Carbon Capture and Utilisation (CCU) should be recognised as a strategic net zero technology in the EU Net Zero Industry Act

The co-signatories of this letter call on Members of the EU Parliament and EU Member States to take position to include CCU technologies as part – along with CCS – of the list of *strategic net-zero technologies* in the Net Zero Industry Act (NZIA).

CCU technologies will enable the supply of renewable fuels and other alternative sources of energy, as well as commercial products such as plastics, concrete, and reactants for chemical synthesis.

CCU is of strategic importance to reach net zero objectives, and should be recognised as such also in the NZIA, considering that its relevance has been acknowledged by recent legislations and by EU funding mechanisms – in the EU Innovation Fund's third call for large-scale projects from July 2023, out of 41 projects selected, at least 10 projects were about CCU. These technologies represent an array of solutions critical for the achievement of the EU climate and energy ambitions, and will support both the realisation of EU hydrogen goals and a crucial element of the CO_2 value chain, as well as creating products that will displace fossil resources.

Allowing CCU projects to benefit from the priority status of a strategic net zero technology will help:

- Unleashing their potential for emission reductions and carbon circularity while maintaining and enhancing the skilled technical workforce in Europe.

- Ensuring the necessary predictability that these technologies need to be deployed by sending a clear signal and help provide investment certainty.

- Aligning the Net Zero Industry Act with the technological priorities in the recent Fit for 55 legislations

Setting the scene: net zero technologies VS strategic net-zero technologies

The proposal for a Net Zero Industry Act (NZIA) distinguishes between "*net-zero technologies*" and "*strategic net-zero technologies*". Technologies in the last category benefit from priority treatment from national authorities in terms of permitting procedures, public procurement or access to financing; in addition, they are also underpinned by a 40% EU annual manufacturing target (Art. 1(2)a).

To proceed with this selection, the European Commission relied on a set of criteria which can be summarised in three indicators:

- Technology Readiness Level (TRL) i.e., the assumed commercial availability/scale up potential, which should be above level 8.
- Contribution towards the GHG emissions reduction.
- Contribution towards the overall resilience of the EU economy.

Valuing the merit of the three indicators, the cosignatories underline that the assessment made for CCU technologies complies with the above requirements.

CCU: a manufacturing technology

According to the NZIA Staff Working Document (SWD(2023) 219 final), "*CCU was excluded from the list of strategic net zero technologies as it cannot be considered as a manufacturing technologies",* adding that *"similar important identified gaps as for the case of CCS does not exist for CCU technologies*".

The co-signatories underline that CCU is indeed "*a manufacturing technology*" as the essence of CCU is to transform captured carbon into added-value products. We consider that its exclusion from the list of strategic net zero technologies will endanger its development and, ultimately, hinder the achievement of the EU climate ambitions.

CCU technologies in EU policies

CCU technologies are not only recognised in the 6th IPCC Assessment report as **important technologies to mitigate climate change**[1] but are also promoted in a series of recent EU legislative efforts, including in **RED III**, **FuelEU Maritime** and **ReFuelEU Aviation**, by defining mandatory targets for CCU-derived fuels in order to reduce emissions notably in from hard-to-abate sectors, and REDII Delegated Regulation (EU) 2023/1185 created a common methodology to calculate climate benefits from CCU fuels; the new **ETS Directive** introduces new language on captured CO_2 that is converted into products – while future ETS revisions should ensure that all stakeholders along the CCU chain find clear incentives to invest and implement CCU solutions; in the **EU Carbon Removals Certification framework** proposal with permanent storage of atmospheric/biogenic CO_2 recognised in long-lasting products (e.g. mineralisation) as carbon removals activities; in the **Sustainable Carbon Cycles Communication** where CCU, CCS and carbon removals are qualified as "*innovative clean technologies*" with a dedicated target indicating that "*at least 20% of the carbon used in the chemical and plastic products should be from sustainable non-fossil sources by 2030*"; or in the upcoming **Industrial Carbon Management Strategy**, where in its call for evidence, the Commission explicitly "*recognises the role of carbon capture and storage (CCS) and carbon capture and utilisation (CCU), in particular in hard-to-abate industries*". To scale up the production and uptake of CCU products, it is important that these products become competitive on the global market. Further regulatory and financial support will be crucial to unleash their potential.

CCU technology readiness

CCU represents an array of technologies, **some of which are already commercially available** in Europe or globally[2]. This maturity is already acknowledged by the EU framework through the funding provided to CCU projects[3] by the Innovation Fund, recognising pre-commercial, first-of-a-kind maturity. A series of projects in the EU are expected to start operation within the next 2-3 years[4].

CCU contribution towards the overall resilience of the EU economy

CCU technologies increase the resilience of the EU economy and its industrial systems by durably storing CO_2 or solid carbon in material and by reusing captured carbon as an alternative carbon feedstock to produce fuels, chemicals and materials as replacement of fossil-based equivalents. By doing so, CCU contributes to EU's independence from (imports of) fossil resources and provides significant emission reductions. While CCU pathways – fuels, chemicals, mineralisation – have different climate impacts according to the carbon captured, what product it converted into and the lifetime of the products, all those pathways have a role to play in decreasing emissions because they enable to avoid emissions and achieve net reductions at the minimum – and in some cases lead carbon neutral products or even carbon removals. They should all be incentivised and supported by EU policies, as CCU increases circularity in manufacturing systems and contributes maintaining the EU leading role in clean technologies.

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[1] IPCC, 6th Assessment Report, Working Group 3, Mitigation of Climate Change, April 2022:
- "*Net zero CO_2 industrial sector emissions are possible but challenging (…). Primary production options include switching to new processes that use low to zero GHG energy carriers and feedstocks (e.g., electricity, hydrogen, biofuels and carbon dioxide capture and utilisation (CCU) to provide carbon feedstocks*".
- "*Many [end users] will require low GHG liquid and gaseous fuels, i.e., hydrogen, ammonia, and biogenic and synthetic low GHG hydrocarbons made from low GHG hydrogen, oxygen and carbon sources (the latter from CCU, biomass or direct air capture)*".

[2] E.g. Steelanol in Belgium, Fairfuel in Germany, G2L eFuels technology in Denmark, Sunfire in Germany or EU-based CCU technologies which reached commercial maturity but are moving outside the EU e.g. CRI's methanol plant in China or Norsk e-Fuel in Norway. And globally, e.g. LanzaTech, Infinium and Newlight Technologies in the US.

[3] E.g. AGGREGACO2, HySkies, C2B, AIR, CO2ncrEAT

[4] E.g. Columbus in Belgium with IPCEI status; FlagshipONE in Sweden