

POSITION PAPER

Methanol Institute's recommendations  
on Article 9.

CERTIFICATION OF LOW-CARBON FUELS



## METHANOL INSTITUTE'S RECOMMENDATIONS:

- **Clarify and harmonize the level playing field of low-carbon fuels** and apply the same rules for domestic production and imports.
- **Recognize the Contributions of Carbon Capture and Sequestration and Utilization:** Storage technologies, including permanent geological storage and mineralization, should count towards GHG reductions in the production of low-carbon fuels.
- **Streamline the integration of renewable energy sources in low-carbon fuel production.** Producers should be allowed to sign Power Purchase Agreements with low-carbon electricity sources other than renewable only, such as nuclear, or waste incineration.
- Amend Legislation for Industrial Emissions: **Amend the Delegated Act for Article 28 in the Renewable Energy Directive** to recognize the re-use of unavoidable industrial emissions in fuel production as avoided emissions post-2040.
- **Suggestion of methodology proposal based on the Chapter 5 of the IPCC Guidelines for National Greenhouse Gas Inventories on Carbon Dioxide Transport, Injection and Geological Storage and on the Chapter 4.4.1 of the ISCC Carbon Footprint Certification Framework (CFC) & ability to use certified gas sources that address upstream emissions in a mass balance approach,** and allowance of RNG in a mass balance approach to lower carbon intensity.



## 1. ESTABLISH A CLEAR DEFINITION AND PATHWAYS OF LOW-CARBON FUELS

Under the current legal framework, low-carbon fuels can be defined in several ways: a) fuels sourced from low-carbon energy sources, b) fuels derived from fossil energy with carbon capture and storage (CCS), or c) fuels made from partially renewable feedstock that offer significant greenhouse gas (GHG) reductions but do not fully meet existing definitions of renewable fuels. The Gas Directive Art 2 (point 35) provides definitions for low-carbon gas and low-carbon fuels. Additionally, both the FuelEU Maritime Regulation and the RefuelEU Aviation Regulation refer to these definitions outlined in the Gas Directive.

In the context of the burgeoning alternative fuels sector, having a clear legal definition of low-carbon fuels within the supply chain is paramount to mitigating investment risk. Investors, producers, and stakeholders in the alternative fuel market face considerable uncertainty due to the lack of harmonized standards (intra and extra EU) and definitions for what constitutes a low-carbon fuel. This ambiguity hampers informed decision-making and stifles innovation and growth within the sector.

**A well-defined legal framework, based on life-cycle analysis, would provide much-needed clarity, ensuring investments are directed towards genuinely sustainable solutions.** By certifying actual values and establishing clear criteria for GHG reduction thresholds, energy sources, and production methods that qualify as low-carbon, policymakers can unlock the investment potential necessary for the alternative fuel supply chain to flourish. This strategic clarity would accelerate the transition to a sustainable energy future by fostering confidence among stakeholders in the viability and sustainability of their investments in the alternative fuel sector.



The Methanol Institute welcomes the European Commission's objective to create a harmonized methodology for emissions accounting for low-carbon fuels produced domestically and imported. It is essential for European legislation to recognize CO<sub>2</sub> storage proof issued by third countries to ensure the same standards for both domestic production and imports, as outlined in the CCS Directive 2009/31. Additionally, low-carbon fuels are mentioned in Article 10(3) of the FuelEU Maritime Regulation without limitation to nuclear, indicating that FuelEU Maritime could serve as an outlet for these low-carbon fuels. The European Commission is actively working on the Delegated Act (DA) and has six months to complete it. Our objective is to have them include pathways to achieve low-carbon fuel status and expand those pathways to include the fuels described in point c).

