

## ERCST FEEDBACK

### *Hydrogen and the RED Delegated Acts – focus on hydrogen*

#### Highlights

- **General remarks:**
  - A hydrogen regulatory framework which just focuses on one specific technology may increase the scarcity of renewable electricity.
  - Allowing low-carbon hydrogen to play a clear role during the transition would decrease the pressure on the availability of renewable electricity and reduce the need for regulatory intervention (i.e. the additionality).
- **Delegated act on additionality:**
  - This DA may force EU industry in some Member States to import renewable hydrogen.
  - Flexibility in the transition phase: This is a positive step, however, is highly unlikely that industry will have access to hydrogen 24/7.
  - The grandfathering provision: It is unlikely that the hydrogen market would ramp-up quick enough to make this provision a real threat.
  - There are several provisions that require further clarification.
- **Delegated act on GHG emissions methodology for RFNBOs and RCFs:**
  - This DA provides a good basis for a GHG emissions methodology for low carbon hydrogen.
  - This DA goes beyond the scope of the additionality DA making it possible for the same electrolyzer to produce an additional share of RFNBOs or low carbon hydrogen.
  - Not publishing the GHG emissions methodology for RFNBOs and low carbon hydrogen at the same time increases regulatory risks.
  - Further clarification should be provided as to how this DA interacts with the additionality DA.
  - Further clarification should be provided as to how this DA should be interpreted in the absence of a methodology to assess GHG emissions of low-carbon hydrogen.

#### Authors

Andrei Marcu, Olivier Imbault, Bartek Czaczerski, Antonio Fernandez

## **General Remarks**

The European Commission is envisaging a hydrogen economy where regulation rather than markets is playing the key role in the development of the hydrogen market. Consequently, the amount of renewable electricity required to produce RFNBOs will depend on the level of ambition of targets and incentives set in the hydrogen regulatory framework. In other words, a hydrogen regulatory framework with focus on just one specific technology (renewables) may increase the scarcity of renewable electricity and see usage that is not necessarily the most economical and ecologically efficient.

Allowing low-carbon hydrogen to play a clear and significant role during the transition would decrease the pressure on the availability of renewable electricity, reduce the need for regulatory intervention (i.e. the additionality) and create the necessary conditions to develop the Hydrogen market.

Hydrogen deployment should aim to decrease emissions without unconditionally promoting one specific technology (renewables). A technologically neutral approach would support a faster ramp-up of the hydrogen market by providing the volumes required at affordable prices to the market demand side, especially to sectors where hydrogen has the highest emissions' abatement potential. These sectors need hydrogen that is clean, affordable, reliable (24 hours a day, 7 days a week) in sufficient quantities, of requisite quality, rather than green, blue, or pink hydrogen.

The Delegated Acts do address to renewable hydrogen, but are insufficient to define all remaining hydrogen production processes. The lack of definition for low-carbon hydrogen is the elephant in the room whose methodology should have been published along with the methodology for RFNBOs and recycled carbon fuels. A joint publication of both methodologies would have provided greater clarity for investments and reduced regulatory risk, speeding up investment decisions and accelerating the ramp-up of the hydrogen economy.

## **Delegated Act on the additionality**

### **1. What does this Delegated Act address?**

In line with art 28 (5) of the RED 2018, this Delegated act establishes the requirements to consider electricity used to produce RFNBOs as 100% renewable - under three different scenarios and in two different time frames (transitional phase until 2027, final phase after 2027):

1. RES installation is directly connected to the electrolyzer.
2. Electrolyzer using electricity from grid through a PPA.
3. Electrolyzer using electricity from grid with RES share of at least 90%.

# ERCST

Roundtable on  
Climate Change and  
Sustainable Transition

There are three main requirements to ensure that renewable electricity feeding the electrolyzer is produced with additional RES capacity:

- A 36-month time window:
  - The RES installation must not come into operation earlier than 36 months before the installation producing RFNBOs.
- Temporal correlation:
  - As a general principle, RFNBOs should be produced in the same hour as the RES electricity sourced from the grid (1 month during the transition phase). This does not apply to scenarios 1 and 3.
- Geographical correlation:
  - As a general principle RFNBOs should be produced by renewable electricity produced in the same bidding zone as the electrolyzer. This does not apply to scenarios 1 and 3.

## 2. Why is this Delegated Act important?

**From the production side of the market**, producers of RFNBOs need clarity on the extent to which the hydrogen they will be producing will qualify as 100% renewable in order to make investment decisions accordingly.

**From the demand side of the market**, RFNBOs consumers need clarity as to whether the hydrogen they will be consuming will be labeled as renewable and therefore count towards the targets and incentives set by law.

**From a climate change point of view**, this delegated act is important because it establishes a direct relation between the production of renewable hydrogen and the production of renewable electricity; the intention is to avoid that the production of renewable hydrogen leads to an overall increase in emissions by redirecting the renewable electricity from other end uses, which also need renewable electricity to decarbonize.

## 3. Will it serve the development of the hydrogen market?

**This DA may lead to the following consequences:**

- **Forcing EU industry in some Member States to import renewable hydrogen:**

The geographical correlation requirements set in Art 4 (d) make the production of renewable hydrogen very challenging in countries with a low RES share in the mix. Those Member States may be forced to import renewable H<sub>2</sub> (molecules) rather than renewable electricity (electrons) either from other European Member States or from third countries to achieve their national RFNBOs targets.

Both Imports and intra-EU trade of hydrogen require specific transportation infrastructure. In the proposed hydrogen and decarbonized gas market package the European Commission works with the assumption that the EU hydrogen backbone will not be in place before 2030.

