU-level principles providing for a common approach in the Member States.
- By setting EU-level rules ensuring a harmonised regulatory framework across the EU.

83. Do you see changes to the roles, tasks and liabilities of market participants with regard to gas quality monitoring, measurement and management?

Type of market participant	No	Yes
Gas producers, including producers of renewable and low-carbon gases	<input type="radio"/>	<input checked="" type="radio"/>
Transmission System Operators	<input type="radio"/>	<input checked="" type="radio"/>
Distribution System Operators	<input type="radio"/>	<input checked="" type="radio"/>
Consumers	<input checked="" type="radio"/>	<input type="radio"/>
Gas appliance manufacturers	<input type="radio"/>	<input checked="" type="radio"/>
Service providers	<input type="radio"/>	<input checked="" type="radio"/>
Others (please specify)	<input type="radio"/>	<input checked="" type="radio"/>

Please specify what these changes would entail (*gas producers*)

100 character(s) maximum

Producers should cooperate and agree on quality parameters & ranges allowed by the local DSO or TSO

Please specify what these changes would entail (*TSOs*)

100 character(s) maximum

Set rules for gas quality harmonization + carry technical improvements on relevant interco. points

Please specify what these changes would entail (*DSOs*)

100 character(s) maximum

Same than TSO + take into account reverse flow on the specific national circumstances.

Please specify what these changes would entail (*consumers*)

100 character(s) maximum

Please specify what these changes would entail (*gas appliance manufacturers*)

100 character(s) maximum

Gas appliance manufacturers have to adapt products to more hydrogen.

Please specify what these changes would entail (*service providers*)

100 character(s) maximum

Depending on the kind of services, these providers have to assume new tasks

Please specify what these changes would entail (*others*)

100 character(s) maximum

SSOs would have to adapt GQ monitoring to manage fluctuating H2 content of the gas to be stored.

84. In your view, at what point in the gas value chain should the quality of gases be adapted to the standard specifications, considering also technical feasibility and cost-effectivity?

- At gas production/injection points by the producer (i.e. before injection into the gas system, e.g. with adequate quality contracts).
- In the transmission and/or distribution system by the system operator.
- At the exit point by end-users.
- At the exit point to end-users by a third party service provider.

85. While handling varying qualities and more frequent quality fluctuations of the different renewable and low-carbon gases, gas quality management should remain cost-effective in the coming years and decades. Cost effective quality management requires sufficient transparency and information sharing. Do you consider that

providing improved visibility on gas quality and transparency on the cost of gas quality measurement, monitoring and handling is needed?

- Yes
- No

86. The current regulatory framework<sup>[12]</sup> includes some requirements on TSOs to share information on gas quality. In order to enable market participants to deal with different gas qualities and potentially with quality fluctuations, it might be however necessary to further develop the visibility on gas quality for market participants. Please indicate the importance of the measures below.

[12] Commission Regulation (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules (Articles 7, 16, 17 and 18).

Measure	Not important	Very important	Important	Neutral	Not very important
The current regulatory framework is sufficient to ensure adequate transparency on gas quality (Interoperability and Data Exchange Network Code).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Provide improved visibility on gas quality (actual and forecast) to market participants.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extend the group of market participants receiving gas quality information (e.g. to include producers, all end-users, appliance manufacturers).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure transparency on the roles, responsibilities and liabilities for gas quality management.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide for transparency on the costs of gas quality management (incl. measurement, monitoring and handling).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Include gas quality aspects into the coordinated network planning (national and EU-wide).	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

87. The potential changes to the regulatory framework and the changing role of market participants in gas quality management requires revisiting the question of

proper regulatory oversight. However, harmonised rules on the role of National Regulatory Authorities (NRAs) for gas quality issues is currently missing. While NRAs have a role in dispute resolution in case of cross-border trade restrictions due to gas quality differences<sup>[13]</sup>, most of them are not involved in setting gas quality standards or in monitoring gas quality parameters. Do you consider it necessary to reinforce the roles and responsibilities of NRAs in a harmonised way to ensure proper regulatory oversight of the revised gas quality regulatory framework?

[13] Commission Regulation (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules, Article 15.

