

ZEP response to the adopted [act](#): Proposal for a Regulation on guidelines for trans-European energy infrastructure and repealing Regulation (EU) No. 347/2013

Key messages

- As confirmed by the revision, carbon dioxide networks must remain a priority area in the Regulation (EU) No. 347/2013 on guidelines for trans-European energy infrastructure (TEN-E Regulation).
- For many planned and soon-to-be operational CCS and CCU projects in Europe, the **failure to recognise all modalities of CO₂ transport other than pipeline leaves many open questions and risks**. Upcoming CCS and CCU projects, which rely on CO₂ transport by ship, will be jeopardised.
- The **exclusion of CO₂ storage is problematic**, as CO₂ storage is an essential component of CCS projects and the real enabler for mitigation. For energy-intensive industries, European CO₂ transport and storage infrastructure will enable CO₂ emitters in industrial hubs and power plants to have access to storage sites, thus achieving cost-efficient decarbonisation whilst maintaining industrial activity¹ and preserving existing jobs.
- Timely development of this infrastructure is also critical to kick-start a clean hydrogen economy for the EU, where early, large-scale volumes of low-carbon hydrogen are produced and delivered for industrial and residential use.

Comments to the European Commission's Impact Assessment and Proposal for a Regulation on guidelines for trans-European energy infrastructure and repealing Regulation (EU) No. 347/2013

Following the European Commission's presentation of a revised TEN-E regulation and related impact assessment, the Zero Emissions Platform (ZEP) stresses the importance of including all modalities of CO₂ transport, as well as CO₂ storage, in the revised regulation. The revised TEN-E regulation should drive the transition towards a climate-neutral economy, capitalising on the potential and opportunities of large-scale decarbonisation of European industrial and energy sectors. At a time where many industries and energy stakeholders – also represented in ZEP – look for ways to decarbonise their activity in a cost-efficient way, the European Union should strive to keep a technology-neutral approach.

It is critical that article 4.3 (c) of the TEN-E regulation and Annex II 5 (a) include:

- **CO₂ storage infrastructure** is as an essential part of the CO₂ infrastructure and component of a CCS project. CO₂ storage is a key element of delivering real climate change mitigation and it should receive funding as part of CO₂ infrastructure.

¹ Zero Emissions Platform, "[Climate Solutions for EU industry](#)", 2017

It is unclear why the revised regulation does not identify CO₂ storage infrastructure as a key component of a CCS project and consequently prevents it from applying for funding from the Connecting Europe Facility for Energy. Conversely, the revised regulation includes clear provisions for electrolyzers to qualify as infrastructure categories and, thus, are able to seek CEF-E funding. It is essential that a technology-neutral and scientifically-based approach is adopted when assessing low-carbon technologies that will support the EU's transition towards climate neutrality by 2050.

For a climate-neutral Europe, around 600 million tonnes of CO₂ per year of unavoidable emissions will need to be stored², involving the capture of just under 15% of annual emissions (based on 1990 levels). The steel industry³ alone estimates that 150-200 million tonnes of CO₂ transport and storage would be needed annually to become climate-neutral in 2050. In Europe, a total storage capacity of 300 GtCO₂ has been estimated⁴, with ongoing appraisal activities to identify investable storage sites. This shows that CO₂ storage can likely continue well beyond 2050.

The pathway towards climate neutrality will bring about a major transformation of energy-intensive industries. By providing a low-carbon, readily available and cost-efficient alternative, CCS can safeguard existing jobs, industrial activity and European industrial competitiveness in international markets while delivering sustainable growth.

- **All CO₂ transport modalities other than pipeline, including mobile assets** – ship, barge, truck, and train – allowing all European regions and industries to connect to the European infrastructure⁵.

Developing a European CO₂ infrastructure network is a no-regret investment opportunity. European industrial emitters can connect in a flexible and diffuse way to storage sites to decarbonise their industrial production, which is a key prerequisite to deliver a cost-efficient trajectory towards climate neutrality by 2050.

In this regard, the European Commission has informally clarified that mobile assets would be better treated under the Trans-European Networks for Transport (TEN-T) regulation (and invited to apply for funding under that). However, it remains unclear how CO₂ transport by ship would be addressed in the TEN-T regulation as the regulation does not provide a specific category for CO₂ infrastructure. ZEP believes that the TEN-E regulation remains the best place to address any matters arising from the development of CO₂ infrastructure, including the applicable modalities for CO₂ transport.

