

Technology-neutrality and a long-term perspective

ZEP input ahead of the 'REPowerEU'

The Zero Emissions Platform (ZEP) supports the European Commission's aim to make the European Union independent from Russian fossil fuels well before 2030. In the midst of a geopolitical and energy crisis and ahead of the launch of the REPowerEU plan, ZEP reaffirms the need for all low- and zero carbon technologies – a technology-neutral and long-term approach to climate action in energy and industry is crucial to avoid jeopardising an already extremely challenging path towards climate neutrality and preserve industrial activity and employment.

All low- and zero carbon technologies are needed to reach climate neutrality

Achieving climate neutrality is a monumental political, economic, and technological mission. Trustworthy models indicate that, until 2050, annual investments in carbon capture and storage (CCS) must reach €12.3 billion in Europe to enable 1.5°C warming scenarios¹. All low- and zero carbon technologies are needed to reach this target. Ensuring fair competition between clean technology solutions will drive down prices and improve their climate change mitigation capacity.

All reliable modelling scenarios, including those from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency, consider the deployment of CCS and carbon dioxide removal (CDR) technologies as critical to reach climate neutrality by 2050²³. The 2022 IPCC report on climate mitigation states that:

- “Global rates of CCS deployment are far below those in modelled pathways limiting global warming to 1.5°C or 2°C”; and
- “Enabling conditions, such as policy instruments, greater public support and technological innovation, could reduce these barriers.”

It is urgent to deploy, make the technologies investable, and scale up during this decade. The IPCC report emphasises that “without immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C is beyond reach”. REPowerEU must not include short-term and counterproductive solutions in reaction to the current geopolitical and energy crisis. Clean technologies, including CCS, are becoming more and more affordable. Measures aimed at addressing the energy crisis should not favour polluting technologies to the detriment of clean and affordable solutions available today by distorting market signals.

What Europe needs is a predictable and long-term investment framework, embedded in an EU strategy for CCS technologies – setting out targets, enabling policies, funding programmes, research, and innovation (R&I) activities, etc. to achieve these targets. Substantial technology-neutral EU and national funding programmes are also indispensable to exploit the full potential of scientifically proven technologies, such as CCS and CDR.

¹ [Review of Carbon Capture Utilisation and Carbon Capture and Storage in future EU decarbonisation scenarios](#), University College London, 2020.

² [Climate Change 2022: Impacts, Adaptation and Vulnerability](#), IPCC, 2022.

³ [Carbon capture, utilisation and storage](#), IEA, 2022.

Preserving jobs and industrial activity

Deploying CCS and European CO₂ infrastructure today is a no-regret investment, enabling clean and competitive industrial and energy sectors, early large-scale low-carbon hydrogen, and CDR capacity. CO₂ transport and storage infrastructure is a core part of European Energy system integration: empowering emitters across Europe to transport captured CO₂ to safe storage is crucial. CCS will also enable clean flexible power in the European energy system, capable of absorbing demand shocks and filling the power generation gaps from solar and wind, as the share of renewable electricity grows in the EU energy mix.

CCS can enable economic activities across sectors to become sustainable. And for a just and cost-efficient transition towards net-zero, CCS must be a requirement for the licence to operate any power plant using fossil fuels. This will be crucial following the increased focus on imports of liquefied natural gas. Executive Vice-President Frans Timmermans stated recently to the European Parliament's ENVI Committee that hydrogen produced from fossil gas with CCS would be needed as a temporary solution in the future European energy system⁴.

CCS is indispensable for the industrial transition towards net-zero. Pathways including CCS represent the lowest-cost route to decarbonisation, stimulating economic growth, preserving existing jobs and creating new ones⁵. Studies show that:

- European jobs linked to CCS may amount to 150 000 in 2050⁶.
- In Germany alone, over 50 million tonnes of residual process CO₂ emissions would remain unabated without CCUS, risking about 3.5 million steel-related jobs, and several hundred thousand more in the chemicals and cement sectors⁷.
- CCS enables existing industries to continue to make a **sustained contribution to local economies** while transitioning to a net-zero economy. Not to mention the significant contributions in **innovation-led economic growth** enabled by these technologies⁸.

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).

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.

⁴ [Hydrogen will be 'pivotal element' in future economy, says EU climate chief](#), EurActiv, 2 May 2022.

⁵ [CCS for industry - Modelling the lowest-cost route to decarbonising Europe](#), ZEP, 2019.

⁶ [Industrial opportunities and employment prospects in large-scale CO₂ management in Norway](#), SINTEF, 2018.

⁷ [Klimapfade für Deutschland](#), BDI 2021.

⁸ [The Value of Carbon Capture and Storage \(CCS\)](#), Global CCS Institute, 2020.