- Yes
- No

88. Do you see any other issues related to improving the regulatory framework on gas quality management you would like to raise? Please explain.

*500 character(s) maximum*

For the diversification of supply & potential injection of a variety of gases a wide range of GQ parameters is important to lower the costs of production. This is in contrast to specific sensitive applications of some large commercial/industrial users. These issues & potential solutions are addressed in CEN and the Prime Movers group. It can only be achieved together, e.g. with intelligent measurement, control concepts, conversion tools, H2-ready devices and individual solutions at network level

## VII. Alignment of institutional rules for gaseous fuels to the Clean Energy Package

EU electricity and gas market rules have been developed in parallel over the last 20 years and no distinction was made so far as concerns regulatory oversight over gas and electricity markets. Sector integration, i.e. more integrated EU electricity and gas markets may even require more aligned rules.

The revision of the Electricity Directive and Electricity Regulation adopted in 2019 (Directive (EU) 2019/944 on common rules for the internal market for electricity and Regulation (EU) 2019/943 on the internal market for electricity) reinforced the institutional framework to make it fit-for-purpose for the changes in the electricity sector (integration of renewables, decentralised electricity production, regionalisation, etc.). However, this creates differences in the institutional set-up between the electricity and gas sectors, which might lead to detrimental regulatory divergence and unnecessary complexity that could affect consumers, industry and regulators alike.

The revision of the gas legislation would envisage to align the provisions on the institutional framework for the gas sector to those already adopted for electricity, as this would also help implementing the sector integration principle. Updating the institutional framework for gas appears also necessary to make the EU gas sector fit for decarbonisation.

89. In your view, to ensure the consistency of the regulatory framework, in which areas is it important to align the institutional provisions of the electricity and gas sectors?

Area of alignment to the electricity institutional framework	Gas market specificities require a different set of rules for gas	Align gas legislation to the rules in the Clean Energy Package (electricity legislation)
Adapting ENTSOG's mission, tasks and the rules governing its transparency and oversight by the Agency for the Cooperation of Energy Regulators (Electricity Regulation, Articles 28-31).	<input type="radio"/>	<input checked="" type="radio"/>
Adapt the role of ACER to oversee the effective functioning of the integrated markets and cross-border infrastructure (ACER Regulation, Article 4).	<input type="radio"/>	<input checked="" type="radio"/>
Aligning the process for developing detailed regulatory rules on the operation of the market and networks (i.e. network codes and guidelines, Electricity Regulation, Articles 58-60 and ACER Regulation, Article 5).	<input checked="" type="radio"/>	<input type="radio"/>
Aligning the provisions reflecting the increasing link between the distribution and transmission network levels in the regulatory framework (e.g. requirements for cooperation on network planning; Electricity Regulation, Article 57).	<input type="radio"/>	<input checked="" type="radio"/>

90. The revision of the Electricity Market Design formalised the role of Distribution System Operators (DSOs) at European level by creating a single European DSO entity, rendering their participation effective and independent (Electricity Regulation, Articles 52-55). The aim was to facilitate distributed resources to participate in the market by – among others – enabling DSOs to become more active at European level and have increased responsibilities and tasks (similar to those of the TSOs). In your view, what would be required to ensure the EU-level representation of gas DSOs?

- There is no need to establish a DSO entity for gases.
- It is necessary to establish a separate DSO entity for gases.
- It is necessary to establish a “department” for gases under the existing electricity DSO entity with all rules from electricity applying.
- It is necessary to establish a “department” for gases under the existing electricity DSO entity with some specific rules applicable to gas DSOs.

91. Do you see any other issues related to the alignment of the gas institutional provisions to the Clean Energy Package provisions? Please explain.

*300 character(s) maximum*

Keep high level principles of governance. In an increasing integrated energy system, the revision of the gas package should not create new constraints to electricity operators.

## VIII. Security of supply dimensions

With the adoption of the Security of Gas Supply Regulation<sup>[14]</sup>, 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.

[14] Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010, OJ L 280, 28.10.2017.

