

Brussels, 23 June 2023

## CO<sub>2</sub> Value Europe's response to the Commission's call for feedback on the Net Zero Industry Act

### Background & context

CO<sub>2</sub> Value Europe is the European association representing the Carbon Capture and Utilisation (CCU) community in Europe and working for the recognition of CCU as an essential pathway to reach EU climate goals in 2030 and 2050. We represent more than 85 stakeholders along the entire CCU value chain.

Carbon Capture and Utilisation has a great potential in helping achieve a climate-neutral EU by capturing and transforming carbon thus providing a scalable alternative to fossil carbon as it is both available everywhere and does not put pressure on land uses.

### The IPCC highlights the role of CCU to replace fossil feedstock with renewable carbon

CCU technologies lead to reduction of CO<sub>2</sub> emissions and eventually substitution of fossil resources by non-fossil resources. As such, CCU provides permanent alternatives to fossil resources by using recycled carbon in carbon-containing everyday products.

The latest report from the IPCC indicates that *"Net zero CO<sub>2</sub> industrial sector emissions are possible but challenging. Energy efficiency will continue to be important. Reduced materials demand, material efficiency, and circular economy solutions can reduce the need for primary production. 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)"*<sup>1</sup>. The report further adds that: *"Carbon is a key building block in organic chemicals, fuels and materials and will remain important. In order to reach net zero CO<sub>2</sub> emissions for the carbon needed in society (e.g. plastics, wood, aviation fuels, solvents, etc.), it is important to close the use loops for carbon and carbon dioxide through increased circularity with mechanical and chemical recycling, more efficient use of biomass feedstock with addition of low GHG hydrogen to increase product yields (e.g. for biomethane and methanol), and potentially direct air capture of CO<sub>2</sub> as a new carbon source"*<sup>2</sup>.

In other words, the IPCC is highlighting the role for CCU in building carbon circularity and creating low-carbon containing products by reusing hard-to-abate emissions.

### CCU shouldn't be excluded from the strategic net zero technologies category by design

The European Net Zero Industry Act aims to help deploying net-zero technologies throughout Europe to help the EU economy and industries to decrease greenhouse gas (GHG) emissions. It sends a strong political signal for Europe to accelerate its climate transition, which we very much welcome.

The proposal distinguishes *net-zero technologies* from *innovative net-zero technologies* based on their Technology Readiness Level (TRL) – the former having TRL at least 8 and the latter below 8. CCU is

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<sup>1</sup> IPCC, 6<sup>th</sup> Assessment Report, Working Group 3, Mitigation of Climate Change, April 2022, TS77, L7-17

<sup>2</sup> IPCC, 6<sup>th</sup> Assessment Report, Working Group 3, Mitigation of Climate Change, April 2022, p. 81, L13-19

indeed included in this definition and since it encompasses a variety of technologies, certain CCU value chains can be considered net-zero technologies and others innovative net-zero technologies.

The proposal takes a step further defining another category for net-zero technologies, the net-zero 'strategic' projects, where when it comes to carbon capture, only Carbon Capture and Storage (CCS) technologies are considered and not CCU. This category will benefit from priority treatment from national authorities in terms of permitting procedures, public procurement, access to financing, etc. Article 10 of the Act lays down the criteria for the recognition of net-zero technologies as "strategic", i.e. they have to contribute to technological and industrial resilience, contribution to increasing manufacturing capacity of net-zero technologies, increasing sustainability, increasing workforce technical skills, and adopting low-carbon and circular manufacturing systems.

A reason provided in the Staff Working Document of the Net Zero Industry Act published by the Commission is that CCU *"cannot be considered as a manufacturing technology"* and that *"important identified gaps as for the case of CCS does not exist for CCU technologies"*. We do not believe either justification is substantiated, considering that CCU is about manufacturing added-value products from unavoidable CO<sub>2</sub>, and the fact CCU technologies are indeed mature should not exclude them from the strategic category – on the contrary.

**For the CCU community, it is hard to comprehend why CCU projects, while being recognised as net-zero technologies, are not considered as fulfilling the above-mentioned criteria, and thus are not included under the 'strategic project' category, contrary to CCS.** Even more when the inclusion of CCU in the 'strategic project' category would also help to ensure the 'strategic' nature of carbon capture technologies as such. Rejecting one finality of carbon capture could undermine the deployment of carbon capture as a whole: we need both CCS and CCU to develop capture technologies for different scales, and CCU will contribute to unlocking the full potential of carbon capture.

