



Hydrogen  
Europe

# Derisking investments in low-carbon and renewable hydrogen via a grandfathering clause

*Hydrogen Europe position paper*

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## Executive Summary

The Delegated Regulation 2025/2359 on the greenhouse gas (GHG) methodology for low carbon fuels (LCF DA) presents a **strong regulatory uncertainty created by:**

- Reliance on some yet to be adopted or properly enforced pieces of legislation;
- Lack of clarity with regards to the methodology for calculating upstream emissions of gas/LNG;
- Potential future revisions of the LCF DA or the GHG emissions reduction threshold.

**Given these uncertainties and the regulatory risk** created by them and **considering the lack of incentives in place to promote the production and consumption of low-carbon fuels in the EU**, it is urgent to **establish an early mover's protection mechanism**. Otherwise, it is highly likely that investments in low carbon fuel production in and outside the EU in current development will either be delayed or cancelled.

### **The proposed low carbon fuels delegated act early mover's protection mechanism:**

The mechanism is a grandfathering clause to provide protection against the following regulatory aspects:

- Future changes to the GHG calculation methodology;
- The GHG emissions reduction threshold (i.e. 70% GHG emission saving compared to the 94 grams of CO<sub>2</sub> equivalent per megajoule (gCO<sub>2</sub>eq/MJ) fossil fuel comparator);
- Future update of default emission factors of energy inputs;
- IPCC assessments of hydrogen's Global Warming Potential (GWP) value.

Developers should have the option to activate the clause when the project takes Final Investment Decision (FID), and it should last 20 years - to be aligned with lenders' timeframes and project bankability. It should apply to projects within and outside the EU.

However, it should not cover:

- Project specific factors, like the assumed CO<sub>2</sub> capture rate or energy efficiency of used technology;
- Location/energy source choice: elements like the average emission intensity of electricity in MS/bidding zones where the project is located or average GHG upstream emissions of natural gas intensity in the region/supplier/grid from which the project is sourcing its natural gas.

### **Renewable fuels of non-biological origin Delegated Act protection mechanism:**

A similar clause is also needed under the DA 2023/1185 setting up the GHG assessment methodology for RFNBO and recycled carbon fuels. This is a consequence of the fact that for many electrolytic hydrogen projects both RFNBO and low carbon hydrogen will be co-produced at the same facility and hence we need coherence and alignment between the two methodologies.

The European Commission should propose a mechanism to financially reward all RFNBO projects where FID was taken before end of 2028. This could entail an update of the state-aid framework, allowing higher aid intensity (up to 100%) for RFNBO production projects to allow MS to protect the competitive position of early investors.

- The framework should allow for grandfathering of industrial CO<sub>2</sub> compliance for a period of 15 years for projects reaching FID before 2035.

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## 1 The necessity of protecting early movers

The Delegated Regulation 2025/2359 on the GHG methodology for low carbon fuels, adopted on 21<sup>st</sup> of November 2025 (**LCF DA**), has several shortcomings. One of its **main weaknesses is the significant uncertainty created by:**

- Reliance on some yet to be adopted or properly enforced pieces of legislation;
- Lack of clarity with regards to the methodology for calculating upstream emissions of gas/LNG;
- Potential future revisions of the LCF DA or the GHG emissions reduction threshold.

**Given these uncertainties and the regulatory risk** created by them and **considering the lack of incentives in place to promote the production and consumption of low-carbon fuels in the EU**, it is urgent to **establish an early mover's protection mechanism**. Otherwise, it is highly likely that investments in low carbon fuel production in and outside the EU in current development will either be delayed or cancelled.

Furthermore, **as many issues in the LCF DA cannot be solved by a grandfathering clause, we also urge the European Commission to publish a Q&A document addressing the many unclarities as soon as possible.**

As there is a close link between the LCF DA and the RFNBO DA (2023/1185), any grandfathering clause included in one framework needs to be replicated also in the other. However, in the context of RFNBO production, as the strict production rules hampering investments in many European countries are currently undergoing an assessment of their own (which could result in a revision)<sup>1</sup>, it will be important that first movers are protected and not penalized for their pioneering efforts in establishing a new market.

