

## **CO<sub>2</sub> Value Europe's response to the call for feedback on the delegated regulation specifying a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels**

We welcome the opportunity to share our comments on the [delegated regulation](#) establishing a methodology for assessing greenhouse gas emissions savings from renewable fuels of non-biological origin and from recycled carbon fuels.

CO<sub>2</sub> Value Europe is the European Association representing the Carbon Capture and Utilisation (CCU) community in Europe and working for the development of the CCU industry and its recognition as an essential pathway to reach EU climate goals in 2030 and 2050, and beyond. We represent more than 70 stakeholders along the entire CCU value chain.

CCU 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.

CCU technologies include using captured carbon to make synthetic fuels allowing to substitute fossil resources and decrease greenhouse gas (GHG) emissions, by combining carbon with renewable hydrogen to produce renewable fuels of non-biological origin (RFNBOs), or by producing recycled carbon fuels (RCFs) derived from non-renewable waste streams.

### **New EU impetus to fast-track the energy transition is essential**

We support new actions taken by European authorities to accelerate the energy transition and reach EU climate targets by 2030, 2050 and beyond. In that sense, we welcome the latest objectives promoted in the REPowerEU Communication and the REPowerEU Plan which are bringing energy transition targets to the next level, including by promoting the use of more renewable energy and of renewable fuels. We welcome in particular the new target for Member States to collectively ensure that the share of energy from renewable sources in the EU's gross final consumption of energy in 2030 is at least 45%, compared with the original target of 40%. Similarly, the new targets on renewable fuels included in the REPowerEU Plan, as the Commission is calling for RFNBOs to be 75% of hydrogen used in EU industry by 2030 (vs. 50% in the current proposal) and 5% of energy in EU transport by 2030 (vs. 2.6% in the current proposal), are a great step forward.

To reach those targets, we will need a solid policy framework – including via the present draft regulation – which will provide give the right incentives and signals for all economic stakeholders to get fully involved in that transition.

### **Excluding ETS-related emissions after 2035 would dramatically impact the emerging CCU sector**

We fully support the objectives set out in the EU Green Deal to reach carbon neutrality by 2050, as well as the Fit-for-55 package aiming to cut emissions by 55% by 2030. We understand the goal of the present delegation is to foster the production of RFNBOs and RCFs while delivering on the EU climate objectives.

However, we consider some of the provisions in the draft regulation can have unintended consequences and be potentially disruptive for CCU industrial actors as it excludes de facto certain tools that can help reducing CO<sub>2</sub> emissions all across Europe.

Depending on their nature and on their use, CCU technologies can:

- **Reduce CO<sub>2</sub> emissions** via processes that allow for reducing GHG emissions in different economic sectors, e.g. capturing carbon from flue gases transforming it into an RFNBO or an RCF, and burning that e-kerosene to replace conventional kerosene
- **Be carbon neutral**, when the CO<sub>2</sub> captured is not reemitted, e.g. via mineralisation of CO<sub>2</sub> from flue gases, or when the CO<sub>2</sub> captured is equivalent to one reemitted, e.g. direct air capture (DAC) to fuels and chemicals
- **Lead to negative emissions and carbon removals**, e.g. biogenic CO<sub>2</sub> and DAC-CO<sub>2</sub> to mineralisation, making CO<sub>2</sub> react with mineral-rich substances to form carbonates, which are stable chemical compounds. This method permanently locks CO<sub>2</sub> into valuable products such as concrete, aggregates, asphalt, construction fill, etc. effectively removing and bounding the CO<sub>2</sub> into a product

The draft regulation would effectively promote the two latter functions and exclude the first one, considering it is built around two ideas:

- **Using all carbon sources for CCU in the short term:**
  - Recital 7 states that *“the origin of carbon used for the production of RFNBOs and RCFs is not relevant for determining emission savings of such fuels in the short to medium term, as plenty of carbon sources are available and can be captured without hindering the progress of decarbonisation”*
- **Banning the reuse of fossil fuels-related and/or all ETS emissions for CCU as of 2036:**
  - The same recital 7 indicates that *“using non-sustainable carbon is not compatible with climate neutrality the use of carbon from non-sustainable processes entails a continued use of non-sustainable fuels and the related emissions. Capturing of emissions from non-sustainable sources should therefore only be considered as avoiding emissions until 2035”*
  - Recital 11 (of the annexes) indicates that a condition for using CO<sub>2</sub> for RFNBOs/RCFs is that *“the CO<sub>2</sub> has been captured from an activity listed under Annex I of Directive 2003/87/EC and has been taken into account upstream in an effective carbon pricing and is incorporated in the chemical composition of the fuel before 2036”*

We consider this approach will exclude certain CCU pathways that – even if they are not carbon neutral – can lead to CO<sub>2</sub> reductions: the current draft fails to take into account that some CO<sub>2</sub> reduction pathways will be crucial to effectively build the capabilities for the two other functions (carbon neutrality and carbon removals) to be deployed at full speed.

