



EUROPEAN COMMISSION

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
Ecosystems IV: Mobility & energy-intensive industries

European Hydrogen Forum

16 June 2022

- REPORT -

Summary

The fourth Hydrogen Forum of the European Clean Hydrogen Alliance took place on 16 June 2022. Around 400 participants joined online with approximately 70 participants attending in person. The Forum takes place twice a year and bring together all members of the Alliance.

Executive Vice President for the European Green Deal, Frans Timmermans, and Commissioner for the Internal Market, Thierry Breton, jointly opened the Forum. Members of the Alliance discussed the Commission's REPowerEU Plan, which sets out a series of actions to accelerate hydrogen deployment to spur the green transition and replace Russian fossil fuels. The Delegated Act on Additionality, whose public consultation closed on 17 June, was central to the many discussions during the Forum, in particular the session on the Regulatory Framework for Hydrogen.

An Electrolyser Partnership was launched to support the commitment by EU industry to increase ten-fold its hydrogen electrolyser manufacturing capacity by 2025. A panel discussed the follow-up to the publication of the Alliance project pipeline at the previous Forum, notably in terms of project financing that is being facilitated. Furthermore, the Alliance presented its report on the permitting of hydrogen installations, which will inform the Commission's ongoing work to simplify procedures for renewable energy and hydrogen projects. The Alliance Roundtable on Buildings presented projects that use hydrogen to decarbonise the building sector before Kerstin Jorna, Director-General for the Internal Market, Industry and SMEs, closed the Forum.

Detailed report

Forum Opening

Executive Vice-President for the European Green Deal, Frans Timmermans, opened the Forum stating that that we are confronted with a daunting challenge with the war in Ukraine requiring the EU to accelerate the energy transition. The price of oil and gas has exploded; sanctions also pose a challenge to the EU. On hydrogen he said: *“Hydrogen is an essential part of Europe’s future energy sovereignty. The speed of development of the European hydrogen sector shows that we can decarbonise our economy and secure our independence from Russian fossil fuels. The hydrogen accelerator in the REPowerEU plan will steer the necessary investment to scale up European production of clean hydrogen.”* He concluded by stating that the business case for hydrogen has strengthened. On Hydrogen diplomacy and imports he mentioned that our activities will be centred around the Mediterranean Sea including part of Africa.

Commissioner for the Internal Market, Thierry Breton, said: *“Hydrogen enables the green transition of Europe’s industry and is a driver for industrial innovation, competitiveness and resilience. The European industry is rolling out large-scale projects producing clean hydrogen and using it to decarbonise industrial processes. The European Clean Hydrogen Alliance is instrumental in this process. The Alliance facilitates partnerships and collaboration, fostering transnational investments materialising, notably, in IPCEIs, and helping create a favourable regulatory environment.”* He concluded that we are collectively on the right track, that our strategy is right and we need to accelerate its roll-out.

Panel 1: RePowerEU Hydrogen Accelerator

Joaquim Nunes de Almeida, Director DG GROW, presented the hydrogen accelerator announced by the European Commission in the REPowerEU Action Plan in May. The accelerator includes a series of actions operationalising the EU’s target of 20 million tonnes of clean hydrogen in 2030. The regulatory framework was complemented with the publication of two critical legal pieces for public feedback: the Delegated Acts on the definition and production of renewable hydrogen. To decarbonise hard- to-abate sectors and scale-up hydrogen production, the Commission tapped into numerous tools and initiatives such as the Innovation Fund, IPCEIs, and Carbon Contracts for Difference. To support hydrogen imports, the Commission and Member States have set up an EU Energy Platform for the voluntary common purchase of hydrogen, with a dedicated hydrogen purchasing work stream under the European Global Hydrogen Facility.

Mr Nunes de Almeida then moderated the panel discussion that followed, framing the discussion around four aspects: hydrogen targets as demand triggers; the building blocks before hydrogen production; the enabling framework for hydrogen production; and imports.

Jorgo Chatzimakakis, CEO Hydrogen Europe, highlighted that the replacement of fossil fuels, including from Russia, with hydrogen is possible if we act fast. To do so, Member States need to adapt their Recovery and Resilience Facility proposals; the Commission should take a stronger role in this. Other elements of the regulatory framework should also fall in line to enable the upscale of hydrogen, notably through a Delegated Act on additionality that enables certain flexibility in the beginning. Another element mentioned for the regulatory framework would be a phased-in unbundling of renewable gas infrastructure operators. Companies should not need to choose between transport and production.