### 1.1 Reliance on some yet to be adopted or properly enforced pieces of legislation

According to the LCF DA, **Methane Emission Regulation (MER) article 12 should be used to provide project specific emissions values (for upstream methane emissions)**. However, according to article 29, point 4 of the MER, only in 2027 the EC will adopt a DA that will provide a methodology for calculating, at the level of the producer, the methane intensity, of among other, natural gas.

**For the CCUS-related emissions**, the LCF DA refers to two regulations:

- **Delegated Regulation (EU) 2024/2620** - as regards the requirements for considering that greenhouse gases have become permanently chemically bound in a product. The regulation contains only 4 groups of products, which at this stage does not cover solid carbon;
- **Delegated Regulation (EU) 2024/3012** establishing a Union certification framework for permanent carbon removals, carbon farming, and carbon storage in products. According to its article 8, the EC shall adopt a DA establishing certification methodologies. However, no date is indicated in the text for this specific piece of legislation.

Furthermore, for CO<sub>2</sub> (and N<sub>2</sub>O) related upstream emissions the LCF DA requires that, in case the gas used is based on LNG supply, emissions related to liquefaction, transport, and regasification should be accounted for on a project specific level. While moving towards project specific values is the right

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<sup>1</sup> In its Communication "[AccelerateEU](#)" the European Commission stated that "[Q2 2026] After an assessment and given the slower than expected ramp up of the hydrogen market, the Commission will propose a targeted review of the production criteria for renewable hydrogen, while safeguarding existing investments".

direction, this requires project developers to be able to track the origin of natural gas. Bilateral supply contracts usually do not contain detailed information on the origin of the gas. Producers would have to find a supplier that is willing/able to report the origin and the mode of transport of the fossil fuel input. The methane regulation does not require fuel suppliers to disclose that information. Nor does the Delegated Act itself provide any clarity on this issue. This would create significant uncertainty – especially for small scale producers sourcing gas from an interconnected EU gas grid.

**The fact that the LCF DA refers to and relies on various other delegated regulations that are still missing is creating a significant risk for investors.** As a result, the final framework for calculating methane emissions is not expected to be ready until 2029.

## 1.2 Potential future revisions of the LCF DA

Other than the fact that the LCF DA relies on regulations which are not yet in place, the LCF DA itself is also subject to future revisions, which is adding another layer of regulatory risk. Some of the potential future revisions include:

- Update of the approach to upstream methane emissions by replacing a single default emission factor with regional ones;
- Inclusion of low carbon electricity sources within the framework;
- Classification of hydrogen as a GHG;
- Global Warming Potential (GWP) values for methane (CH<sub>4</sub>) and Nitrous oxide (N<sub>2</sub>O) subject to future revisions in line with IPCC assessments.

**All of the above changes could have a profound impact on project GHG emissions throughout the project's lifetime.**

### 1.2.1 Inclusion of country, regional, or project specific approach for upstream emissions

The LCF DA specifies in Annex B Table 1, that the emissions of CO<sub>2</sub> of natural gas should be based on default values, with the exemption of emissions from LNG liquefaction, shipping, and regasification steps which should be added, if applicable.

According to article 3 of the LCF DA, as part of the 2028 review the Commission shall assess the introduction of a country- or region-specific approach for standard values for greenhouse gas emission intensities of inputs as reported in part B in the Annex.

**The inclusion of country- or region-specific standard emission values is welcome. However, there is no clarity as to whether the updated framework will complement or supersede the existing approach to upstream gas emissions – creating an unacceptable level of risk for investors willing to make FID before this update is carried out.**

### 1.2.2 Including low carbon electricity in the planned 2026 impact assessment of the use of nuclear electricity

According to the same article 3 of the LCF DA, the EU Commission will start working on an impact assessment on the potential introduction of alternative approaches for recognising low-carbon electricity in 2026, with public consultation expected mid-2026.