## EU rules should encourage the use of all CO<sub>2</sub> emissions, not limit it

We see the rules set out by the draft delegated regulation as potentially inoperative in the current context, as they do not provide clear definitions of the different carbon sources that can be used to produce RFNBOs and RCFs.

### 1. The regulation should not ban the use of all ETS-related emissions after 2035

Recital 7 seems to say that only carbon captured from emissions related to the use of fossil fuels will be banned, while point 11 of Annex A implies that carbon captured from all ETS related emissions will be excluded from legitimate CCU processes.

There are process-related emissions that cannot be avoided under the current state-of-the-art infrastructures and technologies like cement, lime, or steel. If all ETS emissions are excluded from being used for RFNBOs production after 2035, this would have major repercussions for some CCU investors and technology providers.

It would mean de facto that as of 2036, a number of CCU activities will be put in jeopardy. Consequently, dozens of projects could be stopped or never get off the ground in light of those new definitions. We will not be able to count anymore on the volumes of RFNBO and RCF that will have been produced by then, hence reaching targets of RePower EU, REDII, RefuelEU, Sustainable Carbon Cycles, FuelEU Maritime will be impossible to reach. since the legal certainty for a number of projects would be put in jeopardy.

By putting a time limit on the use of certain sources of CO<sub>2</sub>, investments in industrial carbon capture become unfeasible. A significant number of announced RFNBOs and RCFs projects are expected to be operational by 2025-2026, which would require them to be depreciated within 10 years. This is not realistic for large industrial facilities, hence preventing their concretisation. Indeed, no project can get off the ground now if after 2035 they cannot use the CO<sub>2</sub> source for which they were built. Claiming therefore that all industrial CO<sub>2</sub> sources are acceptable but only until 2035 is in principle misleading because this timeframe is not compatible with the investment cycle of industrial scale CCU facility: the immediate consequence will be that those CO<sub>2</sub> sources will be left unused – now and in the future.

### 2. EU rules should not hamper the potential of CCU fuels in defossilising emissions

The rules as they are proposed would have a number of consequences:

- Not all economic activities can be directly electrified or based on renewable hydrogen. Despite steady reduction of CO<sub>2</sub> emissions in the EU, there will be a number of industrial processes that will continue generating CO<sub>2</sub> emissions that should be captured and used while they exist. The objectives in the latest ETS proposal plans for important reductions in GHG emissions in the coming years, but will not get to zero by 2035: a significant part of ETS emissions will continue to be produced by 2035
- CCU fuels will be needed to contribute to bringing clean energy to hard-to-abate sectors in the long term and sustainably, and they will need large sources of readily available CO<sub>2</sub> to play their part in reaching EU climate goals

- Large volumes of carbon-based products will continue to be needed in Europe in the long term<sup>1</sup>. CCU is key to continue delivering those to businesses and consumers in a sustainable way
- DAC is unlikely to supply enough CO<sub>2</sub> to cover (relevant parts of) demand for carbon-based products by 2035, without significant increase of investments to the technology starting now. Biogenic CO<sub>2</sub> is limited by EU policy design, the outlook of sustainable sourcing/harvesting and regarding trade-offs as regards biodiversity targets
- The draft regulation would favour all those emissions to rely on the linear approach of carbon capture and storage (CSS) to achieve neutrality, without factoring in the principle of circularity by using CO<sub>2</sub> as a carbon source and the emission reductions achieved by substitution effect of CCU products towards independence from fossil alternatives
- Furthermore, point 11.a of Annex A points to CO<sub>2</sub> that has been taking into account upstream in an “*effective carbon pricing mechanism*”. The term “*effective*” is open to interpretation and requires clarification: does this exclude emissions from transport and buildings, emissions from biomass treatment processes, emissions linked to free allowances?
- The current definition would in addition exclude all waste-to-energy emissions (biogenic and non-biogenic) – which are emissions from incineration, of being reused to produce RFNBOs since incineration is not (yet) in the ETS definition. In practice, it would mean excluding all incineration emissions from ever being valorised

### 3. We need clear distinctions in CO<sub>2</sub> from fossil origin and clear definitions of sustainable carbon

This is why we believe the regulation should clearly provide definitions and distinguish among sources of CO<sub>2</sub> from fossil origin:

- CO<sub>2</sub> emissions from fossil fuels
- CO<sub>2</sub> emissions from renewable fuels
- CO<sub>2</sub> emissions from the chemistry of an industrial process, i.e. emissions that cannot be avoided under the current state-of-the-art infrastructures and technologies like cement, lime, steel
- CO<sub>2</sub> emissions from incineration

Such a distinction will enable the legislation to ensure Europe moves away from fossil fuels while allowing for valorising certain sources of carbon that cannot be reduced to zero under the current infrastructures and technologies.