### **CCU technologies will contribute to decrease CO<sub>2</sub> emissions and reach Net Zero objectives**

CCU represents an array of technologies, some of which are not only already commercially available but also contribute to increasing the resilience of industrial production systems by reusing captured carbon and providing an alternative carbon feedstock to produce fuels, chemicals and materials and replace fossil-based equivalents. By doing so, they contribute to EU's independence from fossil resources, provide significant emission reductions (even carbon removals in some value chains depending on the carbon source and pathway), increase circularity in manufacturing systems and help maintaining both EU's leading role in cleantech and foster skilled workforce in Europe.

Not all CCU pathways are "net-zero" by essence, for example when reusing industrial CO<sub>2</sub> to make CCU chemicals and replace fossil resources, it contributes to GHG reduction, but it is not per say net zero. But all CCU technologies can become "net zero": for example by substituting industrial CO<sub>2</sub> when available with biogenic/DAC CO<sub>2</sub> to make those same CCU chemicals. This is why CCU shouldn't be excluded by design from the "strategic net zero technologies" category. CCU has a crucial role to play in helping a number of hard-to-abate sectors in particular to reach net zero targets.

## EU legislations already give CCU a key role in defossilising the economy: the Net Zero Industry Act should build on EU precedents

CCU is not only recognised in the 6<sup>th</sup> Assessment report of the IPCC as an important technological solution to mitigate climate change but has also been recognised in a series of legislative efforts within the realm of the EU Green Deal, precisely because of its role in reaching EU's climate goals. Some of the latest EU legislations & initiatives include:

- In its final legislations on **the Renewable Energy Directive (REDIII), FuelEU Maritime and ReFuelEU Aviation**, EU institutions created mandatory targets for CCU fuels to contribute to decrease emissions from hard to abate sectors like aviation, maritime, and industry at large
- In the **ETS revision** as adopted as EU legislation in 2023, EU authorities recognised the role for CCU for example by binding CO<sub>2</sub> permanently in construction products via mineralisation, and avoiding double counting of CO<sub>2</sub> for other CCU processes
- In its proposal for a **certification framework for carbon removals**, the Commission includes in the definition of removals the permanent binding of atmospheric or biogenic CO<sub>2</sub> in products, e.g. via mineralisation
- In the **Sustainable Carbon Cycles Communication**, the Commission refers to CCU, CCS and carbon removals, as *"innovative clean technologies"* and calls for *"at least 20% of the carbon used in the chemical and plastic products should be from sustainable non-fossil sources by 2030"*
- The European Commission, through the work of the CCUS Forum, announced the publication by the end of 2023 of a **strategy on Industrial Carbon Management**, specifically to explore the role of **CCU, CCS, and CDR pathways** and highlight the importance of both technological value chains to help decrease emissions from hard to abate sectors

Importantly, the Innovation Fund has been funding CCU projects ([AGGREGACO2](#), [HySkies](#), [C2B](#), [AIR](#), [CO2ncrEAT](#)), thereby recognising the maturity of the technology at pre-commercial, first-of-a-kind, TRL 8 level as per definition of eligibility for the Innovation Fund and aligned with the definition of net-zero technologies under the Act. Further CCU projects have reached maturity levels where the system is complete and qualified (e.g. [Steelanol](#) in Belgium, [Fairfuel](#) in Germany); European-based CCU technologies reach commercial maturity but are moving outside the EU (e.g. [CRI's methanol plant](#) in China); and a series of projects in EU are expected to start commercial operation within the next 2-3 years (e.g. [Columbus](#) in Belgium with IPCEI status; [FlagshipONE](#) in Sweden). While not all projects listed here are net zero, they all demonstrate that CCU technologies are mature and ready to be deployed at scale. All projects can become net zero because they can be substituting industrial CO<sub>2</sub> with biogenic CO<sub>2</sub> or CO<sub>2</sub> captured directly from the air.

The Net Zero Industry Act must build on those precedents and other EU initiatives, and include CCU as a strategic net zero technology in the legislative text.

**In order to reach Net Zero objectives in Europe, we need clear & systematic signals that all clean technologies will play a role to move away from the fossil economy. This is why we are urging EU policy-makers to reconsider the decision to leave out CCU from the strategic net-zero technologies category and allow CCU projects to benefit from the priority status so that they can realise their potential for emission reductions and carbon circularity as well as maintain and enhance the skilled technical workforce in Europe.**