**While the revision of the approach to sourcing of electricity is welcome, the uncertainty created by the planned revision is freezing potential investments – especially in electrolytic low carbon**

hydrogen projects. This uncertainty also extends to the scope of this revision. For now, the Commission only mentions nuclear PPA, while in other regions – most notably in the US Inflation Reduction Act (IRA) framework – recognition of all low carbon electricity sources is allowed, not only nuclear electricity. **The lack of such a provision in the EU framework puts EU industry at a disadvantage.**

### 1.2.3 Global Warming Potential (GWP) of hydrogen

While the European Commission's proposed approach to the inclusion of GHG impact of hydrogen leakages is a prudent one – waiting for the science to settle – **the potential future inclusion of hydrogen's GWP within the framework of the LCF DA creates a significant regulatory risk.** This is irrespective of the fact that the overall impact of hydrogen leakage on the GHG intensity of hydrogen is expected to be minor.

## 1.3 Greenhouse gas (GHG) emission intensity threshold

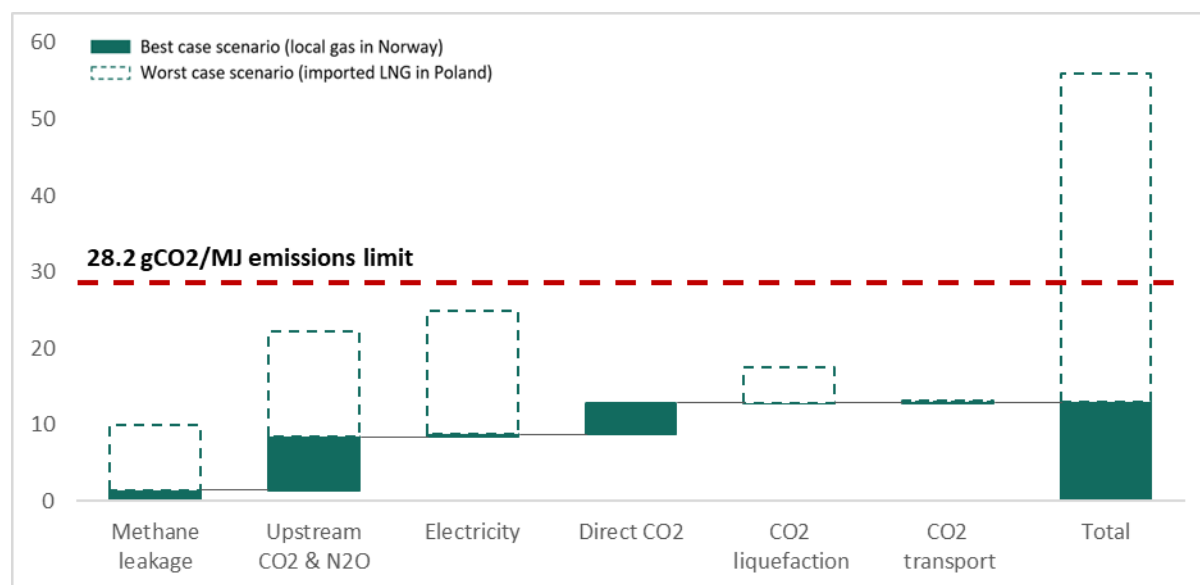
Recital 13 of the hydrogen and decarbonised gas market directive (Directive 2024/1788) signals that **the threshold for GHG emission reductions for low carbon hydrogen and synthetic gaseous fuels should become more stringent for hydrogen produced in installations starting operation from 1 January 2031**, to reflect technological developments and further drive GHG reduction performance. Article 92 of the same directive provides the review mechanism that can enable such an update.

**This constitutes a material regulatory risk for low-carbon hydrogen projects, particularly those that take FID before 1 January 2031 but start operations after that date**, because they could face a stricter threshold at start-up than envisaged when they took final investment decision (FID).

