



## Statement on the European Commission's proposal of the Delegated Acts to Art. 27 and 28 REDII

The **Global Alliance Powerfuels** welcomes that after several delays, the European Commission has published its final proposals of the Delegated Acts (DAs) to define renewable fuels of non-biological origin (RFNBOs) as set out in Art. 27 and Art. 28 of the revised Renewable Energy Directive (REDII). Both DAs have been urgently awaited, since they define and specify criteria and rules for the eligibility and accounting of different inputs (e.g. electricity, CO<sub>2</sub>) and production processes for RFNBOs. This is of utmost importance in order to provide the regulatory and investment security needed to ramp up the market for renewable hydrogen and other powerfuels, both within Europe and in export-oriented partner countries.

While the development of regulatory frameworks and incentive mechanisms for hydrogen have gained momentum around the world, the most prominent example being the US Inflation Reduction Act, these fundamental pieces of EU hydrogen legislation have repeatedly been delayed. A further delay is intolerable if the EU wants to achieve its ambitious targets for hydrogen production under REPowerEU. We hence call on the European Parliament and the Council of the European Union to refrain from their right to veto. Despite some remaining flaws and newly introduced challenges in comparison to earlier drafts, we consider the final proposals to constitute an acceptable compromise, as further clarity on the established criteria and rules was achieved, while allowing for a sufficient degree of flexibility.

The **Global Alliance Powerfuels** was founded in 2018 and is backed by 14 member organisations and an international network of over 20 partner institutions. It is coordinated by the German Energy Agency (dena). The strategic objective of the Alliance is to foster the development of a sustainable global market for powerfuels.

The term **powerfuels** denotes not only renewable hydrogen but also all other gaseous and liquid energy carriers and feedstocks from power-to-X processes that draw their energy content from renewable electricity. This includes, but is not limited to, synthetic gas (e.g. methane, hydrogen) and synthetic liquid fuels (e.g. methanol, ammonia, and Fischer-Tropsch products).

Powerfuels complement the direct use of renewable energy and are crucial where direct electrification is not technologically feasible or economical. By offering climate-neutral options to applications with no viable alternatives, powerfuels allow for more far-reaching de-fossilisation of all end-use appliances, across all sectors – thus enabling system-wide emissions reductions in a technology-neutral approach. Powerfuels can also accelerate the integration of the energy system by replacing fossil energy sources in existing end-use consumer equipment in the short-term and offering flexibility as a long-term storage option.

## Definition of criteria for sourcing electricity for the production of RFNBOs (Art. 27 REDII)

The Delegated Act to Art. 27(3) REDII specifies the criteria for sourcing electricity that RFNBO producers have to fulfill in order for the end product to be considered as of renewable origin and for the electricity used to be factored into the calculation of greenhouse gas savings with zero emissions.

The DA provides that in case of a direct connection of an electrolyser to a renewable electricity (RE) generation plant, it must have come into operation no earlier than 36 months before the electrolyser (criterion of additionality). For cases in which the electrolyser is powered by electricity sourced from the grid, RFNBO producers generally have to contract one or more RE plants through Power Purchase Agreements (PPAs) and the compliance with further criteria are a precondition for the produced powerfuels to be regarded as renewable. Specifically, aside from additionality, temporal and geographical correlation between electricity generation and its use for hydrogen production need to be demonstrated. Notable exceptions apply in the cases of a grid connection in bidding zones with a RE share of more than 90% (no PPA required but number of operating hours restricted to those corresponding with the exact RE share in the grid) and in bidding zones with a GHG intensity of the electricity grid below 18 gCO<sub>2eq</sub>/MJ (exempt from additionality). Figure 1 provides an overview of the different cases and applicable criteria.

