International Association of Oil & Gas Producers

OCTOBER 2020

IOGP written input to the consultation "2030 Climate Target Plan"

Introduction

The International Association of Oil & Gas Producers' (IOGP) member companies account for approximately 90% of the oil and gas produced in Europe. IOGP shares the world's ambition to reach the Paris Agreement's goals and supports the EU's objective of climate neutrality by 2050 upon the implementation of enabling measures. There are many challenges on the road to meet this objective, as the energy transition will require significant investments, new and innovative technologies, effective policies and substantial behavioural changes.

The COVID-19 outbreak has unleashed an unprecedented socio-economic crisis in Europe and around the world which is affecting all citizens and all economic activities. Despite the current market conditions, IOGP's member companies are directly engaged in shorter-term efforts to fight COVID-19, for example by supporting hospitals and healthcare workers by supplying free fuel, medical equipment, supercomputer calculation capacity and ramping up the production of chemicals used in hand sanitisers. Our industry welcomes the Commission's efforts to develop a coordinated exit strategy and a comprehensive recovery plan.

In responding to the Commission's 2030 Climate Target Plan, because of the limitations of the questionnaire format, IOGP has only been able to provide limited responses to the Commission's questionnaire and therefore seeks to provide more detailed input in this written submission.

The EU 2030 emission reduction targets need to be accompanied by an enabling and coherent policy framework, including innovation and modernisation funds, that supports the business case to invest in the low-carbon technologies needed to deliver the ambitious EU objectives and to avoid any further delocalisation of European industry, including energy production, to other global locations.

The EU's policies, including but not limited to EU financing and funding mechanisms, should facilitate a just energy transition at the lowest costs for society. A transparent, holistic, technology-neutral approach is crucial to reach decarbonisation objectives at least cost whilst safeguarding the EU's global competitiveness, ensuring the security of the energy supply and helping to continue the long-term support from the public for addressing climate change. It is essential that EU policies provide a predictable investment climate and security for investors and producers, as their capital allocation decisions are based on long-term investment and remuneration cycles.

EU climate ambition for 2030: Principles to consider

(The responses below provide input to the following questions: 1. Overall climate ambition for 2030, opportunities and challenges; 2.3. Renewable energy ambition; and 2.4 Energy-efficiency ambition.)

Any upcoming revision of the 2030 emission reduction targets must be based on holistic, thorough and transparent impact assessments that need to consider the following elements:

- **COVID-19 impact**: While the COVID-19 crisis largely affects human health and daily activities, the economic consequences of severe restrictions on movement and interaction still loom large and raise several questions regarding Europe's future strategic industrial capacity. IOGP supports the EU's efforts to take the recovery as an opportunity to support a cost-effective energy transition.
- **Carbon and investment leakage risk**: European industry players contribute significantly to finding solutions to mitigate GHG emissions and to help reach EU climate targets. The offshoring industry would not only have a serious impact on Europe's prosperity and security of supply but would also have negative effects on the effort to tackle climate change, as production processes could be shifted to other regions of the world where climate and environmental standards are less ambitious. These elements should be considered in the 2030 Climate Target Plan.
- **Understanding the GHG emissions reduction target and avoiding overlapping measures**: While determining the new 2030 GHG emissions reduction target, it is very important to consider the interactions with the renewables and energy efficiency targets, and the underlying policy framework to provide an enabling framework for investment.
- **Assessing the possible impacts of different policy options for strengthening the EU ETS ambitions**: The implementation of the EU's current climate targets requires each Member State to bear costs as outlined in previous impact assessments accompanying EU energy and climate policies. The thorough and transparent impact assessments of different policy options for strengthening the EU ETS ambition to contribute to an emission reduction of 50–55% by 2030, will therefore have to be carried out before any decision is taken.

Sectoral action and potential to reduce greenhouse gas emissions by 2030

(The responses below provide input to the following questions: 2.1. Importance of contributions by sectors; 2.2. Energy system; 2.5 Role of fossil fuels (solid fossil fuels, natural gas); 2.6 Buildings; 2.7 Industry; and 2.8 Mobility: Road transport.)

The EU should ensure that future policies enable all technology solutions and energy carriers to contribute to the 2030 GHG emission reduction targets and 2050 climate neutrality objective. All sectors of the economy should contribute to the emissions reductions taking into account cost-effectiveness. The advantages and versatility of natural gas should be considered and the use of low-carbon technologies and energy carriers should be strengthened toward 2030 *(question 2.2 on energy systems)*.