## 1.4 Conclusion Summary of the impacts of an uncertain investment framework

The described regulatory uncertainties are not small details – as such, each of them can have a profound impact on the overall GHG intensity of produced hydrogen. This impact is exacerbated by the fact that **given the overall strictness of the current methodology, on average low carbon hydrogen production would already approach the emission limit.** Using the current EU average emission factors for natural gas and electricity, even with a high CO<sub>2</sub> capture rate of above 95%, the GHG intensity of hydrogen can be expected to be at around 25 gCO<sub>2</sub>/MJ – a mere 3.2 gCO<sub>2</sub>/MJ below the emissions limit. **The situation is even more difficult in some EU MS where the electricity's carbon intensity is well above the EU average, or countries which rely extensively on LNG as a gas supply source.** In those instances, the default case shown in Figure 1 would end up above the emissions limit, forcing project developers into additional GHG reducing measures, such as reliance on renewable electricity for some processes or mixing biomethane into the gas feed. In all of these cases, **the margin below the emissions limit is going to be extremely small, exacerbating the need to protect investors from regulatory risk.**

Figure 1. GHG intensity of low carbon hydrogen from natural gas reforming with CCS



Notes: calculated assuming 95% CO2 capture rate, average EU upstream emissions for natural gas and electricity, CO2 liquefaction and storage in an offshore site 200 nm away from point of capture.

Such a small margin leaves little room for uncertainty, and any regulatory risk could easily make projects not bankable.

Without any grandfathering, companies will factor the risk of subsequent changes to the framework conditions into their business case calculations. As a result, this additional risk will render business cases uneconomical, as investors/companies will have no certainty about the regulatory framework for the project.

Therefore, to mitigate the large regulatory risk created by the lack of clarity and potential future revisions of the LCF DA and to facilitate investments into low carbon hydrogen, the European Commission should introduce a grandfathering clause for projects that have taken FID based on the rules of the adopted LCF DA.

## 2 Optimal design of the grandfathering clause

### 2.1 Scope of the grandfathering clause

The emission intensity of produced fuels depends on multiple factors, including **various project specific ones** – like the **assumed CO2 capture rate or energy efficiency of used technology**. As **grandfathering should not be a mechanism to compensate for higher emissions of projects**, these sorts of risks should be managed solely by investors and **not be within the scope of the grandfathering clause**.

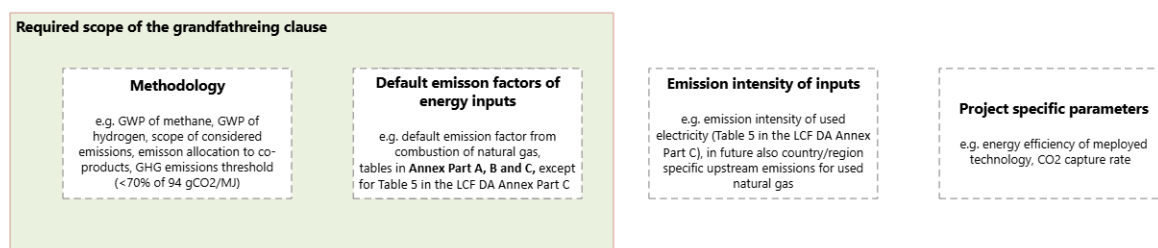
We also suggest that **the grandfathering clause should not be extended to cover elements like the average emission intensity of electricity in MS/bidding zones where the project is located or average GHG upstream emissions of natural gas intensity in the region/supplier/grid from which the project is sourcing its natural gas** (should the EU Commission introduce such region/country specific upstream emission values in the future). While these factors are outside of direct control of project developers and have profound impact on the GHG intensity of fuels, **the grandfathering clause should**

**only protect from regulatory risk and not mitigate risks stemming from the choice of the location of the project or source of energy inputs.**

For the grandfathering clause to have the desired effect of protecting from regulatory risks, it needs to **provide protection against future changes to the GHG calculation methodology, the GHG emissions reduction threshold** (i.e. 70% GHG emission saving compared to the 94 gCO<sub>2</sub>eq/MJ fossil fuel comparator), **future update of default emission factors of energy inputs** as well as **IPCC assessments of GWP**. And it should apply irrespective of the origin of the project, whether it is located within and outside the EU.