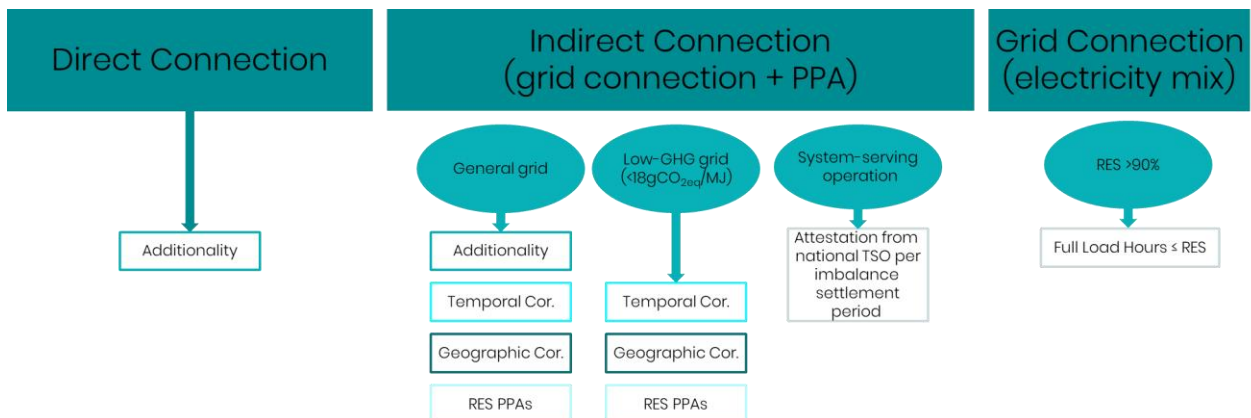


Figure 1: Electricity sourcing requirements as lined out in the DA on Art. 27(3) RED; own illustration

Our detailed assessment of the criteria as provided by the European Commission in its final proposal of the DA is specified below.

### **Phase-in provisions regarding additionality and temporal correlation allow for flexibility in early stages of market development – review should explicitly assess their effect in countries outside the EU**

The adopted DA provides for a phase-in of additionality until the end of 2027 and a transition from monthly to hourly temporal correlation at the beginning of 2030. The Global Alliance Powerfuels previously suggested to extend the phase-in period for both criteria until 2030, including for those

installations receiving state aid. The phase-in dates in the Commission's final proposal are an adequate compromise in our view, as they provide sufficient flexibility in the early stages of market development while ensuring that the renewability of the sourced electricity is reliably demonstrated (based on the stricter criteria applying from 2028/2030 onwards). We furthermore welcome that the more flexible temporal correlation requirement now applies to all installations, including those receiving state aid. However, we would have welcomed a smoother transition from monthly to hourly correlation. In addition, the adopted DA acknowledges the specificities of electricity markets in countries outside the EU in the application of the criterion of geographical correlation (see below), but makes no such adjustments for temporal correlation. In many countries with a high potential for producing renewable hydrogen or other powerfuels for export into the EU, the electricity grid is still largely based on fossil fuels. The effect that different configurations of temporal correlation have on the deployment of new renewable electricity capacities and the GHG intensity of the grid in third countries should thus explicitly be included in the report that is to be published until summer 2028 by the Commission to review the established criteria (see below).

#### **Persistence of grandfathering clause and new electricity mix emission intensity clause weaken additionality unnecessarily beyond transition period**

Given that suspending the requirement to source electricity from additional RE installations significantly increases the carbon intensity of the produced hydrogen<sup>1</sup>, it is unfortunate that the additionality requirement remains inadmissible for another ten years for installations that come into operation until the end of 2027. We have objected such grandfathering of the criteria for existing plants in a previous statement, but still consider the provisions in the DA to constitute an acceptable compromise.