We invite the Commission to provide further granularity in its definition of what qualifies as sustainable carbon – and what should be considered as unsustainable carbon – by distinguishing between the different fossil CO<sub>2</sub> emissions and to continue encouraging certain pathways, such as using emissions that cannot be avoided for RFNBOs production, as one of the tools to reduce the carbon footprint of a number of industries that will require it to reduce their footprint.

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<sup>1</sup> More than 1.000 million tons of carbon by 2050, see: <https://renewable-carbon-initiative.com/wp-content/uploads/2022/05/22-05-03-CO2-Reduction-Potential-of-the-Chemical-Industry-Through-CCU.pdf>

## Our suggestions to unlock the potential of CCU fuels

CCU processes – such as RFNBOs and RCFs production – have different functions, and they should be recognised and encouraged according to the climate benefits they can deliver. CCU fuels substitute fossil resources, as the fuel produced from the carbon that is reused in an RFNBO or an RCF is replacing the use of an additional fossil resource as feedstock. This is why the use of recycled carbon, whatever its source, should be now encouraged in the current climate crisis. The Commission should promote the processes that enable emissions to be converted into carbon-based products such as synthetic aviation fuels, chemicals, etc.

This is why we call on the EU authorities to reconsider the draft regulation and to adapt the rules to support the production of CCU fuels:

### 1. Create a grandfathering clause for continued access to ETS-related CO<sub>2</sub> for all RFNBOs/RCFs installations coming into operation before 2040

It is unlikely that by 2035 we will have in place a centralised CO<sub>2</sub> collection and distribution infrastructure that would allow RFNBO plants to switch without problems the CO<sub>2</sub> source from ETS-related emissions to DAC-derived or biogenic CO<sub>2</sub>. Without massive investments into DAC, it is unlikely carbon needs will be covered. Preventing CO<sub>2</sub> emissions that cannot be avoided from being reused would deprive economic stakeholders of solutions on how to treat those emissions, except for storing them via CCS. No time limit should be set on the reuse of emissions that cannot be avoided. **This is why we are calling the European Commission to include a grandfathering clause on RFNBOs projects coming into operation before 2040 to be able to continue using CO<sub>2</sub> emissions from ETS plants.** With the ambitious policies put in place, renewable energy sources will increase their share and CO<sub>2</sub> from fossil energy resources will in any case decline gradually but considerably in the future, leaving mainly emissions that cannot be avoided as part of the ETS.

### 2. Supporting a wide-deployment of Direct Air Capture

In parallel, EU authorities should support the fast upscale of DAC technologies with CCU projects in countries where renewable power is being deployed at large scale.

### 3. Clarifying elements around the use of CO<sub>2</sub> from biogenic origin

The annexes to the draft regulation makes reference to the possibility to use captured CO<sub>2</sub> from “*the production or the combustion of biofuels, bioliquids or biomass fuels complying with the sustainability and greenhouse gas saving criteria and the CO<sub>2</sub> capture did not receive credits for emission savings from CO<sub>2</sub> capture and replacement, set out in Annex V and VI of Directive (EU) 2018/2001*”.

We invite the European Commission to clarify what would happen with CO<sub>2</sub> derived from a bioprocess where the final output is not destined to be a biofuel (e.g. ethanol production for the chemical industry and not as a biofuel). Under the current formulation, this CO<sub>2</sub> would not belong to the acceptable forms of CO<sub>2</sub>, which is a handicap.

By the same token, we want to make sure that emissions from the biodegradable part of waste, used as a fuel in the combustion process in the waste-to-energy installations can be considered as a viable source of CO<sub>2</sub>.

#### **4. Make rules around mixed fuels and outputs more explicit**

Annexes, part A, §1, reads that *“if a fuel is a mix of RFNBOs, RCFs and other fuels, all (fuel) types shall be considered to have the same emission intensity”*.

