International Association of Oil & Gas Producers

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IOGP views on State aid for environmental protection and energy (EEAG)

The International Association of Oil & Gas Producers' (IOGP) member companies account for approximately 90% of oil and gas produced in Europe. IOGP supports the goals of the Paris Agreement and the EU's objective of climate neutrality by 2050, and will work with policymakers to help create the measures which can enable the energy transition. Many challenges must be overcome to meet this objective, and the energy transition will require significant investments in low-carbon technologies and effective policies driving their uptake.

IOGP believes that public support should concentrate on promising, innovative and scalable technologies that facilitate large-scale carbon management projects. This should be aimed at allowing for European industries to deliver the scale of projects required to meet the EU's climate objectives, while, as a priority, maintaining competitiveness, keeping existing and creating new jobs. This is particularly important as the EU plans to recover from the COVID-19 crisis.

In the context of the revision of the Guidelines on State aid for environmental protection and energy (EEAG), the below recommendations focus on adapting the EEAG to ensure the future contributions of carbon capture and utilisation or storage (CCU and CCS) and low-carbon hydrogen from natural gas with CCS to the achievement of the EU climate neutrality by 2050 are adequately included. In addition, the EEAG should facilitate the safe, responsible and sustainable production of oil and gas in Europe, which will continue to be required during the transition and provide the basis for the development of many necessary low-carbon technologies and their supply chains.

1. Adapting the EEAG to new developments in carbon capture and utilisation or storage (CCU and CCS)

A range of scenarios have shown that CCS is an integral part of meeting the targets set under the Paris Agreement, including the IPCC's SR1.5[1] and the IEA's 2020 World Energy Outlook[2]. The Commission's 2030 Climate Target Plan impact assessment[3] and 2050 long-term strategy[4] equally show that CCS will be necessary to achieve the EU's energy and climate objectives. With State aid assistance, alongside appropriate carbon pricing measures through the EU ETS, widespread CCS investment and deployment will help deliver on energy and climate objectives, facilitate the uptake of both renewable hydrogen and low-carbon hydrogen from natural gas with CCS, and enable negative emissions.

[1] IPCC (2018): Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development, p. 135. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*

[2] IEA (2020): World Energy Outlook 2020.

[3] SWD(2020) 176 final: Impact assessment accompanying the 2030 Climate Target Plan

[4] COM(2018) 773 final: A Clean Planet for all – A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy.

The current EEAG recognise CCS as *"a technology that can contribute to mitigating climate change. In the transition to a fully low-carbon economy, CCS technology can reconcile the demand for fossil fuels, with the need to reduce greenhouse gas emissions"*. The Guidelines also correctly note that *"in some industrial sectors, CCS may currently represent the only technology option able to reduce process-related emissions at the scale needed in the long term"*. The EEAG therefore allow for investment aid of up to 100% of eligible costs to be supported as compatible with the Treaty. Likewise, energy infrastructure also allows for 100% of eligible costs to be covered by investment aid. **These elements should be maintained in the revision of EEAG**. Furthermore, the Guidelines should also recognise that the design and focus of new CCS projects have changed, and innovation in CCS business models has shifted the focus away from single emission sources to industrial clusters linked with CCS hubs[5].

To help encourage investments in CCS, the EEAG should be adapted as follows to enable a flexible approach to both investment and operation aid in the CCS chain:

- **Applications in hard-to-abate sectors**: When the 2014-2020 EEAG were drafted, CCS was primarily seen as a technology to produce low-carbon electricity with CO_2 transport and storage infrastructure tied to a gas- or coal-fired power plant. While CCS is an important option to decarbonise electricity, recent studies have shown that CCS must also be considered at the industrial cluster level.[6]
- **Low-carbon hydrogen production**: CCS enables the production of low-carbon hydrogen from natural gas reforming. Low-carbon hydrogen again allows for extending the climate benefits of CCS beyond the power sector, as it can support the decarbonisation of the EU's industrial, transport, power and heating sectors while facilitating the uptake of both renewable and low-carbon hydrogen in the energy system. The role of low-carbon hydrogen from natural gas with CCS in the EEAG should be clarified, and low-carbon hydrogen should be treated on an equal footing with hydrogen from renewable electricity in terms of State aid eligibility.
- **New business models and the value of shared CO_2 infrastructure**: When the 2014-2020 EEAG were drafted, CCS projects were envisaged as virtually integrated projects, with all parts of the CCS value chain (capture, transport and storage of CO_2) integrated in a single project. However, alternative business models with a disaggregated value chain have more recently become common. For example, for the decarbonisation of industrial clusters, CCS transport and storage infrastructure will most likely receive CO_2 from multiple capture facilities. The current EEAG do not consider how the construction or retrofitting of such shared CCS infrastructure may benefit the decarbonisation of several industrial processes. **CO_2 transport and storage infrastructure should therefore be well included in the infrastructure section of the revised EEAG**.
- **CO_2 transport by ship**: An option for new CCS projects across Europe is to base CO_2 transport on shipping solutions (as is the case with the Northern Lights project, which has PCI status[7]). However, the EEAG focuses on transport by pipelines. CO_2 transport by ship is a flexible transport option, which will be important in the CCS scale-up phase. **CO_2 transport by other methods (e.g. shipping) in addition to pipelines should therefore be included in the revised EEAG and considered eligible for State aid**. This would be important to ensure that shipping is treated as an equal alternative to pipelines, and to avoid ship-based CCS projects facing difficulties in accessing public funding, which could potentially hamper the development of CCS in Europe.