Moreover, **it is crucial to address the ability to use certified gas sources that manage upstream emissions in a mass balance approach. Renewable natural gas (RNG) should also be allowed in a mass balance approach to lower the carbon intensity (CI) of fuels. These inclusions are vital for a comprehensive and effective low-carbon fuel strategy.**

## 2. RECOGNIZE THE CONTRIBUTIONS OF CARBON CAPTURE, UTILIZATION AND STORAGE (CCUS)

CCUS technologies are pivotal for GHG reduction in the production of low-carbon fuels. The contribution of permanent geological storage and mineralization towards GHG reduction is undeniable and should be explicitly recognized within the EU's definition of low-carbon fuels. While the downstream value of Carbon Capture and Utilization (CCU) is acknowledged under existing legal frameworks, it is essential to amend the rules to consider industrial emissions as avoided when reused in fuels post-2040 is essential.



### 3. STREAMLINE THE INTEGRATION OF RENEWABLE ENERGY SOURCES IN LOW-CARBON FUEL PRODUCTION

Expanding Power Purchase Agreements (PPAs) to include low-carbon electricity sources such as nuclear or waste incineration alongside renewables supports a more flexible, robust approach to producing low-carbon fuels. This strategy enhances scalability and encourages faster decarbonization by diversifying sources, aligning with circular economy principles, and leveraging the consistent energy output of sources like nuclear power.

This alignment should include the removal of temporal correlation requirements, and ideally, no geographical correlation should be necessary either. Such regulatory flexibility would foster a more conducive environment for the development, adoption, and scaling of low-carbon fuel technologies, thereby accelerating progress towards the EU's climate and energy goals.

Regarding CO<sub>2</sub> sources, Methanol Institute urges to address the issue of handling 'blue methanol' and other low-carbon fuels utilizing CCS (Carbon Capture and Storage). The current legislative framework needs to clarify if such fuels are only allowed if the primary energy source is nuclear. Presently, the pathways for hydrogen and ammonia starting from natural gas are emphasized. Including blue methanol and other CCS-based fuels in the regulatory framework is essential for a comprehensive approach to low-carbon fuel production.

While low-carbon fuels are not the panacea for the energy transition, their role as a significant lever for GHG reduction in the short to medium term cannot be understated. A clearer, more inclusive definition within the EU legislative framework, accommodating the contributions of CCS technologies and re-evaluating the additionality principle, is essential for accelerating the transition to a low-carbon economy.

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## APPENDIX

## Methodology:

*Chapter 5 of the IPCC Guidelines for National Greenhouse Gas Inventories on Carbon Dioxide Transport, Injection and Geological Storage* provides a useful framework for accounting for the contributions of CCS to GHG reductions. The below approach to determine net CO<sub>2</sub>eq savings encompasses all elements of the CCS process including capture, transport, injection, and storage. The formula may be adapted to take into account any leaks of CO<sub>2</sub> and random emissions at each step. Continuous and detailed data on CO<sub>2</sub>eq emissions and the volumes of CO<sub>2</sub> secured for is required as well. This data helps maintain precise records for annual evaluations of storage integrity and environmental compliance.

This formula may be described as follows:

**Net CO<sub>2</sub>eq Savings = Total CO<sub>2</sub> Stored - Emissions from Capture - Emissions from Transport - Emissions from Injection and Storage**

For a CCS unit to qualify for certification as a permanent CO<sub>2</sub> storage facility, it must hold an approved storage permit from the appropriate authorities. Additionally, these units must demonstrate robust quality control and be subject to stringent oversight to verify the permanent confinement and stability of the stored CO<sub>2</sub>. Key monitoring activities include i) continuous and precise CO<sub>2</sub> measurements, ii) data on energy usage during storage and iii) validation of the exact CO<sub>2</sub> storage as verified by third-party entity.

For factoring in the contributions of CCU for low-carbon fuels, ISO 14067:2018 represents a relevant industry reference. The methodology takes into account all relevant emissions, including upstream process such as direct operational emissions from the production process, indirect emission from energy sources and raw materials and emission related to the integration of captured carbon dioxide into the process flow.



