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European Clean Hydrogen Alliance

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Dear Readers

This week the European Commission published its REPowerEU package that includes a set of actions to accelerate hydrogen deployment. It also published for public consultation two much awaited draft legal proposals on the definition and production of renewable hydrogen. Find out more below!

European Commissioner Thierry Breton and the CEOs of 20 electrolyser manufacturers signed a Joint Declaration defining an ambitious target for the increase of electrolyser manufacturing capacities in Europe, and setting out policy measures to support this. We give you the details.

Also find information on the 16 June Hydrogen Forum that we organise for all Alliance members online, three upcoming Alliance events.

Your European Commission Hydrogen Team in the Directorate-General for the Internal Market & Industry

RePowerEU Plan: Actions to accelerate EU hydrogen deployment

In response to a decision by EU Heads of Government to phase out Russian gas, oil, and coal imports as soon as possible, on 18 May the Commission presented its REPowerEU Plan with a series of actions to speed up the clean energy transition to create a more resilient energy system. The main strands of action under the plan are saving energy, diversifying energy supplies, substituting fossil fuels, and accelerated investments.

In March the Commission had announced a "Hydrogen Accelerator" doubling the previous hydrogen production target to 10m tons produced annually in the EU, plus 10m tons of imports annually by 2030. To meet these targets, the REPower EU Plan adopted on 18 May sets out the following actions:

- Advances the **regulatory framework** for hydrogen by publishing for public consultation two Delegated Acts on the

definition and production of renewable hydrogen;

- Presents a legislative proposal and formal Recommendations on **permitting of renewable energy**, including renewable hydrogen;
- Calls on the EP and Council to increase **targets for renewable hydrogen** in industry and transport to 75% and 5% respectively (as part of the ongoing revision of the Renewable Energy Directive);
- Prepares for **joint hydrogen purchasing** under the EU Energy Platform (similar to LNG);
- Rolls out **Carbon Contracts for Difference** to switch existing hydrogen production from natural gas to the production of renewable hydrogen;



- Creates dedicated windows under the **EU Innovation Fund** to support hydrogen usage in industry and the EU manufacturing of innovative clean technologies such as electrolyzers and fuel cells;
- Announces the intention to complete the assessment of the first **hydrogen IPCEIs** by the summer;
- Increases the Hydrogen Joint Undertaking budget by €200m to double the number of **hydrogen valleys**;
- Maps preliminary **hydrogen infrastructure** needs by March 2023 and mobilises EU funding (CEF, RRF, Cohesion Policy).

For further information on the REPowerEU Plan click [here](#).

Draft Delegated Acts on Additionality & Emissions Calculations published for public feedback

On 23 May, the Commission published two draft Delegated Acts for public feedback that it plans to adopt under the Renewable Energy Directive. Stakeholders can provide feedback until 16 June. After assessing the feedback, the Commission will formally adopt proposals for the two Delegated Acts. The European Parliament and Council (the 27 EU Member States) will then have two months (which can be extended to four months) to object to the Commission's drafts. If there is no objection, then the two Delegated Acts enter into force.

Delegated Act on Additionality

The Delegated Act on Additionality establishes conditions that producers of hydrogen must meet for hydrogen to be considered renewable. These conditions relate to the renewable electricity that electrolyzers source to produce renewable hydrogen. Three main conditions set out in detail the principles of additionality, temporal correlation, and geographic correlation that were already established in general terms in the Renewable Energy Directive. In addition, the draft Delegated Act establishes an additional condition: for the production of renewable hydrogen, electrolyzers can only source renewable electricity from grid-connected installations that did not receive state aid.

The **additionality principle** in the draft Delegated Act establishes that installations generating renewable electricity must not have come into operation more than 36 months before the entry into operation of the electrolyzers producing renewable hydrogen from it. The objective is to ensure that the increased demand for renewable electricity from renewable hydrogen production will be matched by an equal increase in the generation of renewable

electricity so that the overall carbon intensity of the electricity system does not deteriorate as a result of renewable hydrogen production.

The **temporal correlation principle** ensures that electrolyzers source renewable electricity only at the same time as this electricity is generated. Because this condition will initially make the production of renewable hydrogen more complex and costly, the Commission suggests to phase it in gradually, starting with monthly correlation before moving to hourly correlation on 1 January 2027.

According to the **geographic correlation principle**, the installation generating the renewable electricity sourced by the electrolyser must be located in the same electricity bidding zone (in practice mostly the same Member State) than the electrolyser, though there are some exceptions. This is to protect the electricity grid from additional congestion caused by increased demand for electricity for hydrogen production.

Delegated Act on the Methodology for the Calculation of Emissions

The objective of the second Delegated Act is to ensure that hydrogen used in the transport sector contributes to EU climate change objectives. The Act sets out the requirements for renewable electricity used to produce these renewable transport fuels so that they can be counted as fully renewable. This methodology covers the main inputs, including electricity and fuels used.

Both draft Delegated Acts are now open for public feedback until 17 June. For further information click [here](#).



European Electrolyser manufacturers and European Commission sign Joint Declaration

Achieving the ambitious renewable hydrogen targets announced in March's RePowerEU communication will require a significant increase in installed electrolyser capacity to 90-100 GWLHV (measured in terms of hydrogen output). However, industry's capacity to manufacture electrolysers is currently estimated to be only 1.75GWLHV per year.