[5] IOGP (2020): New and old CCS projects in Europe: What's different this time?
[6] See e.g. Gas for Climate/Navigant (2019): The optimal role for gas in a net-zero emissions energy system; IEA (2019): Transforming industry through CCUS; IEA (2019): The future of hydrogen; SINTEF & IFPEN (2019): Hydrogen for Europe pre-study.
[7] European Commission (2019): 4th Union list of projects of common interest.

IOGP recommendations for adapting the EEAG to CCS and CCU:

a) **Enabling a flexible approach to both investment and operation aid in the CCS chain**: The EEAG need to be updated to allow for a wider range of circumstances and business models. This may need to involve flexible aid for both investment and operating. The policy recommendations outlined in the IOGP-coordinated industry report *The potential for CCS and CCU in Europe*[8] should be considered in this context, in particular Carbon Contracts for Difference (CCfDs) and tax incentives for CO_2 storage.

b) **Incorporating the construction or retrofitting of shared CCS infrastructure**: The EEAG do not currently consider how enabling the retrofitting of existing infrastructure or the construction of new infrastructure for CO_2 transport and storage may benefit the decarbonisation of several industrial processes. This will be important to reflect in the infrastructure section of the revised EEAG.

c) **Incorporating the transport of CO_2 for storage by other modes of transport (e.g. shipping) in addition to pipeline**: The definition of energy infrastructure concerning CO_2, as defined in part 1.3 (§31d) of the EEAG only concerns pipeline networks, not ship-based solutions. At the same time, the chapter on aid to CCS in part 3.6 (§164) allows for State aid allows for the transport of CO_2 without providing a definition of CO_2 transport modes. It is therefore unclear that ship-based solutions to CO_2 transport for storage can receive State aid. The definition of energy infrastructure in the EEAG should be modified to include the transport of CO_2 by other modes than pipeline (e.g. shipping). To ensure coherence between various EU policy tools, modification to include CO_2 transport by other modes of transport in addition to pipeline should also be made in the EU ETS Directive, MRR Regulation, TEN-E Regulation and CCS Directive when revised.

d) **Recognising CCU and negative emissions technologies**: The current EEAG do not recognise CCU technologies. We encourage the Commission to define a methodology which enables a quantification of the climate abatement potential of different CCU technologies to ensure that the future EEAG will facilitate the channelling of State aid to these technologies. Likewise, there are limited options for enabling negative emissions. Land-use change and afforestation can and must play a key role, as can bioenergy coupled with CCS (BECCS) and the direct air capture of CO_2 combined with CCS (DACCS)[9]. The updated EEAG should reflect this wide variety of potential uses of CCS technology.

2. Incorporating low-carbon hydrogen from natural gas with CCS in the EEAG

Hydrogen is well suited to be a key low-carbon energy carrier which can be produced both from renewable electricity and from natural gas with CCS, resulting in a mix of production technologies. It is in this perspective that nearly all EU Member States plan for hydrogen in their National Energy and Climate Plans, and several also plan for hydrogen from natural gas with CCS or CCU[10]. Technology neutrality on the EU level is crucial to successfully support the Member States' national hydrogen strategies, as they vary in their approaches to hydrogen production and scale-up.

