

November 17, 2022

Recent Developments in EU Hydrogen Initiatives

SUMMARY

Recent changes in hydrogen policy in the European Union have primarily resulted from two external influences – (1) the war in Ukraine has brought to the forefront the EU’s energy dependence on Russian fossil fuels, prompting the EU to accelerate its original renewable hydrogen strategy through the REPowerEU plan; and (2) the recent expansion of incentives and opportunities for hydrogen investment in the US and UK has prompted the EU to lower the regulatory hurdles to remain competitive and attract private investment in the EU hydrogen sector.

As a result of these developments, the EU has reinforced and expanded its commitment to hydrogen as an energy source, promising to increase levels of public sector funding available to hydrogen producers and reducing bureaucratic hurdles that might hinder access to that funding. For example, the European Commission approved €5.4 billion in state-aid-funded hydrogen subsidies in July 2022, launching 41 projects focused on hydrogen technology in 15 countries. However, much of the details regarding the REPowerEU Plan remain to be determined.

BACKGROUND

Clean hydrogen is a central part of the EU’s push for net-zero greenhouse gas emissions by 2050 due to hydrogen’s potential in sectors that are not as easily de-carbonised through electrification. Nevertheless, the low carbon hydrogen market is still in its early stages and significant investments in infrastructure will be required in order for hydrogen to achieve greater penetration as a fuel source.

For additional information on hydrogen, please see these additional S&C resources:

- S&C’s memo on the basics of the hydrogen market, available [here](#);
- S&C’s Critical Insights episode on government policies towards hydrogen, available [here](#);

- S&C's Critical Insights [episode](#) and related [memo](#) on investment structuring-considerations for hydrogen projects; and
 - S&C's webinar on financing hydrogen projects and related M&A and joint ventures, available [here](#).
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I. AMENDMENT TO THE RENEWABLE ENERGY DIRECTIVE II

On September 14, 2022, the European Parliament approved an amendment (Amendment 13) to the Renewable Energy Directive (RED II)¹. Amendment 13 will have the effect of broadening the definition of renewable fuels of non-biological origin (i.e. renewable hydrogen) in comparison to the existing requirements of RED II and the EU Commission's previously proposed draft Delegated Act².

The text of RED II emphasised the 'principle of additionality' which requires that only **new** renewable capacity may be used to produce hydrogen that is classified as 'renewable'. Under RED II, the Commission has the power to adopt a delegated act to supplement RED II by establishing a Union methodology setting out detailed rules for classifying 'renewable hydrogen'. The EU Commission's proposed Delegated Act retained the principle of additionality. Under the proposed Delegated Act, renewable hydrogen producers would have been prevented from entering into renewable power purchase agreements with existing producers of renewable energy if the hydrogen produced was to be classified as 'renewable hydrogen'. The rationale behind such a rule was that it would prevent current renewable power from being diverted from immediate grid decarbonisation towards hydrogen production.

However, the EU Parliament's Amendment 13 departs from this approach amidst fears that it would stunt the growth of the hydrogen sector in Europe. The resulting provision in the EU Parliament's amendment now simply provides that electricity obtained from direct connection to installations generating renewable electricity may be fully counted as renewable electricity where it is used for the production of renewable fuels of non-biological origin (i.e. renewable hydrogen) provided that the installation demonstrates that the electricity concerned has been supplied without taking electricity from the grid. The requirement that the installation providing the electricity come into operation **after or at the same time** as the infrastructure producing the renewable hydrogen has now been removed. This means **existing** renewable electricity installations can be used to produce 'renewable' hydrogen. This step reinforces the EU's commitment to growing the hydrogen sector immediately and facilitating private sector investments in hydrogen in the long term.

The practical significance of the 'renewable hydrogen' label is noteworthy – producers of renewable hydrogen will be able to access funding support at the EU and national levels under EU state aid rules. Most recently, on September 21, 2022, the European Commission approved up to €5.2 billion in public funding in 13 EU Member States for hydrogen projects, with access to these funds restricted to projects that produce renewable hydrogen.

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However, stakeholder responses to the European Parliament's approved Amendment have been mixed. Hydrogen Europe, an association representing the hydrogen industry, has been supportive of the simplification of the regulations but critical of the lack of long-term legal certainty created by the differences in the Commission's and Parliament's approaches and its effect on the market³. This uncertainty arises at an EU level as well as the national level.

At an EU level, the Amendment has been adopted only by the European Parliament. It has been referred back to specific Committees of the EU Parliament for their opinion, subsequent to which it will still need approval from the European Council before the RED II is amended. These developments signal to the Commission that the approach taken in the draft Delegated Act cannot stand and will most likely result in restarting the drafting process for the Delegated Act. This process has already taken a significant time - the Delegated Act was meant to be adopted in the fourth quarter of 2021 but the draft mentioned above was made available for stakeholder consultation as late as May 2022. There is no indication of a new proposed Delegated Act by the Commission nor has a projected timeline for the legislative process to approve the Parliament's adopted Amendments been provided.

