

IOGP Paper on metric to use for 2030 targets

Introduction

The EU is implementing measures to achieve the goals of the Paris Agreement and has set an objective of a climate neutral EU by 2050, which IOGP supports alongside the implementation of inclusive enabling measures. As set out in the Commission's communication on the European Green Deal achieving this will require decarbonisation of the gas sector which in turn will need to be facilitated by regulatory measures, including enhanced support for the development of renewable and low-carbon gases, supporting a forward-looking design for a competitive decarbonised gas market. IOGP looks forward to working with the Commission on the methodology to underpin supporting legislation (REDII, Gas Decarbonisation Package, other sectoral legislation, etc) and help achieve the EU's overall climate objective.

IOGP is one of the funding partners of the Hydrogen for Europe study¹ which has assessed the contribution of low-carbon and renewable hydrogen to the European energy transition. The study has found substantial benefits of a technology diverse approach to decarbonisation, that leverages the benefits of both renewable and low-carbon solutions, versus an approach that only supports renewables. Recommendations from the study include a.o.:

- to include externalities of CO₂ emissions in the economics of the energy system and incentivise CO₂ abatement technologies and uses, and
- to design accounting rules for CO₂ content of energy: a common understanding on how to determine the CO₂ content of different forms of energy is crucial to compare their merits in achieving the transition.

IOGP supports a credible, robust and EU-wide system to determine, certify and value the GHG emission savings of renewable and low-carbon gases, as further described in this paper.

EU-wide certification of GHG intensity reduction of renewable and low-carbon gases

IOGP recommends an EU-wide certification system as the basis to demonstrate and value the avoided GHG emissions of renewable and low-carbon gases compared to unabated natural gas. This instrument will be essential for the decarbonisation of the gas sector in areas that are not covered by the EU-ETS. Certification provides an instrument to verify, demonstrate and monetise the premium value for the lower carbon content of renewable and low-carbon gases. This EU-wide certification system builds on the existing Guarantees of Origin under REDII, which should therefore be amended to include standardised lifecycle GHG information and apply to all renewable and low-carbon gases. These certificates should be eligible to meet the sectorial targets if those are set under the (amended) REDII or other regulatory instruments. Over time, the market for certificates could potentially be integrated with the market for ETS allowances but this would need to resolve compatibility issues between the mass balance system of the ETS and the book-and-claim system of certificates in order to avoid double counting of emission savings.

¹ For the full report, please refer to <https://www.hydrogen4eu.com>

Suppliers of renewable and low-carbon gases should be eligible to receive certificates based on how much GHG emission savings they achieve, on a standardised lifecycle basis, versus a baseline supply of natural gas (the fossil fuel comparator). A standardised lifecycle assessment methodology still needs to be further developed building on the REDII methodology, taking (at least initially) value chain emissions into account for the fossil fuel comparator and for the renewable and low-carbon gases. Default GHG emission values need to be defined for each standard production processes. Standardisation is recommended to limit the administrative burden of analysing each individual process (e.g. biogas facility, electrolyser) and to address challenges of accurately quantifying emissions. For any new large hydrogen production facility with CCUS, the default GHG emission values could be quite specific to the project, with specific inputs for parameters which significantly affect GHG performance (e.g. CCUS capture rate). It should be possible to add new or improved processes based on independent verification in order to incentivise ongoing process optimisations and innovations.

Example: Assume that the fossil fuel comparator is set by the average GHG footprint of natural gas supplied in the EU at $240 \text{ kgCO}_{2\text{eq}}/\text{MWh}_t^2$, which includes estimated methane emissions. Assume that hydrogen produced from a project with steam reforming of natural gas with CCS and a capture rate of 56%, has a GHG intensity of $120 \text{ kgCO}_{2\text{eq}}/\text{MWh}_t$ (equivalent to $4 \text{ kgCO}_{2\text{eq}}/\text{kgH}_2^3$), this would save $120 \text{ kgCO}_{2\text{eq}}/\text{MWh}_t$. Under the proposed certification system each MWh_t of hydrogen would be eligible to receive certificates to the value of $120 \text{ kgCO}_{2\text{eq}}$. Hydrogen produced with a CCS capture rate of 90% and a GHG intensity of $30 \text{ kgCO}_{2\text{eq}}/\text{MWh}_t$ (based on $1 \text{ kgCO}_{2\text{eq}}/\text{kgH}_2$) would be eligible to receive certificates to the value of $210 \text{ kgCO}_{2\text{eq}}$ for each MWh_t . In case of net carbon removals, such as hydrogen produced from biogas with CCUS, it should be possible to receive certificates in excess of the fossil fuel comparator.

(Note: The numbers used in this example are for illustration only and do not represent real values, which will need to be developed)

IOGP recommends that the issuance of certificates is verified and assured by an independent body and that those certified GHG emission savings are accepted and tradeable across the EU as a standardised product. This requires a common EU-wide regulatory framework in order to create a common tradeable instrument supporting the development of liquidity. These certified GHG emission savings should also be eligible for the compliance market and eligible to meet minimum shares or quotas if those are set by Member States.

In the proposed system of certification the emission benefits are unbundled from the physical molecules and can be traded separately. This enables consumers to contribute to decarbonisation on a voluntary basis without the need to be physically connected to a source of renewable or low-carbon gas, which creates an instant demand for renewable and low-carbon gases. To support the development of a market for renewable and low-carbon gases additional policy support will be required. This could be provided by CCfD mechanisms versus the implied carbon price set by the certificate market. If Member States choose to support the decarbonisation process by setting targets for various sectors, including targets for renewables, the proposed certificates should be eligible to meet those targets in order to create a market that incentivises production of renewable and low-carbon gases in a technology open manner.

² Source: JRC study 2017 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02012R0601-20190101&from=EN>

³ Source: Commission's Hydrogen Strategy communication COM [2020] 301 final, page 4 and IEA2019.