- Annexes, part A, §1, reads that *“if a fuel is a mix of RFNBOs, RCFs and other fuels, all (fuel) types shall be considered to have the same emission intensity”*. We call the Commission to clarify whether this definition is referring to the final output of the process (i.e. all emissions of the process divided by the combined fuel output) or the average of the intensities of the individual fuel inputs that are coming into the mix.
- Annexes, part A, §3, indicates that *“if the output of a process does not fully qualify as RFNBO, their respective shares in the total output is determined by dividing the relevant renewable energy input into the process by the total relevant energy inputs into the process”*. We welcome the inclusion of the proportionality rule to ensure the renewable shares of each output is properly reflected in the calculation. We do see however a possible confusion as the renewable share is based on the principle of proportionality, while the GHG intensity not.

We invite the European Commission to clarify how those rules would be implemented in practice. To illustrate this point, let us consider the production of e-methanol in an existing methanol installation which can be based on different processes, e.g. both methane reforming and renewable hydrogen combined with CO<sub>2</sub>. Both processes take place in the same installation and the output will be a mixed fuel. In a case like this, with the two processes taking place in the same unit of production, the average rule for GHG intensity should not apply. If it applies then the GHG intensity will likely be over the 70% threshold (because of the fossil fraction of methanol) and the renewable fraction would be disqualified as a REDII compliant RFNBO. Existing installations should be able to implement stepwise changes in their process to transition to REDII compliant RFNBO, without averaging intensities. Otherwise, the RFNBO technology cannot be tested, validated and de-risked at reasonable size and the deployment will be delayed.

#### **5. Shed light on the impact of the draft regulation on imported RFNBOs**

The draft is unclear as to whether the regulation will also apply to RFNBOs that are produced outside the Union and imported to be used in EU countries. We invite the Commission to clarify the following points:

- how are bidding zones considered in countries where the concept does not apply in the same way as in the territory of the European Union?
- how will EU authorities evaluate whether an “upstream effective carbon pricing mechanism” is in place in countries exporting RFNBOs to Europe?

In both cases, having stringent rules in place could jeopardise short term deployment of RFNBOs production. We call the European Commission to ensure it clarifies the scope of application of this draft regulation and how it will articulate its application between RFNBOs produced in the Union and outside the Union, in analogy to the delegated regulation on the renewable electricity.

#### **6. Clarify obligations around the use of CO<sub>2</sub> emissions from geothermal activities**

Article 11 of the Annex states that *“the captured CO<sub>2</sub> stems from a geological source of CO<sub>2</sub> and the CO<sub>2</sub> was previously released naturally”* is recognised as a source of CO<sub>2</sub> for RFNBOs production.

We see this provision as problematic for geothermal activities. Demonstrating that CO<sub>2</sub> emitted from geothermal plants was previously released naturally can be a very hard threshold to reach. In addition, the clause may be in contradiction with article 5 stating that *“electricity qualifying as fully renewable according to the methodology set out in Directive 2018/2001, shall be attributed zero greenhouse gas emissions”*. Geothermal power would qualify as renewable and count as having zero GHG emissions, but it would be impossible under the present definition to use the CO<sub>2</sub> from geothermal activities for CCU, unless proving it was naturally emitted.

We invite the Commission to ensure that rules are aligned with the current practice, in which CO<sub>2</sub> emissions from geothermal power are counted as part of the grid emission average and are reflected in the GHG calculations for the consumed electricity.

**7. Allow RCF production to use renewable electricity linked to a PPA to replace the loss of electricity production by diverting rigid inputs to RCF production**

Article 10, paragraph a) of the Annex does not allow this by stating that *“in case of lost electricity production, the emission factors to consider are for grid electricity generation in the country where the displacement occurred”*. The effect of this provision means that in many countries with high carbon intensity electricity grids it will not be possible to achieve the 70% threshold. We believe RCFs producers should be able to use renewable electricity linked to a PPA to replace the potential loss of electricity production.

## Conclusion

We would like to reiterate that we see this draft regulation as a necessary step to enable wider use of RFNBOs and RCFs. Yet, some adjustments are needed in its final version to align it with economic and industrial realities (i.e. investment cycle for RFNBOs installations) to enable a fast transition towards low carbon energy systems, EU wide climate neutrality and beyond. The role of the EU today should ensure we move away from fossil resources. But the current draft does not prevent the use of fossil resources: it prevents the use of some CO<sub>2</sub> emissions, which slows down the transition we dramatically need. On the contrary, the regulation should ensure it encourages all processes that lead to emissions reductions and ultimately carbon neutrality. Hence, it is essential to put the right rules in place, in particular regarding the use of CO<sub>2</sub> emissions that cannot be avoided as it will condition the ability of CCU producers to contribute to meeting the EU climate goals.