

Methodology to determine the greenhouse gas (GHG) emission savings of low-carbon fuels

Sandbag's Submission to the European Commission's Public Consultation

We welcome the opportunity to provide feedback on the draft delegated act published by the European Commission setting out the methodology to determine the greenhouse gas (GHG) emission savings of low-carbon fuels, pursuant to Article 9(5) of the Directive on common rules for the internal markets for renewable gas, natural gas and hydrogen (EU/2024/1788).

For 'low carbon' hydrogen to truly make a positive contribution to Europe's transition to climate neutrality, **the safeguards put in place must be meaningful**. Unfortunately, this does not appear to be the case in this draft delegated act.

1) Insufficient consideration of knock-on effect of electricity use for hydrogen production

We are concerned there has been **insufficient consideration of the consequences of using electricity to produce hydrogen**. The use of grid electricity by electrolyzers at times when fossil power plants are operating will lead to increased electricity production from fossil marginal units. Whereas **methods b)** and (especially) **c)** outlined in Annex A point 6 provide some safeguards against such misuse of electrolyzers, **method a)** does not. This method would allow Member States' historical grid emission factors to be used to calculate the emissions intensity of hydrogen. Allowing this approach reduces the incentive to switch off an electrolyser when there is demand for fossil-based electricity. The resultant operation of fossil marginal units would dramatically increase the emissions induced by operating the electrolyzers. This increased emissions intensity would not be captured by the calculation of the carbon footprint of low-carbon fuels (LCFs), so their associated emissions will be underestimated. **Method a) should therefore not be allowed.**

The draft delegated act also states that the possibility of allowing low-carbon electricity to be sourced directly from nuclear power plants will be reviewed in 2028. **Diverting low-carbon electricity generation from the grid at times when the grid is not fully decarbonised would result in increased emissions** and should not even be considered.

2) Underestimation of emissions associated with fossil gas-derived hydrogen

For fossil-derived hydrogen, explicitly excluding the combination of Carbon Capture and Storage (CCS) with enhanced oil recovery is a welcome reassurance, as is including only Carbon Capture and Utilisation (CCU) in which CO₂ is permanently chemically bound in products, something we recently advocated for¹.

However, **upstream leakage has been significantly underestimated** in the draft. The ‘*standard values*’ for upstream GHG emissions for natural gas total **10.45 gCO₂eq/MJ** (corresponding to a 1.1% leakage rate). Agora recently showed a similar value (**9.7 gCO₂eq/MJ**) would significantly underestimate real-world emissions from fossil-based hydrogen by a factor of 2.5 for Europe by 2040². **The proposed value needs to be raised to reflect recent studies**, which highlight that a 3% methane leakage rate is a more realistic value³. Alternatively, **country-specific emissions factors could be used until site-specific rules under the EU Methane Regulation come into effect**.

Additionally, **the draft delegated act does not specify how midstream emissions will be accounted for** in the case of natural gas-derived hydrogen, merely labelling them as ‘not applicable’ (Table B). This is despite the fact that midstream emissions are included in the scope of the EU Methane Regulation.

¹ Sandbag. (2024, July 16). *Feedback on the inclusion of permanent CCU in the EU ETS*. [Available here](#).

² Agora Energiewende. (2024, July 24). *Low-carbon hydrogen in the EU*. [Available here](#).

³ Deutsche Umwelthilfe. (2023, January 24). *Unterschätzte Methan-Emissionen: Dringender Handlungsbedarf der Bundesregierung*. [Available here](#).