As outlined above, the adopted DA introduces a further exemption of additionality for bidding zones where the emission intensity of the electricity mix is below 18 gCO<sub>2</sub>eq/MJ. This further undermines the additionality principle beyond the transition phase for locations with an electricity mix with a low GHG intensity, including those with a high share of electricity generated by nuclear power plants in the grid. In consequence, the incentive to synchronise the RFNBO ramp-up with the expansion of renewable energy capacities is reduced in the long-term while countries that (continue to) rely on nuclear energy are advantaged. As a central objective underlying the additionality criterion is to ensure that the build-up of hydrogen production goes hand in hand with the market integration of corresponding capacities to generate renewable electricity – a requirement that should hold in all locations in which the grid is not yet almost fully renewable –, we are critical of the provision in Art. 4(2) of the DA. A detailed assessment of the effects of this clause should be included in the review process of the criteria scheduled for 2028.

#### **Further clarity regarding the criterion of geographic correlation was accomplished**

With respect to geographical correlation, we welcome that there is now more clarity on how to provide proof of fulfilling the criterion for RFNBO production plants outside of the EU, specifically in countries where the concept of “bidding zones” does not apply. The adopted DA proposes that the “most

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<sup>1</sup> See Brauer et al., 2020, Green hydrogen : - how grey can it be?, <https://fsr.eu.eu/publications/?handle=1814/74850>



equivalent concept” in the respective country where the electrolyser is located can be applied instead. In practice, this could mean that requirements are based on similar market regulations, physical characteristics of the grid or, at last resort, country borders. Despite the enhanced clarity, the task remains to define the “equivalent concept” to the bidding zone for each third country in which RFNBOs are produced for export to the EU, for example through voluntary schemes approved by the European Commission. The criteria for proving geographical correlation contained in the first H2Global funding calls, which can be applied directly in all third countries, could provide good guidance in this context.

**Review of criteria in 2028 should be used to eliminate remaining flaws; if investment security can be maintained**

Overall, we consider the presented DA to be a reasonable compromise. However, some flaws are remaining as lined out beforehand. We therefore welcome that a review clause has been introduced, tasking the European Commission to assess the impact of the requirements (particularly temporal correlation) on market prices, GHG emissions and the development of the energy system and submit a report thereon until summer 2028. This review should be used to strengthen the established criteria; particularly the additionality principle, while however maintaining investment and regulatory security. We are therefore critical of the possibility to loosen requirements at a later date, as this could cause additional delay of investment decisions.

## Methodology for assessing the GHG emission savings from RFNBOs (Art. 28 REDII)

The Delegated Act to Art. 28 sets out the methods for calculating the greenhouse gas emissions from the production and use of RFNBOs and the achieved emission savings. Additionally, eligible carbon sources, and processing requirements are defined.

**Fossil fuel comparator remains too low for renewable hydrogen but is unlikely to undermine credibility of established methodology**

To assess the emission savings from RFNBOs, the DA specifies the fossil fuel comparator the emissions of the produced powerfuels are to be compared to establish whether they achieve the necessary emission savings of 70% stipulated in the REDII. The DA fixes a fossil fuel comparator of 94 g CO<sub>2eq</sub>/MJ for all RFNBOs, which is aligned with the prevailing one for biofuels. As we suggested in our previous statement, this is rather low for renewable hydrogen, especially in application where it directly replaces fossil hydrogen. For this reason, to establish a better link between the comparator and the actual total emissions of the fossil energy carriers that are replaced by the respective use of RFNBOs, we have suggested an alternative comparator of 104 g CO<sub>2eq</sub>/MJ for applications in which fossil hydrogen is directly substituted for renewable alternatives. The lack of such a provision will lead to emission savings being under instead of overstated, however, it is unlikely to undermine the credibility of the established methodology.





### **Rules for co-processing and co-generation have been clarified but further guidance would be helpful**

We are satisfied to see that co-processing of RFNBOs with fossil feedstocks or products is now more clearly accounted for. While previous drafts provided that all products of such processes were to be regarded as having the same emission intensity, there is now an exception for co-processing. This allows the (possibly both renewable and non-renewable) input components to be distinguished according to their energetic value and the greenhouse gas emission intensity of the produced RFNBOs to be calculated as the average during at most one calendar month. This enables companies to plan their production accordingly in order to reach the required greenhouse gas emission savings.