To ramp-up electrolyser manufacturing, Commission officials and 20 European electrolyser manufacturers, all members of the European Clean Hydrogen Alliance, met in Brussels on 5 May to sign a Joint Declaration with European Commissioner for the Internal Market Thierry Breton. In the Declaration, the companies agreed to a ten-fold increase in electrolyser manufacturing capacity in Europe to 17.5GW per year by 2025. To provide the enabling conditions for the ramp-up in manufacturing capacity, the Commission agreed to address three key areas—regulatory framework, access to finance, and supply chain integration.

To create the right regulatory framework for renewable hydrogen, the Commission notably commits to ensuring that regulation governing the production of renewable hydrogen, including on the availability of renewable electricity to renewable hydrogen production projects, will be justified and proportionate and will support a fast and affordable deployment of the market for renewable hydrogen and its production in Europe.

On access to finance, the Commission committed to completing the assessment of the first Important Projects

of Common European Interest on hydrogen within six weeks from the submission of a complete notification, with a shared aim to enable assessments to be completed by summer. The Commission will seek to support clean tech manufacturing, including electrolyser manufacturing projects in its third large-scale project call under the EU Innovation Fund, planned for the second half of 2022. Conversely, the electrolyser manufacturers committed to submitting high-quality projects that are in line with EU energy and climate targets to facilitate quick assessments by the Commission.

In relation to supply chain integration, the Commission notably committed to concluding further raw material partnerships with third countries, including countries that supply raw materials required for electrolysers. Furthermore, electrolyser manufacturers in Europe committed to working with the Commission to integrate the value chain, diversify and tackle dependency of key raw materials and chemicals within the framework of the EU industrial strategy.

Finally, the Declaration announces the setting up of an Electrolyser Partnership within the European Clean Hydrogen Alliance that brings together manufacturers and suppliers of components and materials, with financial institutions such as the EIB invited to participate as well. The goal of this partnership will be to address the challenges outlined above.

For more details, please see the [Joint Declaration](#) and the Commission [press release](#).



Hydrogen Forum on 16 June

The fourth Hydrogen Forum that brings together all members of the Alliance will take place on 16 June.

The Forum will be opened by Commissioner Thierry Breton. Four panels will focus on:

- the hydrogen-relevant actions the Commission announced in REPowerEU;
- the regulatory framework for hydrogen (notably the two Delegated Acts referred to above);

- ongoing actions to support the Alliance project pipeline;
- the presentation and discussion of the hydrogen permitting report prepared by the Alliance working group.

In addition, two sessions will focus on actions to ramp up electrolyser manufacturing in Europe and on the potential of hydrogen in the buildings sector.

You will be able to join the Forum online via the [Alliance's member platform](#).

Profiling a project from the Alliance pipeline: Hydrogen City

In the village of Stad aan 't Haringvliet on the Dutch island of Goeree-Overflakkee, the aim of the Hydrogen City project is to heat buildings using 100% green hydrogen, locally produced with excess electricity, instead of natural gas.

The project is part of the Dutch national hydrogen strategy, is supported through the Green Deal with the Dutch government, and is a pilot for the regulatory framework. The project is in the project

pipeline of the European Clean Hydrogen Alliance and an IPCEI candidate.

European Commission scenarios for residential heating in 2050 point to a multi-technology, multi-energy carrier future for buildings, where both electricity and gaseous fuels (including hydrogen) play a relevant role¹. In the Netherlands hydrogen pilot projects are underway to make this alternative available from 2030.



Inspiration house

To showcase hydrogen for use in buildings the "Inspiration house" was heated with hydrogen for two months using three different boilers from different manufacturers, which alternated heating the house. Common copper pipes were used in the house, and the existing natural gas grid distributed hydrogen to the house.

Safety

DNV has successfully developed a continuous hydrogen leakage detector. The system can detect both small continuous leaks and large leaks resulting from pipes damaged by work. The system, the size of a lunch box, can easily be built into the meter cupboard. The pipes are demonstrably gas tight.

¹ European Commission, Impact assessment to the Climate Target Plan, figure 58.



The 'Inspiration house,' which is open to the public, showcases energy renovation measures that can be taken as well as installing an electric heat pump. Citizens whose houses support low-temperature heating and who want to switch to a heat pump are supported by the project as well.

A citizens' initiative

The citizens took this initiative when the Dutch government decided to move away from natural gas for heating buildings. The name of the project, "Stad Aardgasvrij" means "city free of natural gas" in Dutch.

One of the citizens is Koos van Rijn (67): "I live in a beautiful house in Stad aan 't Haringvliet, dated 1870. To reduce energy costs we insulated the building. But there are more options to be less dependent on natural gas. One of those options is hydrogen. Energy prices are higher than ever before, and we don't

know what will happen in the future. This pilot is a huge opportunity for the citizens of Stad aan 't Haringvliet."

The project is, and will remain, a citizen's initiative in which the citizens are equal partners of the project. They are involved in all decision-making processes that will culminate in a proposal that will be voted on by the village. The proposal itself is being refined and tested already as part of a participative process. If the proposal does not receive 70% of citizens' and entrepreneurs' votes, it will not go ahead.