Across Europe, a number of large-scale projects for low-carbon hydrogen production from natural gas with CCS are planned. For example, the Magnum project[11] in the Netherlands will convert a natural gas-based power plant to combust hydrogen, and the H2morrow project[12] in Germany will provide low-carbon hydrogen for industrial uses. In terms of industrial clusters, the CCS projects in Rotterdam (Porthos) and Antwerpen (Antwerpen@C)[13] includes the capture of CO_2 from existing natural gas reformers to produce low-carbon hydrogen for industrial uses. Likewise, the Preem refinery in Sweden will apply CCS to its existing natural gas reforming unit to produce low-carbon hydrogen.[14]

[8] IOGP (2019): The potential for CCS and CCU in Europe.
[9] For an overview of Negative Emission Technologies (NETs), see Environmental Research Letters (2018): Negative emissions—Part 1: Research landscape and synthesis.
[10] IOGP (2020): Assessment of National Energy and Climate Plans.
[11] Magnum project information available here.
[12] H2morrow project information available here.
[13] Porthos project information available here and Antwerpen@C here.
[14] Preem CCS project information available here.

As recognised in the EU Hydrogen Strategy, hydrogen will be key to reduce emissions in hard-to-abate sectors. Hydrogen is also central to the Strategy for Energy System Integration due to its cross-sectoral potential. The importance of both hydrogen and CCS is furthermore confirmed by the impact assessment accompanying the 2030 Climate Target Plan, which shows that a decarbonised energy system will require going beyond electrification and that further deployment of both renewable and low-carbon fuels will be needed in order to meet increased climate ambitions.[15]

The adaptation or construction of infrastructure to accommodate future hydrogen volumes will require substantial State aid, and the EEAG should be tailored to support this while ensuring that both renewable and low-carbon hydrogen can compete on a level playing field.

IOGP recommendations for incorporating low-carbon hydrogen from natural gas with CCS in the EEAG

a) **Enabling a flexible approach to both investment and operation aid in the low-carbon hydrogen chain**: Similar to the above section on CCS, we recommend that the EEAG are updated also to allow for a wider range of circumstances and business models for low-carbon hydrogen. CCfDs and flexible aid for both investment and operating should be considered in this context.

b) **Ensuring alignment between the revised EEAG and updated gas market rules**: The forthcoming revision of EU internal gas market rules will, inter alia, establish a regulatory framework for renewable and low-carbon gases (including hydrogen). The EEAG should be in line with this framework, as State aid will be instrumental for major renewable and low-carbon gas projects and investments in the adaptation of the existing gas infrastructure to receive low-carbon gases.

c) **Incorporating renewable and low-carbon hydrogen energy infrastructure**: Hydrogen, or renewable and low-carbon gases in general, are not explicitly covered in any of the current sections of the EEAG. Hydrogen could potentially be considered under the generation adequacy chapters, given the vast scope of potential hydrogen applications in the energy system. However, hydrogen is not included in in the definition of energy infrastructure in part 1.3(§31), which only outlines the power, oil, gas and CCS sectors. This hinders future hydrogen projects from qualifying for State aid as energy infrastructure projects. The EEAG should incorporate hydrogen (in a technology neutral manner) explicitly in the definition of energy infrastructure – or a separate chapter on hydrogen should be created, in line with the forthcoming gas regulatory framework. Furthermore, the additional conditions for individually notifiable aid listed in part 3.2.1.2(§33) of the EEAG (abatement technologies; existing Union standards; future Union standards) are not well coordinated with the chapters on energy infrastructure and generation adequacy. The revised EEAG should include the contributions of both hydrogen and CCS infrastructure to decarbonisation.

d) **Assessment criteria for renewable and low-carbon gases (including hydrogen):** IOGP is strongly in favour of a technology neutral approach that creates a level playing field for all low-carbon technologies, as this would enable the scale-up of the most promising technologies while allowing for a balanced and cost-efficient approach to decarbonisation. Assessment criteria for low-carbon gases (including hydrogen) in the context of the EEAG should therefore be based on life-cycle assessment of GHG emission performance, enabling renewable and low-carbon hydrogen to compete on a level playing field.

e) **Ensuring a level playing field between renewable and low-carbon hydrogen**: The EEAG should ensure that all hydrogen production technologies which can deliver significant GHG emission reductions at a competitive price are enabled to compete on a level playing field. On both capital expenditure and operational costs, the EEAG should ensure that renewable and low-carbon hydrogen are treated equally.

[15] SWD(2020) 176 final: Impact assessment accompanying the 2030 Climate Target Plan (p.12).