Additionally, processes yielding multiple outputs, renewable and non-renewable, are now consistently accounted for. In the previous draft published by the Commission for consultation in 2022, there was a mismatch between the text of the DA and the Annex, with the DA stipulating that all products shall be considered to have the same greenhouse gas emission intensity. The adopted version now sets out that the greenhouse gas emissions of the different products are to be determined by the relevant share of the energy input, as previously already formulated in the Annex Article 3. It stipulates that the share of RFNBOs and recycled carbon fuels in a mixed product is determined by the respective fraction of the energy input that qualify as inputs for the respective designation. The energy input is determined by the lower heating value for materials, fuel combusted to generate electricity and industrial off-gases, as well as the useful heat. Further outputs are only taken into account when calculating the emission intensity, as laid out in Article 15.

This is particularly relevant for renewable hydrogen replacing fossil-based hydrogen in refineries for hydro treatment of conventional fuels, as well as for the Fischer-Tropsch (FT) process. Existing FT facilities produce a range of synthetic fuels and chemicals using predominantly fossil energy inputs. The FT process is feedstock agnostic and can be gradually repurposed to co-process renewable and fossil energy inputs to yield a mixture of renewable and non-renewable outputs. In large production facilities, more than a hundred different products can be produced. More flexible GHG emission allocation rules could help to allow a gradual repurposing of large FT production facilities. Additional guidance on how the renewable inputs and corresponding GHG emission savings can be allocated in such integrated plants, taking into consideration that a fully proportional allocation to all outputs can diminish the output of certifiable products and hence reduce the incentive to replace fossil inputs by renewable ones, would be helpful to ensure a fast repurposing of existing facilities.

### **Specification of admissible carbon sources includes a phase-out pathway for fossil CO<sub>2</sub>; added review should not call this into question**

Regarding the sources of CO<sub>2</sub> for carbon-based RFNBOs, we support the exclusion of electricity generated by combustion of fuels from 2036, as previously suggested, although an earlier exclusion would have been ideal. The extension of the admissibility of other industrial point sources until 2040 reflects the expectation that compared to the combustion of fossil fuels for energy generation, other emitting industrial processes based on fossil fuels will be more difficult to phase out and hence available longer. The adopted DA makes the mentioned phase-out dates subject to review in light of the



implementation of the – yet to be defined – EU climate target for 2040 in the ETS Directive. We urge the Commission to use this review to consider an earlier phase-out of electricity generation plants and other avoidable industrial carbon sources. It is imperative that this review cannot serve as a “back door” for prolonging the use of unsustainable carbon for RFNBO production.

We previously recommended differentiating between avoidable industrial carbon sources, which should be phased-out sooner than by 2040 in our view, and unavoidable ones (such as from cement production), which could remain admissible beyond that. This should be considered in the mentioned review.

**Clearer definition and incentives for “sustainable carbon” – particularly Direct Air Capture – is needed**

In addition, given that the demand for CO<sub>2</sub> as a feedstock is likely to increase as the use of fossil fuel inputs is reduced and replaced in processes such as the production of fuels or chemicals, a more precise common definition of “sustainable carbon” applicable across EU legislation should be developed. In the same vein, the use of Direct Air Capture (DAC) to provide CO<sub>2</sub> as a raw material needs to be further incentivized to allow for the required ramp-up of technologies. We are hopeful that within the context of the foreseen Net-zero technology push outlined in the European Green Industrial Plan, further support will be made available for integrated powerfuels value chains, including green hydrogen production as well as CCU technologies such as DAC. Establishing quotas for the use of fuels produced using DAC within the revised REDII would also establish important demand-side signals that could guarantee a fixed market share.

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