Considering the advantages and versatility of natural and low-carbon gases

The 2030 Climate Target Plan should recognise that natural gas already plays a key role in the energy transition across different sectors of the European economy and can continue to play a role in deeply decarbonised energy systems. EU policies should complement Member States[1] in their decarbonisation efforts, including fuel switching to natural gas to reach 2030 GHG emission reduction targets. In their NECPs, many Member States refer to a transition to natural gas as one of the solutions to reach their 2030 emission reduction targets across different sectors of the economy for the following reasons:

- **Coal-to-gas switching in power generation**: In the short term, switching from coal to natural gas in power generation would reduce up to 60% CO_2 emissions (in the power sector)[2]. Coal-to-gas switching has already helped to deliver significant reductions in EU GHG missions. Coal-to-renewables and coal-to-gas switching each contributed from about half to 24% reduction of coal in power generation in 2019 versus 2018 and were the main drivers behind the 120 MT CO_2 savings in the EU power sector[3]. In Germany, fossil fuel power plants emitted 33% less CO_2 in June 2019 compared to the same month in 2018 due to a market-driven fuel switch from coal to gas[4,5].

[1] Twenty-three draft NECPs are positive towards natural gas approaching 2030 in one or several sectors. http://www.oilandgaseurope.org/wp-content/uploads/2020/02/NECPs_factsheetinfographic.pdf

[2] https://gasnaturally.eu/wp-content/uploads/2018/12/long-term-vision-of-the-european-gas-industry.pdf.

[3] 2020 Agora/Sandbag report: https://www.agora-energiewende.de/fileadmin2/Projekte/2019/Jahresauswertung_EU_2019/172_A-EW_EU-Annual-Report-2019_Web.pdf

[4] See Fraunhofer ISE – Energy Charts (2019): https://www.ise.fraunhofer.de/de/presse-und-medien/news/2019/33-prozent-weniger-co2-emissionen-durch-brennstoffwechsel-von-kohle-auf-gas.html.

[5] In the United States, power sector emissions have fallen 25% since 2008, in large part due to coal-to-gas fuel switching: https://poweringpastcoal.org/insights/energy-security/coal-to-gas-switch-slashes-us-power-sector-co2/.

Furthermore, because natural gas is a flexible fuel, it can enhance energy security, make a low-emission but intermittent electricity generation system resilient and facilitate the use of low-carbon gases, including hydrogen.