As a result, intra-EU hydrogen trade is made even more difficult, indirectly forcing industrial players into imports from third countries<sup>1</sup> and creating competitive disadvantages.

- **Impact of the transitional phase and grandfathering:**

**Transitional phase:** Art. 7 establishes a transitional phase (until 2027) during which market operators will benefit from the relaxation of some of the requirements to count electricity sourced from existing RES facilities through a PPA as 100 % renewable. The RFNBOs targets proposed in the RED revision represent a considerable challenge for EU industry and transport sectors. Flexibility in the transition phase is therefore a positive step, reducing the effects of a potential scarcity of renewable electricity. However, even with the flexibilities provided, there is highly unlikely that industry will have access to hydrogen 24/7. Low-Carbon hydrogen could help fill the gap during the transition period.

**Grandfathering:** Art. 8 provides that any installation starting operation before 1<sup>st</sup> January 2027 (end of the transition period) will be exempted from the additionality requirement forever. Grandfathering is not without risk. If the market ramps up too quickly, RES may be redirected from other uses. However, this scenario is unlikely given today's regulatory uncertainty, the time needed to develop the required transportation infrastructure and the availability of existing assets not benefiting from State Aid anymore. The hydrogen economy is expected to accelerate closer to 2030.

#### 4. Need for clarification

Further clarification should be provided as to:

- Why provisions in Art. 7 (transitional phase) and Art. 8 (grandfathering) do not apply to direct-connected installations, for instance the 36-month window? The text seems to incentivize hydrogen production close to consumption during the transition phase.
- Why Art. 3 (b) provides for a 24-month period to add additional capacity to an electrolyzer while the period for connected installations is 36 months?
- Would it be possible to cumulate several methods of production of RFNBOs (i.e. renewable share of the mix in line with art 27 (3) of the RED and electricity taken from the grid through PPA (Art. 4 DA)?

### Delegated Act on the methodology

#### 1. What does the draft DA address?

This Delegated act addresses two main issues:

- It provides that the minimum threshold for greenhouse gas emissions savings of recycled carbon fuels should be at least 70%

<sup>1</sup> For long transportation distances, liquefied hydrogen and LOHC are the options with the lowest costs. European Commission 2021 JRC, Assessment of hydrogen delivery options. [https://joint-research-centre.ec.europa.eu/system/files/2021-06/jrc124206\\_assessment\\_of\\_hydrogen\\_delivery\\_options.pdf](https://joint-research-centre.ec.europa.eu/system/files/2021-06/jrc124206_assessment_of_hydrogen_delivery_options.pdf)

- It provides a methodology for assessing greenhouse gas emissions savings from both RFNBOs and recycled carbon fuels.

## **2. Why is this Delegated Act important?**

In the proposed revision of the RED, Art. 29a establishes that energy from RFNBOs can only be counted towards the renewable targets set in the RED, if GHG emissions savings are at least 70%. The proposed revision of the RED defines RFNBOs as liquid and gaseous fuels whose energy content is derived from renewable sources other than biomass.

However, the definition is incomplete, as neither the fossil fuel comparator against which the 70% should be compared, nor the methodology to assess GHG emissions to produce RFNBOs are mentioned.

The Delegated Act does complete the definition for both RFNBOs and RCFs by specifying a fossil fuel comparator in alignment with the RED<sup>2</sup> and the methodology to assess GHG emissions. It also clarifies the lifecycle assessment scope which is reflected in the methodology.

The Delegated Act is also important because it provides a good basis for developing the methodology to assess GHG emissions of low-carbon hydrogen.

## **3. Will it serve the development of the hydrogen market?**

The proposed Delegated Act establishes that if the electricity feeding the electrolyzer cannot be accounted as 100% renewable according to the provisions of the first delegated act, there is still the possibility that at least some share of the hydrogen produced can be accounted either as renewable or low carbon hydrogen.

However, we reiterate that this delegated act is not enough to cover all the different hydrogen production processes other than from renewables, excluding biomass. The definition for low-carbon hydrogen is incomplete and the necessary clarification should have been published at the same time as the methodology for RFNBOs and recycled carbon fuels. If methodologies for both renewable hydrogen and low-carbon hydrogen had been published together, this would have provided greater clarity for investments and reduced regulatory risk.

## **4. Need for clarification**

Further clarification should be provided as to:

- How to understand this proposal in the absence of the Delegated Act establishing the GHG emissions methodology for low-carbon hydrogen? Particularly, given that the methodology for RFNBOs includes some provisions to assess the GHG emissions of

<sup>2</sup> Recital (9) mentions that the fossil fuel comparator for RFNBOs should be set at 94 gCO<sub>2</sub>eq/MJ.

# ERCST

---

## Roundtable on Climate Change and Sustainable Transition

electrolytic hydrogen produced through nuclear electricity. The methodologies should be coherent with each other, however it is very difficult to assess this coherence because the Delegated Act for low-carbon hydrogen has not yet been published.

- Paragraph 6 of the Annex mentions that where the number of full load hours the electrolyzer is producing is equal or lower than the number of hours in which the marginal price of electricity was set by RES or nuclear RFNBOs and recycled carbon fuels, electricity shall be attributed zero GHG emissions.
- How this delegated act interacts with the delegated act on additionality?
  - The delegated act on additionality establishes that electricity from the grid can be counted as fully renewable if the electrolyzer is located in a bidding zone where the average proportion of RES electricity exceeded 90% in the previous calendar year. The delegated act on methodology states that in line with art 27 (3) of the RED, the share of RES electricity as measured two years before the production of the RFNBO could be used to determine the number of hours where the electrolyzer connected to the grid could produce an RFNBO.
- How can it be assured this additional flexibility will not lead to double counting?