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*

The European system will be more and more digitalised and interconnected. The increasing role of decentralised and small scale production should be taken into account, combined with a growing need for cross-border flows in some regions due to the phasing out of coal-fired power generation and decrease of use of domestic natural gas production in Europe. Moreover, we should anticipate the new SoS issues emerging from the international context.

94. Do you think that changes are needed to guarantee consistency between the Gas Directive and the Security of Gas Supply Regulation:

Area of alignment	Not important	Very important	Important	Neutral	Not very important

Definitions, in general	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Definition of “protected customers”, in particular	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clarify the conditions under which PSOs on security of gas supply grounds may be justified	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solidarity mechanism	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safeguard measures	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

95. Do you see room for harmonising other elements, in addition to those listed under 94?

- Yes
- No

\* Please specify what these changes would entail

*500 character(s) maximum*

NA

96. The scope of the Security of Gas Supply Regulation is currently limited to guaranteeing the provision of “methane gas”. Do you think that the rules on security of gas supply need to be amended ?

- Yes, the SoS Regulation should be amended as soon as possible.
- Yes, the SoS Regulation should be amended, based on the experience of the application of the new gas market rules.
- No, the SoS Regulation is fit for purpose (guaranteeing the methane gas supply, based on existing gas corridors).
- No, the provisions of the SoS Regulation are flexible enough and already allow to take into consideration the expected adaptation of the market to the needs of renewable and low carbon gases.

\* Please explain (*mandatory field*)

*500 character(s) maximum*

The development of the decarbonisation of gas supply is in its initial phase. Many specific forms, characteristics and challenges are not yet known. Amendments of the SoS-regulation should therefore be carried out gradually and with a sense of proportion in accordance with the advancing development. A regular evaluation report that continuously monitors developments and associated requirements could provide a sound basis for that.

97. The increasing digitalisation of energy technologies and networks makes the energy system smarter and enables consumers to benefit from innovative energy services. At the same time, digitalisation creates significant risks as an increased exposure to cyberattacks and cybersecurity incidents potentially jeopardise the security of energy supply and the privacy of consumer data. Cybersecurity and challenges related to it are evolving at a rapid pace, which is why the European Commission has taken a series of measures to tackle it<sup>[15]</sup>. Taking into account the specific challenges in the energy sector<sup>[16]</sup>, the Commission adopted a dedicated recommendation on cybersecurity in the energy sector in April 2019. Further, the recent Clean Energy for all Europeans Package<sup>[17]</sup> introduced the possibility to develop cybersecurity rules for electricity.

Do you consider that developments in the gas sector also require establishing cybersecurity rules for gas?  
*(only one answer possible)*

[15] At horizontal cross-sectoral level, the Commission adopted a package on cybersecurity and critical infrastructure on December 2020, including a revised NIS Directive (Cybersecurity, COM(2020) 823 final), a revised Cybersecurity Strategy (JOIN(2020) 18 final) as well as a new proposal for a Directive on the resilience of Critical Entities (COM(2020) 829 final).

[16] E.g. real-time requirements, cascading effects and the mix of legacy technologies with smart/state of the art technology.

[17] Further information on cybersecurity measures: [https://ec.europa.eu/energy/topics/energy-security/critical-infrastructure-and-cybersecurity\\_en?redir=1](https://ec.europa.eu/energy/topics/energy-security/critical-infrastructure-and-cybersecurity_en?redir=1)

- There is no need to develop cybersecurity measures for the gas sector.
- It is necessary to establish EU-level legislation for cybersecurity specifically for the gas sector.
- It is necessary to establish a comprehensive EU-level legislative framework for cybersecurity for the energy sector (covering the electricity, gas, hydrogen and heating sectors).

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

\* Please explain *(mandatory field)*

*500 character(s) maximum*

The growing interactions between power, gas and heating networks require a holistic approach, as underlined by the ESI Strategy. The system is already interconnected; hence, energy-specific measures should be discussed together and related sectors move together. There can be separate implementation, but at the end of day, all of them should be move with consistence. The existing rules are sufficient. Duplication of legislation & inconsistencies with sector-specific legal acts should be avoided.

**UPLOADING DOCUMENT IF NEEDED (possible in case the questions do not cover all issues the respondent would like to rise)**

Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

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