- **Efficient natural gas in heating**: Natural gas combined heat and power (CHP) can lower the carbon footprint of electricity and heat in a very cost-efficient manner and have additional environmental co-benefits. Energy-efficient gas boilers can replace other appliances to reduce CO_2, NOx, SOx and PM emissions from heating and have a low-carbon future, considering low-carbon gases. Heating accounts for a third of EU GHG emissions and half of final energy demand[6]. For example, in Poland, half of the housing stock is still heated with coal, while the renovation rate needs to be improved to reach the desired 2.5% of floor area p.a.[7] EU Member States face different challenges with reducing emissions from heating; therefore, it is important to offer realistic, affordable heating alternatives[8]. For example, replacing inefficient and carbon-intensive heating technologies with condensing gas boilers is one solution that can immediately reduce CO_2, NOx, SOx and PM emissions, improve air quality and increase efficiency at a significantly lower cost than alternatives. Analyses by the IEA, which consider both CO^2 and methane emissions, show that coal-to-gas switching in heating reduces emissions by 33%[9]. The European Court of Auditors has recently assessed whether EU-co-funded energy-efficiency investments in buildings have cost-effectively helped the EU towards its 2020 energy saving target[10]. The auditors concluded that operational programmes and project selection have not been driven by a cost-effectiveness rationale **because of a lack of comparative assessment, projects delivering higher energy savings or other benefits at a lower cost have not been prioritised**. The IOGP recommends a greater focus on cost effectiveness by ensuring competition between various projects and technologies delivering CO_2 emissions reductions.
- **Low-carbon and natural gas can contribute to the EU's efforts to reduce emissions from the transport sector. For the shipping industry, liquefied natural gas (LNG) offers an available solution for short- and long-distance large vessels in the short and medium term, as does clean hydrogen (including ammonia and methanol) in the longer term**. This quality advantages LNG relative to other technologies, such as batteries, which currently constitute a supplement to traditional ship engines rather than an alternative. Based on today's technology, large vessels cannot sail across oceans running solely on electric engines[11]. The IMO has set an ambitious emissions reduction target of at least 50% GHG by 2050 versus 2008, because of which the shipping industry will need to be ready to build lower-carbon vessels in the next 10–15 years. LNG provides near-term opportunities to address the IMO ambition. In the long term, the use of liquefied bio methane (LBM) and liquefied synthetic methane (LSM), hydrogen, ammonia, methanol and other options can contribute to lessening emissions. In addition, in other transport sectors, particularly heavy road transport and public transportation, natural gas (LNG and CNG) provides a readily available option for emission reduction, whereas electric options are still under development. As for road transport, the use of natural gas (CNG/LNG) has some emissions advantages, as it is inherently cleaner burning. Gas can also help the shipping industry meet more stringent emissions targets set by the 2020 IMO regulations. Using LNG as a marine transport fuel can reduce SOx emissions by 100%[12], NOx by 80–90% and CO_2 emissions by up to 21%[13]. **Electrification is immature for aviation, the marine sector or even long-haul heavy-duty transport. Therefore, low-carbon liquid fuels (including sustainable biofuels) are an important option.**
- **Low-carbon gases**: Gaseous fuels are an energy carrier that can be transported over long distances and can easily be stored for significant periods. This makes it ideal for consumption in end-use sectors which are otherwise challenging to fully electrify. IOGP is convinced the gas infrastructure will have to play an essential role in the decarbonisation of the energy system by preparing itself to transport growing shares of other gases, such as hydrogen, biomethane and synthetic methane, as well as the transport of CO_2 for utilisation or storage. Investing in the production of natural gas and hydrogen as its decarbonised form, coupled with the technical adaptations of the EU gas infrastructure to carry hydrogen, can contribute to the 2030 emissions reduction targets and the EU climate neutrality objective by 2050 while making use of existing infrastructure in a much more cost-effective way versus an all-electric scenario.

---

6 European Commission (2019).
7 BPIE (2018) Financing Renovation of Buildings in Poland – An Overview of Public Funding Allocation for the Renovation of Buildings in Poland.
8 Sedigas, 2014; CEGIBAT, 2019.
9 IEA (2019) The Role of Gas in Today's Energy Transitions: https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions
10 ECA (2020) Special Report 11/2020: Energy Efficiency in Buildings: Greater Focus on Cost-effectiveness Still Needed. https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=53483
11 Some ships do cross with electric engines but using a diesel–electric configuration.
12 See UMAS (2018): LNG as a Marine Fuel in the EU. https://u-mas.co.uk/LinkClick.aspx?fileticket=yVGOF-ct68s%3D&portalid=0
13 Jingjing Xu, David Testa & Proshanto K. Mukherjee (2015) The Use of LNG as a Marine Fuel: The International Regulatory Framework, Ocean Development & International Law, 46:3, 225-240, DOI: 10.1080/00908320.2015.1054744; 'Life Cycle GHG Emission Study on the Use of LNG as Marine Fuel' https://info.thinkstep.com/lng-ghg-study

Enabling conditions and other policies

(The responses below provide input to the following questions: 3.2 Just transition and employment and 3.3 Taxation and carbon pricing.)

IOGP has the following recommendations to be considered in the context of enabling conditions and other policies:

- **Supporting Member States on their pathways to decarbonisation and a gradual and affordable transition by including support for fuel switching to natural and low-carbon gas in a transitional phase**: The 2030 Climate Target plan and instruments such as the Just Transition Mechanism and the Modernisation Fund should support Member States on their respective transition pathways. Natural gas and low-carbon technologies developed by the oil and gas industry can be an important driver of transition in carbon-intensive regions, in sectors such as power and heat generation and transport. In power generation, natural gas can provide efficient backup for an increasing share of power generated by intermittent renewable energy sources. In a 2050 perspective, investing in the production of natural gas and hydrogen as its decarbonised form, as well as in gradual technical adaptations of the EU gas infrastructure to carry hydrogen, can contribute to climate neutrality while making use of existing infrastructure in a more cost-effective way. In this context, the EU should be pragmatic by allowing technology-neutral market mechanisms such as carbon pricing to drive cost-efficient emission reductions from coal-to-gas switching in power generation. More ambitious CO2 reduction targets need to be accompanied by stronger innovation and modernisation mechanisms to promote decarbonisation technologies at both the European and Member State levels.
- **All low-carbon technologies that can contribute to the objective of climate neutrality should be supported, including renewable and low-carbon gases such as hydrogen and biomethane, as well as both nature-based carbon management and CCS and CCU applied in the industrial and energy sectors**: The 2030 Climate Target plan and instruments such as the Just Transition Mechanism and the Modernisation Fund should effectively mobilise investments in all technologies and low-carbon energy solutions, including natural gas. This will be essential to achieve the 2030 emission reduction targets and 2050 climate neutrality objective while creating high-skilled jobs in Europe. CCS in Europe could also support the development of a hydrogen economy with the potential of up to 5.4 million jobs by 2050[14], as well as the retention of existing jobs in energy-intensive industries.[15]

Climate and energy policy design

(The responses below provide input to the following questions: 5.1 Role of the different climate policy instruments; 5.2 EU Emissions Trading System (EU ETS); and 5.3 EU emissions trading extension to road transport and buildings.)

Carbon pricing as a primary policy tool to achieve emission reductions: Market-based carbon pricing should be the primary policy tool to achieve emission reduction goals, as it incentivises the most cost-effective emission reductions and the cap will reduce to zero to deliver the environmental outcome. We also recognise, though that, carbon pricing may not be a silver bullet for all technologies and sectors to be decarbonised in a cost-efficient manner. Moreover, the impact on citizens, energy affordability and the energy transition pathway of each Member State should be considered. For this reason, the combination of policies and carbon pricing mechanisms should be designed in a way that drives the synchronised demand and supply of lower-carbon energies, enables the necessary infrastructure, supports innovation and investment in research and demonstration projects for low-carbon solutions, assists those who are least able to pay and avoids inefficient duplicative regulation.

In the longer term, a uniform carbon pricing extended to other sectors (e.g. heating, shipping) has the potential to become the most efficient and cost-effective policy tool to achieve the EU's climate-neutrality objective. Nevertheless, in the short -term, if the Commission decides to extend ETS to other sectors, it could create an ETS-like system for specific sectors (e.g. heating, shipping) which needs to be impact-assessed (policies with different carbon prices might be considered for a limited period with a clear process of converging such a system with the existing ETS). The generated revenue from the potential ETS-like systems should be recycled or spent to support climate mitigation and adaptation, whereby transparency in revenue spending and social justice considerations should be taken into account.[16]

[14] FCH JU (2019): *Hydrogen Roadmap Europe*. Available from: https://www.fch.europa.eu/sites/default/files/Hydrogen%20Roadmap%20Europe_Report.pdf

[15] High-Level Group on Energy-Intensive Industries (2019): *Masterplan for a Competitive Transformation of EU Energy-intensive Industries Enabling a Climate-neutral Circular Economy by 2050*. Available from: https://ec.europa.eu/docsroom/documents/38403

[16] One of our members – PGNiG – is not in the position to support this paragraph at this stage or the answers in the questionnaire to the questions 5.3.2 and 5.3.4.

Taking a global approach through progression on Article 6 of the Paris Agreement: EU energy and climate policy should allow cooperative approaches and international transfers of mitigation outcomes. This would enable the achievement of greater global ambition over time by helping countries to meet their climate pledges faster and more cost-effectively. Addressing climate change requires a commitment from all emitters worldwide. IOGP stresses the importance of international cooperation to achieve climate ambitions, particularly by the effective implementation of Article 6 of the Paris Agreement. COP26 will offer an excellent opportunity for the EU to showcase its continued commitment to a global approach, and the EU should redouble efforts to a successful negotiation despite challenges posed by the COVID-19 pandemic.