In practice this means that **the grandfathering clause should enable investors to continue relying on the version of the LCF DA Annex Part A, B and C, together with all the other regulations referred to in the LCF DA, that were in force at the time the grandfathering clause is activated for a fixed amount of time, irrespective of any future changes.** Table 5 in the LCF DA Annex Part C (Emission intensity of generated and net imported electricity in Member States from 2019 to 2023) should be outside of the scope as these values are historical and would need to be replaced by updated values in the certification process anyway.

Figure 2. Recommended scope of the grandfathering clause



## 2.2 Entry into force

Given that the underlying reason for the introduction of the grandfathering clause is to facilitate FIDs by reducing regulatory risk and improving projects' bankability, the activation of the grandfathering clause needs to be possible at a relatively early stage of project development.

**We suggest that it should be possible to activate the grandfathering clause as early as the project obtains a Final Investment Decision (FID). In this context, FID should be understood as a formal decision recorded by the company's governing body approving the project and authorizing funding (such as a Board of Directors resolution). Such timestamped and often legally binding corporate governance documents are commonly used in assurance, due diligence, and audit processes, and can be provided to an accredited LCF certification body as evidence of the date on which the project's FID was taken.**

## 2.3 Duration

The period for which the investors should be protected from changes in the regulatory framework is another key element. A balance needs to be struck between derisking early movers and ensuring that suboptimal technologies and solutions are not artificially kept on the market when they could be superseded by cleaner technologies. Furthermore, considering that the European banks loans for energy projects are usually structured as long-term project finance, broadly on the order of 10–18

years<sup>2,3</sup> and considering that the main purpose of the grandfathering clause would be to improve projects bankability:

**We recommend that the duration of the grandfathering clause should be set at a level of 20 years.**

## 2.4 Optionality

Not all investors are affected by the regulatory risk as much as producers relying on natural gas as the main energy input. For producers of electrolytic hydrogen – both RFNBO and low-carbon, the key emission factors impacting the final carbon intensity of the produced fuels – including the average GHG intensity of electricity – are expected to gradually improve over time.

**Therefore, any grandfathering clause introduced to the LCF DA should be an option that can be activated by investors that choose to do so and not be forced upon all investors by default.**

## 3 Implementation beyond the low-carbon fuels framework

While the introduction of the grandfathering clause has been suggested by the European Commission only in the context of the LCF DA, it needs to be stressed that the same clause is also necessary to be implemented in the DA 2023/1185 setting up the GHG assessment methodology for RFNBO and recycled carbon fuels. This is a consequence of the fact that for many electrolytic hydrogen projects both RFNBO and low carbon hydrogen will be co-produced at the same facility. It is therefore imperative to ensure complete coherence and alignment between the two methodologies.

It also needs to be highlighted however, that for RFNBO project developers the regulatory risk is not as much stemming from potential revisions of the GHG methodology (DA 2023/1185) but rather from the potential revision of the delegated regulation 2023/1184. In this case the early movers who take the FID under the current rules are exposed to the risk that in a case of favorable revision of the framework, later projects might become more competitive by not being forced into restrictive PPA with hourly temporal correlation. In case of a revision, it will be important that first movers are protected and not penalised for their pioneering efforts in establishing a new market.

**We therefore urge the European Commission to propose a mechanism to financially reward all RFNBO projects where financial investment decision was taken before end of 2028. This could entail an update of the state-aid framework, allowing higher aid intensity (up to 100%) for RFNBO production projects in order to allow MS to protect the competitive position of early investors.**

In this context we are also recommending the European Commission to reconsider the approach towards the CO<sub>2</sub> sources for e-fuels production. **Industrial CO<sub>2</sub> could provide a cost-effective and local solution to scale up first projects.** We do agree that this is not a long-term solution or pathway, as industrial CO<sub>2</sub> needs to be reduced globally. **However, the cut-off dates put in place currently, i.e. 2036 for CO<sub>2</sub> from the heat and power sector and 2041 for industrial CO<sub>2</sub>, are too short.** Developers