Andrea Wiesholzer, Policy Advisor Hydrogen and Climate Policy at Germanwatch, welcomed the commitments to accelerate hydrogen deployment. However, this should not come at the expense of sustainability standards, like renewable electricity or water. The real need is in the expansion of renewables, electrification, and energy savings, giving more time for an orderly upscale of hydrogen. There is a gap in the overall financing of the REPowerEU Plan, which is mostly based on existing funding schemes. Regarding the delegated acts, Andrea Wiesholzer pointed to additionality and temporal correlation as the two main criteria needed: in particular, the temporal aspect has been watered down. On hydrogen imports, she hopes the EU Energy Platform will address sustainability standards in line with the Sustainable Development Goals.

Guillaume Gillet, Director European Affairs at Engie, pointed to the great signals for hydrogen created by REPowerEU. The creation of the market and its competitiveness needed to be pushed by a stable and flexible legal framework, concretely the Delegated acts and the Gas package. Another important element is financially de-risking projects via state aid, the Innovation Fund, and Recovery and Resilience Plans. In his view, the conditions surrounding the production of green hydrogen have to be set up, primarily renewable energy production making a clear link to measures aiming at accelerating their deployment such as permitting.

Luc Haustermans, Head of EU Public Affairs and Industry Relations at Yara International, stated his support of the Commission's ambition to scale up hydrogen in industry, seeing it as an opportunity to decarbonise European production. He pointed out that an all-out transformation of the European fertiliser industry towards renewables in seven years is a massive sprint. Green hydrogen is preferable, but blue hydrogen is a faster route to decarbonise. He questioned how customers can be incentivised to choose renewable fertilisers and chemicals over significantly cheaper imported conventional alternatives. In his view, the hydrogen targets are not enablers by themselves since the regulatory framework is not complete.

Panel 2: Regulatory Framework for Hydrogen

Kitti Nyitrai, Head of Unit Decarbonisation and Sustainability of Energy Sources, DG Energy, explained the background and most important elements of the Renewable Energy Directive Delegated Act (RED DA), where the guiding principle is to support renewables deployment towards 2050 and provide flexibility in the transition period up to 2030. By 2030 around 15% of electricity will be used for hydrogen production, thus fossil-based electricity must be discouraged.

Francois Paquet, Director of Renewable Hydrogen Coalition; **Geert Decock**, Transport & Environment; **Corinna Grajetzky**, Head of EU Public Affairs at RWE, and **Tomas Malango**, Director Hydrogen at Repsol, agreed that the first large hydrogen consumers will be the industrial sector, including in production of transport fuels, and many of these industrial processes cannot be ramped up and down as a function of variable renewable electricity. This is a major issue within the transition period when hydrogen infrastructure and hydrogen storage are not yet available and renewable hydrogen is unlikely to be produced continuously at stable quantities.

The panel's industry representatives explained that the DA allocates non-controllable risk to investors looking to decarbonise their operations, such as the quantity of renewable electricity in the electricity grid. This increased risk will delay investments that would decarbonise industrial activities and create demand for renewable energy, breaking the positive circle of "more renewable hydrogen demand, more renewables". Transport & Environment pointed out that the purpose is not to produce hydrogen at the lowest possible cost, but to ensure that the produced hydrogen is really green. T&E largely supported the DAs in their current form.

Panellists generally agreed on the importance of establishing an **additionality principle** even if this does not exist for other large renewable electricity offtakers.

On the **temporal correlation criteria**, industry representatives and the Renewable Hydrogen Coalition called for more flexibility and a monthly correlation at least until 2030. This view was not shared by Transport & Environment, who defended a stricter temporal correlation.

Industry representatives and the Renewable Hydrogen Coalition strongly criticised the proposed **state aid prohibition** (OPEX), which in their view would mean that in practice the flexibility provided by the Delegated Act would be disappplied to a very large number of projects that would hence become unviable (because most installations generating renewable electricity will continue to be subsidised for many years to come). Transport & Environment defended the proposal.

Transport & Environment strongly criticised the proposed **grandfathering** rule, which on the other hand was welcomed by industry representatives as providing for much-needed planning security.

The **complexity of the regulation** was raised as a concern by panellists. The Renewable Hydrogen Coalition called for a fact-based revision at the end of the transition period to establish if this needed to be extended.

Spotlight on: European Commission – Industry Joint declaration on Electrolysers

Henning Ehrenstein, Deputy Head of Unit Energy Intensive Industries and Raw Materials, presented the Joint Declaration signed by 20 electrolyser manufacturers in Europe and Commissioner Thierry Breton at the occasion of an electrolyser summit on 5 May in Brussels. Industry committed to a tenfold increase of its capacity to manufacture electrolysers by 2025 and the Commission agreed to a raft of supportive actions.