Examining proposals for a Carbon Border Adjustment Mechanism: As stated above, IOGP favours a globally consistent, meaningful carbon price. However, until consistency on global carbon pricing and ambition can be achieved, IOGP welcomes the Commission's initiative to examine options for mechanisms that would reduce the risk of carbon leakage of the energy-intensive industries as the EU increases its climate ambition in the context of the European Green Deal (e.g. carbon border adjustment mechanism). Should the EU assess the possibility of introducing a carbon border tax, this should be based on the market-based price of carbon (e.g. ETS) and could be levied on goods and services from jurisdictions that do not have carbon pricing systems or whose pricing systems place considerably lower per-ton costs. Such systems should be carefully constructed to focus on mitigating economic and emission leakage while avoiding a perception of trade protectionism that can harm European consumers and the economy. Any Carbon Border Adjustment Mechanism should be designed so it:

- Improves the effectiveness of policies aimed at fighting climate change in the EU and globally.
- Encourages international cooperation on climate change.
- Should be in line with the WTO rules.
- Does not negatively impact the global competitiveness of EU industrial sectors.
- Does not only create a level playing field on the EU's markets among domestic production and imports, but should also ensure it that exported goods from the EU do not suffer undue disadvantage due to carbon costs within the EU (therefore, existing instruments under the EU ETS should also be a part of the solution).

Role of CCS and hydrogen

(The responses below provide input to the following questions: 3.4 Research, innovation and deployment; 5.6 Role of energy policies; 5.7 Energy infrastructure and sector integration; and 5.8 Enabling conditions and policies for industrial transformation.)

a) CCS needed to deliver carbon neutrality

We agree with the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), the European Commission and many others that carbon capture and storage (CCS) is a key technology for the decarbonisation of Europe, as confirmed by numerous climate models and reports[17]. CCUS (carbon capture utilisation and storage) can contribute to direct emissions reductions, for example through addressing industrial process emissions (steel, cement, chemicals) for which few or no other economically feasible alternatives for emission mitigation are available. The current suite of CCS projects in development aims to capture emissions from industrial clusters where different industries may share a transport and storage infrastructure, allowing significant cost reductions and cross-sectorial and cross-border industrial systems to develop. Coupled with a hydrogen infrastructure, CCS can also support delivering all forms of clean hydrogen (from renewables, methane pyrolysis and natural gas reforming with CCS) across the European economy.

To scale up CCS, the EU should develop fit-for-purpose policies and regulation[18]. IOGP believes that policies such as a Contract for Difference to the ETS price and the Innovation Fund can be good tools to enable the implementation of CCS and other low-carbon technologies, allowing the European economy to remain competitive. Commercial-scale CCS demonstration projects are necessary to confirm the economic viability of CCS as a cost-effective measure to mitigate greenhouse gases in the energy and industrial sectors. Such projects will also help raise public awareness and acceptance of the technology. The EU can further facilitate the roll-out of CCS infrastructure through adapting frameworks such as the TEN-E regulation, CCS, ETS and state aid guidelines and by working towards CO_2 specification standardisation and a regulatory framework for the certification of carbon removals.

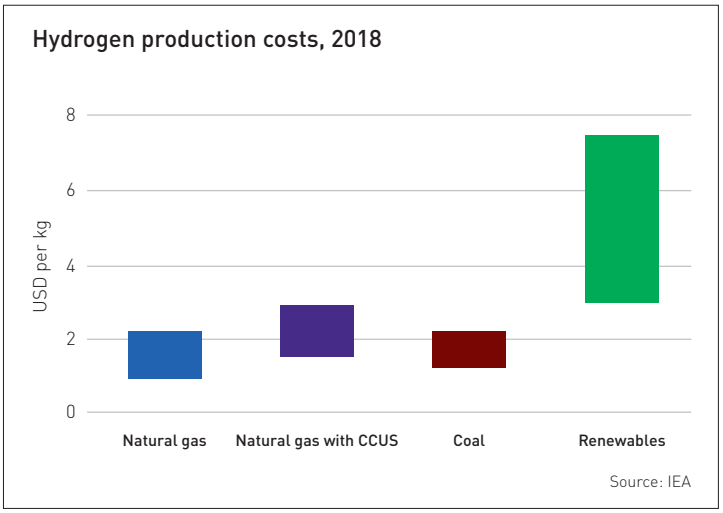
[17] The IPCC Special Report on Global Warming of 1.5°C, the IEA World Energy Outlook and the European Commission's 2050 long-term strategy all show that CCS is essential to meet the 1.5°C target. The TEG Technical Annex on taxonomy also stresses the role of CCS (March 2020).