3. Adapting the EEAG to facilitate the safe, responsible and sustainable production of oil and gas in Europe

Energy security in the EU is dependent on maintaining a wide range of diverse sources and technologies. As well as delivering on the objective of climate neutrality by 2050, EU energy policy also needs to provide citizens and businesses with an adequate level of confidence in security of supply including a willingness to facilitate indigenous European production. Energy production is also an important element of the European industrial base and supports a wider supply chain which will further provide the basis for critical energy infrastructure and the development of future capabilities relating to low-carbon technologies.

The European upstream oil and gas industry has environmental and safety standards amongst the highest in the world. In 2018, GHG emissions per unit of hydrocarbons produced in Europe were ca. 40% lower than the global average.[16] It is also a critical industry, and its importance has been confirmed in the context of the COVID-19 crisis.[17] According to the Commission, the health and economic crisis has been a reminder of how vital reliable access to energy and the reliability of critical supply chains is for European citizens and businesses.[18] The crisis has furthermore accentuated the need for Europe to maintain its industrial capacity and, indeed, repatriate industrial capacity and reverse some of the outsourcing of activities. In the context of recovery from the COVID-19 crisis, the European oil and gas industry can contribute with the supply of oil and gas with a lower environmental footprint and human and financial capital for the development of technologies such as CCS and low-carbon hydrogen from natural gas with CCS.

EU energy policy has been successful so far in largely avoiding the outsourcing of production of oil and gas, with 23% of oil and 46% of natural gas produced in Europe (including Norway and the UK).[19] This increases security of supply and competition between sources while reducing transport costs and associated emissions. Meanwhile, continuous improvement in environmental performance needs to remain at the heart of any oil and gas producing company including investment in step-change emission reduction through, for example, extending affordable electricity supply to offshore assets.

The revised EEAG should enable further emission reductions from oil and gas produced in Europe, and allow for building on the industry's experience and assets to deliver low-carbon solutions which are "Made in Europe".

[16] IOGP (2020): Environmental performance indicators – 2018 data.
[17] See IOGP COVID-19 Updates: Industry response and impact.
[18] SWD(2020) 104 final: Energy Security: Good practices to address pandemic risks.
[19] IOGP (2019): Global Production Report 2019.

IOGP recommendations for adapting the EEAG to the safe, responsible and sustainable production of oil and gas in Europe:

a) **Electrification of oil and gas platforms**: Annex 3 of the EEAG contains a list of energy consuming sectors which are eligible for aid in the form of reductions or removal of specific charge which is levied from electricity consumers on top of the electricity price as described in Section 3.7.2. The production of crude oil and natural gas has not been included on this list, as oil and gas platforms have traditionally been producing their own electricity on site. However, an important measure to reduce emissions from oil and gas produced in Europe could be connecting platforms to onshore networks or sources of renewable electricity. To facilitate the electrification of platforms, the production of crude oil and natural gas should be included in Annex 3 and appropriate modifications to Annex 4 to reflect the calculation of electro-intensity.

b) **Reuse and repurposing of oil and gas infrastructure**: The EEAG should be adapted to ensure that the reuse of existing oil and gas infrastructure for the purpose of producing, transporting or storing low-carbon gases (including hydrogen) or transporting CO_2 for utilisation or storage is supported.

c) **Definition of fossil fuel subsidies**: We understand, following the publication of the State of the Energy Union 2020 report, that the Commission will in cooperation with Member States reinforce actions to reduce fossil fuel consumption and to phase out fossil fuel subsidies, and that this could include considering further measures to ensure coherence among EU policies and addressing the ambition to end fossil fuel subsidies in the legislative review of the State aid Guidelines. **In this context, it will be important to ensure that CCS is eligible for State aid when applied to natural gas. For example, electricity produced from a natural gas-fired power plant with CCS should be eligible for State aid, as should the production of low-carbon hydrogen from natural gas with CCS. Likewise, support relating to the reduction of emissions from production should equally be considered as eligible.**

d) **Capacity mechanisms**: IOGP supports the Commission's approach on the assessment of capacity mechanisms which has been undertaken so far and which needs to be in line with existing legislation.[20] We are convinced that a close cooperation between the Commission and EU Member States will ensure that capacity mechanisms are well-designed and fit for purpose. In this context, natural gas-based power production (alone and in combination with CCS) should remain eligible to participate in capacity mechanisms.

[20] With reference to the Electricity Regulation (EU) 2019/943.

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