At a national level, the European Parliament's adoption of Amendment 13 means that the Commission can no longer mandate the additionality requirement, but individual member states can still choose to enforce the stricter standards. This uncertainty will remain until either the Commission adopts the Parliament's stance on additionality or the RED II is amended.

II. REPOWEREU PLAN

The EU published the [REPowerEU Plan](#) in May 2022⁴ in response to the challenges caused by dependence on Russian fossil fuels made apparent by the war in Ukraine. REPowerEU set a target of 10 million tonnes of domestic renewable hydrogen production and 10 million tonnes of renewable hydrogen imports by 2030. The REPowerEU plan called for acceleration in the implementation of various measures of the EU's hydrogen strategy, including a call to deploy hydrogen infrastructure for producing, importing and transporting 20 million tonnes of hydrogen by 2030. The plan estimates investment needs to be in the range of €28-38 billion for EU-internal pipelines and €6-10 billion for storage. In order to achieve these targets, the European Commission has promised to map preliminary infrastructure needs by March 2023 in a consultative process involving Member States, national regulatory authorities, project promoters and other stakeholders followed by mobilisation of public EU funding through existing mechanisms such as the Connecting Europe Facility. At COP27 in November 2022, the European Commission also signed partnerships with Egypt, Kazakhstan and Namibia on the development, deployment, use and undistorted trade of renewable hydrogen and its derivatives.

The Commission also promised to top-up investments in the [Hydrogen Joint Undertaking](#) by €200 million. The Hydrogen Joint Undertaking is a public-private partnership supporting research and innovation

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activities in hydrogen technologies in Europe and consists of the Commission, fuel cell and hydrogen industries represented by Hydrogen Europe and the research community represented by Hydrogen Europe Research. The funding increase has been made with the specific goal of doubling the number of 'Hydrogen Valleys', where the EU is facilitating the creation of integrated hydrogen projects across the full hydrogen value chain.

The REPowerEU plan also contemplates specific measures to support hydrogen uptake and electrification in industrial sectors. Under its provisions, the EU Commission plans to introduce carbon contracts for difference. These are aimed at providing price certainty and facilitating market-competitiveness for low carbon electricity producers by paying them the difference between the market price for emissions allowances and carbon avoidance costs (where carbon avoidance costs are greater). However, beyond the promises in the REPowerEU plan, the Commission has not provided any further details on the mechanism, operation or applicability of the contracts for difference. Indications in the REPowerEU plan were that this would apply only to renewable hydrogen but in the absence of any concrete updates, there is a lack of certainty on the implementation of this proposal.

Further, the Commission promised dedicated REPowerEU fund allocation periods under the [Innovation Fund](#) (the EU funding programme for the development of innovative low-carbon technologies) to support (1) the full switch of existing hydrogen production in industrial processes from natural gas with renewables and (2) transition to hydrogen-based production processes in industrial sectors, such as steel production. The REPowerEU plan reiterates the EU's long-term commitment to hydrogen, proposing a technical advisory facility in cooperation with the European Investment Bank (EIB) to support renewable energy projects that have power purchase agreements in place.

Beyond these long-term goals, the immediate acceleration of the EU's commitment to hydrogen is most prevalent in the promise in the REPowerEU plan to double the funding available for the [Large Scale Call](#) for projects under the Innovation Fund to €3 billion. This funding is available for projects with a capital expenditure above €7.5 million and will comprise three elements: (1) €1 billion will be allocated for electrification and renewable hydrogen production and use in industry; (2) €700 million will be directed towards clean-tech manufacturing of key components for renewable energy, energy storage and renewable hydrogen; and (3) a budget of €300 million will be assigned to support mid-sized pilot projects with deep decarbonisation potential⁵. The programme is expected to be launched in the second half of November 2022 with a deadline for submission of applications currently estimated to be in Q3 2023.

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ENDNOTES

- ¹ Amendments adopted by the European Parliament on 14 September 2022 on the proposal for a directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652
- ² Article 27(3) of the Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) [2018] OJ L328/82 in conjunction with Article 3 of the [Draft Delegated Act](#) of the Commission
- ³ Historical Day for green hydrogen, Hydrogen Europe, <https://hydrogeneurope.eu/historical-day-for-green-hydrogen/>
- ⁴ REPowerEU Plan, EU Commission, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en
- ⁵ EU Commission EVP Timmermans: Keynote Speech at EU Hydrogen Week 2022, https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_22_6396

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