[18] The IOGP-coordinated report 'The Potential for CCS and CCU in Europe': The 31st Madrid Forum invited IOGP to coordinate a report on the potential of Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) technologies, including technical, economic and public acceptance considerations, working with all interested stakeholders. https://ec.europa.eu/info/sites/info/files/iogp_-_report_-_ccs_ccu.pdf

The 2030 Climate Target Plan should underpin the targets set by Member States in the context of the SET Plan for CCU and CCS to anticipate the development of CCS projects in the 2020s and help accelerate the pre-commercial demonstration and deployment of key low-carbon technologies. Indeed, further action is needed now, and infrastructure decisions will be required in the coming years, for innovative low-carbon technologies to reach scale in time to deliver emission cuts by 2030 and deep decarbonisation by 2050.

b) Market-based and technology neutrality as driving principles to develop the EU hydrogen economy

As IOGP, we welcome the EU vision to develop hydrogen, which is also reflected in the NECPs in which 22 Member States foresee a role for hydrogen in meeting their decarbonisation objectives[19]. These commitments should be considered in the impact assessment, for example in the scenario focusing on NECPs.



Clean hydrogen is important to enable a competitive and clean EU industrial base. To quickly develop hydrogen markets at the scale required, Europe will need hydrogen produced from natural gas with CCS and methane pyrolysis in addition to hydrogen produced from renewables to establish a hydrogen economy with competitive value chains. These types of hydrogen can contribute to the delivery of the EU 2030 objective. Scaling up clean hydrogen from renewables requires large amounts of renewable electricity. To put this into perspective, for example the German chemical industry sector alone would need more than 600 TWh renewable electricity to meet its potential future clean hydrogen demand to decarbonise its production. This is three times as much as the current total German renewable electricity production. Today, hydrogen produced from natural gas delivers the lion's share of industrial hydrogen, while hydrogen from renewables is produced primarily in pilot demonstration projects and for transport refuelling stations. Europe's energy-intensive industries will require much larger volumes of hydrogen with a lower CO_2 footprint than is currently produced[20]. According to the IEA Report on hydrogen, costs ($/kg) to produce hydrogen from natural gas with CCUS are considerably lower than those for hydrogen using renewable electricity and the electrolysis of water.[21]

Hydrogen can be applied at an industrial scale today with proven CCS technologies providing up to a 90%–97% decarbonisation rate and, therefore, has a key role to play in the timely development of markets and infrastructure. While the costs of renewable hydrogen production are expected to decrease, and its scalability, increase, with research, development and deployment, it will still be crucial to take into careful consideration the availability of renewable electricity for hydrogen production. This is particularly true in the 2030 time frame, given the envisaged expansion in demand for electricity for transportation and industry. Hydrogen can supply energy to sectors that would otherwise be difficult to decarbonise (e.g. industry and heavy transport) or sectors that will take considerable time and costs (e.g. home heating). The natural gas reforming process generates a CO2 stream which, due to its high concentration, is highly suitable for implementing CCS.

c) Leverage existing assets

The EU should leverage the existing natural gas system as a key enabling step to meet its climate objectives. The use of existing gas infrastructure for clean hydrogen can save time and costs while reducing the requirement to dramatically expand the power transportation infrastructure, which is an issue in some Member States that faces public acceptance challenges. The parallel development of a dedicated hydrogen infrastructure and the ability to blend hydrogen with natural gas (so-called "hythane gases") are important. Blending can provide an initial demand and provide a balancing function, and it should be accepted in the natural gas system, provided that this is compatible with the quality requirement of end users.

[19] See IOGP's (April 2020) assessment of NECPs: https://www.oilandgaseurope.org/wp-content/uploads/2020/04/NECPs-Factsheet-v2.pdf.
[20] See the High-Level Group on Energy-Intensive Industries (2019), 'Masterplan for a Competitive Transformation of EU Energy- Intensive Industries Enabling a Climate-Neutral, Circular Economy by 2050': https://ec.europa.eu/docsroom/documents/38403
[21] https://www.iea.org/reports/the-future-of-hydrogen/.

The rapid deployment of a hydrogen market and infrastructure at scale based on natural gas can also facilitate and support the development of renewable hydrogen generation. Larger amounts of hydrogen from electrolysis can enable electricity storage using gas infrastructure (including gas storage facilities). The use of the existing gas infrastructure for low-carbon gases saves time and costs while reducing the requirement to dramatically expand the electricity grid transportation infrastructure, which is an issue in some Member States that faces public acceptance challenges.

