ZEP response to the Inception Impact Assessment (IIA) on 'Hydrogen and gas market decarbonisation package'

About the initiative

Reaching climate neutrality by 2050 will require all readily available, scientifically proven, net-zero compatible technologies to be developed and deployed at scale. Thorough and scientific carbon accounting needs to be at the basis of any regulatory framework that will support the use of renewable and low-carbon gases, including low-carbon hydrogen produced with CCS. ZEP stresses that reaching net-zero greenhouse gas (GHG) emissions by 2050 in the EU should be the ultimate objective and the main driver of the climate action.

A technology-neutral and science-based approach should guide the trajectory towards this goal and put the EU on the right track to meet the higher 2030 climate target. In this sense, the European Taxonomy for sustainable activities clarifies that only those economic activities making 'a significant contribution' to at least one of the six environmental objectives[1] while doing 'no significant harm' to the others can be labelled as sustainable.

When revising the Regulation 715/2009 on the conditions for access to the natural gas transmission networks, it is crucial that all gases, including renewable, low-carbon gases and CO2, are acknowledged within the scope of the regulation. New open-access CO2 networks that capture and integrate the emissions from industrial sectors and installations can help to further promote energy systems integration, creating more optimised and integrated EU energy infrastructure. It will be important to ensure that all relevant gas infrastructure operators are enabled to transport CO2, in parallel with renewable and low-carbon hydrogen under the Gas Directive. It is also important to safeguard that National Regulatory Authorities (NRAs) have revised mandates that enable the oversight of CO2 transport, onshore and offshore.

CO2 infrastructure, including transportation networks, is therefore a prerequisite for large-scale decarbonisation and it plays an important part in a net-zero scenario. Together with the revision of the EU ETS and the TEN-E regulation[2] – where all modalities for CO2 transport should be taken into account, this outcome would allow all regions in Europe to have cross-border access to safe geological storage, thus delivering cost-efficient opportunities for large-scale decarbonisation. Given that storage sites are not evenly distributed in Europe, it will be crucial to enable all modalities of CO2 transport, connecting CO2 emitters to storage sites. This will have a positive effect on the full value chain – incentivising CO2 capture projects, reducing overall costs, and delivering climate change mitigation.

[1] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance), 2020

[2] ZEP response to the adopted act: Proposal for a Regulation on guidelines for trans-European energy infrastructure and repealing Regulation, 2021; ZEP response to the EU ETS Consultation, 2021.

Volumes of low-carbon hydrogen can be made available from natural gas with CCS, as soon as CO2 infrastructure is in place[3]. As stated in the European Hydrogen strategy, they will play a role in the industrial decarbonisation, as well as for other energy-intensive sectors where direct electrification would be too costly. The Commission should also consider retrofitting and repurposing existing natural gas infrastructure to support the development of dedicated hydrogen infrastructure. In this respect, CO2 infrastructure should be developed in parallel to hydrogen infrastructure. This will enable the production and transport of early, large-scale volumes of low-carbon hydrogen and limit initial infrastructure costs.

To tackle and reduce emissions in energy-intensive industries, CCS technologies will be crucial. Developing, deploying and testing them at scale in this decade is vital to enable European industries to undertake a cost-efficient pathway to climate neutrality by 2050 and to support the pathway to a higher 2030 climate target. CO2 infrastructure and CCS can also enable clean flexible power generation – with an increasing role of RES in power generation, CCS can act as baseload provider and enable clean power generation when electricity from renewable energy sources is not available.

Policy framework at the EU level needs to be consistent, offering long-term perspectives for decarbonisation for industries, power plants and all stakeholders involved and adopting an integrated approach when planning for future infrastructure developments. At the same time, the Commission should build the foundations and incentivise a market for low-carbon products.

As shown by the study undertaken by the CCUS SET-Plan 'Review of CCU and CCS in future European decarbonisation scenarios', examined modelling scenarios that are compatible with the objective of climate neutrality by 2050 indicate that CCS will be needed and essential for Europe: "In the 1.5°C scenarios, the median CO2 captured by CCS is 230-430 MtCO2/year in 2030, increasing to 930-1200 MtCO2/year by 2050. In the 2°C scenarios, the median CO2 captured by CCS is lower with 35-100 MtCO2/year in 2030, increasing to 600-930 MtCO2/year by 2050".

About the Zero Emissions Platform

The Zero Emissions Platform (ZEP) is a European Technology and Innovation Platform (ETIP) under the Commission's Strategic Energy Technology Plan (SET-Plan) and acts as the EU's technical adviser on the deployment of Carbon Capture and Storage (CCS), and Carbon Capture and Utilisation (CCU) under Horizon2020 R&I programme (grant agreement 826051).

ZEP supports the European Union's commitment to reach climate neutrality by 2050, defined as net-zero greenhouse gas (GHG) emissions by 2050. To this end, CCS technologies represent readily available and cost-efficient pathways for the decarbonisation of industrial and energy sectors in the European Union. Some applications of CCU – where CO2 is stored in a manner intended to be permanent – can also contribute to this goal.

[3] Zero Emissions Platform, The crucial role of low-carbon hydrogen production to achieve Europe's climate ambitions. A technical assessment, 2021