Chapter 4.4.1 of the ISCC Carbon Footprint Certification Framework (CFC) describes the application of the ISO standard in relation to low-carbon methanol production. The same framework may be applied for other energy carriers, adapting the approach to reflect the necessary input streams. The ISCC CFC is as follows:

$$\begin{aligned}
 E_{\text{low carbon CCU MeOH}} &= -E_{\text{CCU CO2 intake}} + E_{\text{CCU CO2 upstream emissions}} + E_{p_{\text{low carbon CCU MeOH}}} \\
 &+ E_{\text{unconverted CCU CO2}}
 \end{aligned}$$

MI supports the application of the ISCC CFC approach which importantly encompasses the following factors in determining the contributions of CCU for low-carbon fuels production:

1. **Direct production emissions:** Measured in kg CO<sub>2</sub>-Eq. per tonne of fuel
2. **CO<sub>2</sub> capture credits:** Emissions reductions from captured CO<sub>2</sub> are credited against the methanol’s GHG profile. These credits reflect the avoided emissions and are considered as negative values in calculations.
3. **Upstream emissions:** Include emissions from energy use in CO<sub>2</sub> capture, CO<sub>2</sub> compression, chemical processing for CO<sub>2</sub> purification, and CO<sub>2</sub> transport.
4. **Processing emissions:** Emissions from non-converted CCU CO<sub>2</sub> during fuel production are included if related credits are applied. These include inputs like electricity, heat, net-hydrogen use and direct emissions other than CO<sub>2</sub>.

The overall GHG profile for low carbon fuel production integrates these specific elements to ensure a comprehensive evaluation of environmental impact. This approach not only tracks direct emissions from production processes but also considers the broader context of input-related emissions and the benefits of CO<sub>2</sub> capture. The Methanol Institute believes to approach maintains a robust and transparent GHG reporting that supports the low carbon claims of the produced energy carrier.





## ANNEX 1

## Why unlocking low-carbon fuels is essential:

Low-carbon fuels are beneficial for the climate in several keyways, contributing significantly to global efforts to mitigate climate change. The primary advantage is their potential to significantly reduce greenhouse gas (GHG) emissions compared to conventional fossil fuels. By emitting fewer pollutants during combustion or use, low-carbon fuels can decrease the overall carbon footprint of various sectors, especially transportation and industry, which are major contributors to global carbon emissions. Many low-carbon fuels are derived from renewable or waste resources, such as biomass, organic waste, or sequestration or re-use of carbon emissions. Using these resources for fuel production promotes sustainability and reduces dependency on finite fossil fuel resources, leading to a more sustainable energy.

Further, Low-carbon fuels represent practical energy solutions for sectors where electrification is challenging, such as heavy-duty vehicles, aviation and maritime and certain industrial processes, facilitating a more comprehensive approach to decarbonization. Addressing climate change and offering a multifaceted approach to reducing GHG emissions while promoting sustainable resource use, low-carbon fuels are poised to play a key role in the energy transition which further underscores the importance of continued investment and policy support to fully realize their potential for the climate.

The transition to a low-carbon economy, particularly in the mobility and industrial sectors, necessitates a clear and consistent legal definition of low-carbon fuels within the EU legislative framework. Currently, the definition is outlined in Article 2.10 of the Directive on common rules for the internal markets in renewable and natural gases and in hydrogen. However, there's an urgent need to detail and clarify the pathway to achieving the 70% greenhouse gas (GHG) reduction threshold mentioned therein, especially concerning hydrogen derivatives. While low-carbon fuels represent an intermediary yet crucial step in unlocking immediate GHG reduction capacities, inconsistencies in their definition across EU legal instruments complicate their role in the energy transition.







# The Methanol Institute (MI)

Founded in 1989

The Methanol Institute is the global trade association for the methanol industry, representing the world's leading producers, distributors, shippers, and technology companies. MI now represents its members from five offices around the world in Singapore, Washington D.C., Brussels, Beijing, and Delhi.



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