<sup>2</sup> Roth, A., Đukan, M., Anadolitis, V., Jimeno, M., Banasiak, J., Brückmann, R., & Kitzing, L. (2021). Financing conditions of renewable energy projects – results from an EU wide survey. *Open Research Europe*, 1. <https://doi.org/10.12688/openreseurope.13969.2>

<sup>3</sup> Egli, F., Steffen, B., & Schmidt, T. (2018). A dynamic analysis of financing conditions for renewable energy technologies. *Nature Energy*, 3, 1084-1092. <https://doi.org/10.1038/s41560-018-0277-y>.

are planning projects with at least 20-year lifespans and forcing them to change CO<sub>2</sub> sources during operation, for either DAC with uncertain future costs or biogenic sources with uncertain future availability, makes those projects practically un-bankable.

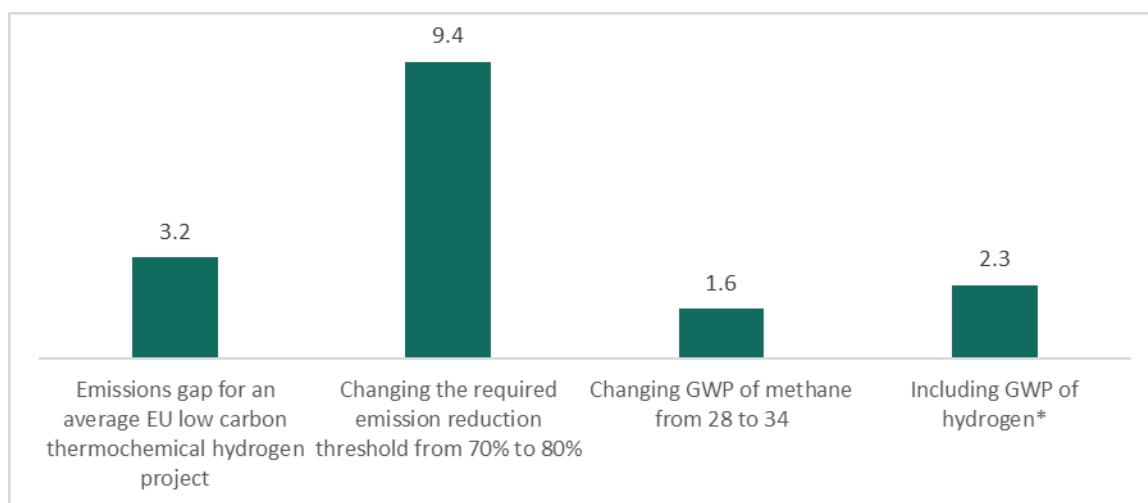
**Therefore, Hydrogen Europe recommends that next to the proposed cut-off dates, the framework should allow for grandfathering of CO<sub>2</sub> compliance – i.e. guarantee certification for 15 years for first projects reaching FID before 2035. This would significantly reduce regulatory risk for e-fuels projects, while being in full alignment with the EU climate neutrality goal of 2050.**

## 4 Annex 1

The following graph illustrates the Impact of selected uncertainties of the GHG intensity compared to the GHG emissions gap between the expected emission intensity of EU average low carbon hydrogen from natural gas reforming with CCS and the required threshold (28.2 gCO<sub>2</sub>/MJ).

The gap estimated for an average project is just 3.2 gCO<sub>2</sub>/MJ. With such a small margin even a slight modification of the methodology could be the difference between a project being able to meet the low carbon threshold and not.

*Figure 3. Impact of selected uncertainties of GHG intensity methodology compared to the GHG emissions gap between the expected emission intensity of EU average low carbon hydrogen from natural gas reforming with CCS and the required threshold (28.2 gCO<sub>2</sub>/MJ)*



Notes: \* calculated assuming 2% leakage rate and hydrogen's GWP of 11.

HYDROGEN EUROPE  
Avenue Marnix 23  
1000, Brussels / Belgium

[secretariat@hydrogeneurope.eu](mailto:secretariat@hydrogeneurope.eu)  
[www.hydrogeneurope.eu](http://www.hydrogeneurope.eu)



Hydrogen  
Europe