We also support a limited review of EU gas legislation and network codes to determine whether the provisions are fit for purpose for new gases, including hydrogen. As an example, transmission and distribution are defined in the current Gas Directive as 'the transport of natural gas'. This appears to be too restrictive and should be expanded to include new gases. However, any review should not roll back the achievements of the natural gas market. Therefore, future amendments should be strictly limited to their purpose.

Conclusions

The European upstream oil and gas industry shares the world's ambition to reach the Paris Agreement's goals and supports the EU's objective of climate neutrality by 2050. To turn this into a success story for each citizen, every Member State and the EU as a whole, we need to create the right enabling conditions and incentives for the coming decades. To ensure a just transition, where truly no one is left behind, adequate EU-level funding, flexibility and realistic goals have to be set and transparently communicated to the public.

Therefore, we encourage the Commission to consider the following points for effective climate action to get to 2030 and beyond:

- Focus on enabling and coherent policies to deliver the 2030 targets that will guarantee a stable and predictable investment climate.
- Incorporate a strong economic pillar to avoid carbon/investment leakage or the offshoring industry.
- Consider all energy carriers and technologies to achieve the EU targets while ensuring just and affordable energy for citizens and the industry.
- Disclose policy assumptions and results of the modelling exercise, such as costs, benefits and potential trade-offs.

The European upstream oil and gas industry stands ready to provide further input to the upcoming consultations and play its role in delivering low-carbon solutions aimed at tackling climate change.

Annex I – Supporting materials:

- **IOGP response to Consultation on the Energy System Integration:** https://www.oilandgaseurope.org/wp-content/uploads/2020/05/IOGP_Energy-Sector-Integration-__response-consultation.pdf
- **IOGP response to the Roadmap/IIA on the EU Hydrogen Strategy:** https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12407-A-EU-hydrogen-strategy/F524251
- **IOGP response to the Roadmap on FuelEU Maritime:** https://www.oilandgaseurope.org/wp-content/uploads/2020/04/FuelEU-Maritime-Paper.pdf
- **Initial views on TEN-E Guidelines**. Regulatory changes will be necessary to enable the roll-out of infrastructure for CCS and hydrogen. This paper outlines our initial feedback to the upcoming evaluation and review of the Regulation on guidelines for Trans-European Energy Infrastructure (TEN-E): https://www.oilandgaseurope.org/wp-content/uploads/2020/04/IOGP-initial-views-on-TEN-E-guidelines-paper.pdf
- **New and old CCS projects in Europe**: CCS failed to live up to its potential during the previous investment cycle (2009-2015). This paper outlines what has changed since then in terms of regulatory context and the development of new business models for CCS, making the case for CCS as a key component in reaching the EU's long-term climate objectives: https://www.oilandgaseurope.org/wp-content/uploads/2020/04/New-and-old-CCS-projects-in-Europe-paper.pdf
- **Policy matrix: key recommendations on CCS in the current and future EU legislative framework**: This document provides an overview of existing EU legislative measures, highlighting for each of them the key changes needed to enable the development of CCS in Europe at larger scale: https://www.oilandgaseurope.org/ccs-in-the-current-and-future-eu-legislation-paper/
- **Factsheet - NECPs**: IOGP assessed the final National Energy & Climate Plans (NECPs) of EU Member States. The factsheet shows what role Member States see for exploration and production, the use of oil and gas, and CCS and hydrogen technologies in the 2030 perspective: http://www.oilandgaseurope.org/wp-content/uploads/2020/04/NECPs-Factsheet-v2.pdf
- **IOGP coordinated report 'The potential for CCS and CCU in Europe':** The 31st Madrid Forum invited IOGP to coordinate a report on the potential of Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) technologies, including technical, economic and public acceptance considerations, working with all interested stakeholders. https://ec.europa.eu/info/sites/info/files/iogp_-_report_-_ccs_ccu.pdf
- **IOGP CCS Map** which provides An overview of existing and planned Carbon Capture and Storage facilities in Europe https://www.oilandgaseurope.org/wp-content/uploads/2020/06/Map-of-EU-CCS-Projects.pdf
- **The Hydrogen for Europe pre-study** has been undertaken with the purpose of assessing current knowledge about the potential hydrogen has to decarbonise the European economy. http://www.oilandgaseurope.org/wp-content/uploads/2020/01/IOGP_Hydrogen-for-Europe-Final-report-of-the-pre-study_reportstudy.pdf