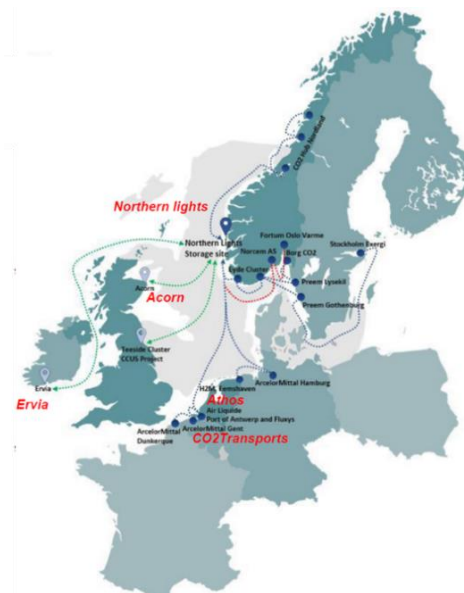
² Shell, [A climate-neutral EU by 2050](#), 2020

³ ArcelorMittal, [Climate Action in Europe](#), 2020

⁴ European Commission, [The Potential for CCS and CCU](#), 2019

⁵ [Non-paper on Carbon Capture and Storage \(CCS\)](#) by the Netherlands, Norway, Denmark and Sweden, 2020

Europe is well positioned to develop cross-border, shared CO₂ transport and storage infrastructure, both via pipeline and by other modalities such as ship, barge, truck, and rail. This would send a strong signal to private investors and industry. With secure access to storage sites, more CO₂ industrial emitters are likely to invest in capture projects, bringing down costs of capture technologies. Without the possibility to transport CO₂ by ship and other modalities, planned CCS and CCU projects would be put at risk of not becoming operational. This scenario must be avoided at all costs, as CCS and CO₂ infrastructure are prime options for the decarbonisation of energy-intensive industries, where electrification is too costly or not feasible.



In addition, by fulfilling early hydrogen demand, low-carbon hydrogen will give more time to plan and build the infrastructure required to scale up renewable hydrogen. Low-carbon hydrogen can be deployed relatively quickly and utilise current energy infrastructure – ensuring that electricity network planning and generation capacity construction can occur in the most cost-effective and joined-up way nationally and between member states. The electrification of many sectors and introduction of green hydrogen production will drastically increase demand on the electricity infrastructure and generation capacity and require further planning in the next decades.

- As the revised TEN-E regulation will drive the selection of the next Projects of Common Interest (PCIs), it is important that the **next PCI lists include cross-border CO₂ and hydrogen infrastructure projects** for further development and scaling up, which will ensure that the EU is on the right track to achieve climate neutrality by 2050.
- **The development of shared CO₂ infrastructure networks between hydrogen producing industrial regions underpins the future of an effective EU hydrogen economy.** Without these, renewable hydrogen will struggle to reliably produce the volumes of hydrogen required to enable at scale deployment of hydrogen in end-use sectors such as industry, transport, heating and power generation. Early volumes of low-carbon hydrogen can create a hydrogen market and infrastructure backbone which can pave the way for renewable hydrogen over time. Additionally, the European Commission should provide clear definitions of low-carbon and renewable gases based on thorough and transparent carbon accounting and robust lifecycle analysis. For these reasons, article 4.3 (d) should be amended to recognise low carbon hydrogen projects, as well as renewable hydrogen projects.

In some instances, investments to retrofit existing natural gas pipeline networks into CO₂ pipeline networks can be advantageous and cut initial costs of infrastructure. In this respect, the European Taxonomy for Sustainable Finance has included the retrofit of gas pipelines for low-carbon gas transportation as a sustainable investment in a net-zero economy.

Finally, it is important that the European Commission ensures a consistent and coherent regulatory framework among related pieces of legislation and funding mechanisms, which will provide private companies and investors with a solid basis for long-term investments.

About the Zero Emissions Platform (ZEP)

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, carbon capture and storage (CCS) and carbon capture and utilisation (CCU) technologies play a crucial role. These technologies represent a readily available, cost-efficient pathway for the decarbonisation of industrial and energy sectors in the European Union.