Capella Festa, COO of Genvia, explained that technical innovation is seen as key for EU manufacturers to maintain their lead in global competition. The IPCEI process is key because it gives investors the confidence to invest in a market that does not yet exist.

Benedikt Herges, Head of the European Government Affairs at Siemens Energy, praised both the Alliance and the Commission for the Joint Declaration. It offers a very clear focus to become global technology leaders but also commercial leaders.

Daniel Fraile of Hydrogen Europe presented the mission and mandate of the Electrolyser Partnership. He explained that Alliance members interested in joining can apply until 16 July, with successful applicants notified in August. The first meeting will take place in September.

The Commission launched a call for expression of interest to join the Electrolyser Partnership among Alliance members. Signatories of the Joint Declaration will automatically join.

Spotlight on: Hydrogen in the Buildings Sector

The panel highlighted the potential of hydrogen to decarbonise buildings and replace natural gas. Speakers mentioned that hydrogen-ready appliances and boilers are commercially available. The three projects demonstrated that hydrogen is indeed an energy efficient, valuable, and affordable option in the medium-term.

Hydrogen City, presented by **Richard van As-Jacobsson**, is a citizen-led initiative to deliver methane gas-free heating to a small community on the island Goeree-Overflakkee. Analysis indicated that a significant part of Dutch homes are most cost-effectively heated with hydrogen. In the summer of 2025, 611 houses and 17 utility buildings can switch to 100% hydrogen. Westküste 100, presented by **Dr Kay Bareiß** of Thüga AG, is a project to use hydrogen holistically in mobility, industry, and the heat sector; Scalability – LOI for an upgrade from 30 MW to 700 MW electrolyser are available and conversion from 100 % renewable

energy into hydrogen – a flexible and storable energy carrier. The final project, HyPower Lab in Sardinia (Sestu), Italy, presented by **Ruggero Bimbatti** of Italgas, features the installation of an electrolyser (0.5 MW) and renewable energy generation from onsite PV plant (1 MWp). The main goals are: hydrogen to replace natural gas consumption of Sestu’s domestic users, increasing from 400 to more than 2,500 customers by 2028 with 2-5% hydrogen blend; to support the decarbonisation of industry by using hydrogen for a local cheese factory (10% blend) and to support public mobility with five hydrogen-fuelled buses by 2024, to 10-15 buses by 2028.

Panel 3: Permitting procedures for Hydrogen Projects

Cecilia Serrano-Piedecasas, Policy Officer in the Directorate-General for Industry and the Internal Market, opened the panel by introducing the two co-chairs of the Alliance working group on permitting procedures, **Stefano Erba** of FNM Group and **Hubertus Rosenow** of ThyssenKrupp Nucera.

The co-chairs presented the working group’s report (available [here](#)), including the barriers to regulatory, administrative, and capacity building for hydrogen projects, as well as presenting recommendations of how to address them. One suggestion was that perhaps large-scale and small-scale projects should have different permitting procedures, and that there could be fast-track procedures for projects such as important projects of common European interest (IPCEI), as speed and acceleration are needed to avoid permitting processes dragging on.

The co-chairs also highlighted that clear documentation and clear timelines are essential to the permitting process, both on the part of authorities (who must explain what documents are required and how long each step of the process will take) and project promoters (who must provide the requested documentation while respecting timelines).

Ruud Kempener of the European Commission congratulated the working group on their report and commented that it contains much he agrees with. He reminded the audience that some of the recommendations are already in existing legislation but that has not yet been implemented. He advocated for a “one-stop shop” approach, bringing together several ministries to address permitting applications together. Mr Kempener also mentioned the need for skills initiatives, both among public servants and the public at large, to address the energy transition and aid public awareness and understanding of clean hydrogen projects. In relation to a question about where most of the time is lost in permitting procedures, Mr Kempener said this was frequently in determining which legislation applies to a project.

Thijs von Wonderen of the Province of Groningen recommended that the one-stop shop that Groningen has in place be implemented at national level. He outlined some of the difficulties in

current permitting processes, where timelines are often not respected due to legal challenges that pull staff from assessing projects to dealing with the legal case.

Panel 4: Turning the Hydrogen Alliance Project Pipeline into Reality

Deputy Director-General of the Internal Market **Maive Rute** moderated the final panel of the Hydrogen Forum. Ms Rute opened the panel by recalling the 750-plus projects that were unveiled at the previous Hydrogen Forum, projects which covered all parts of the value chain and came from all corners of Europe. She recalled that funding instruments are available at EU level, Member State-level, and from actors such as the European Investment Bank to turn the Alliance's project pipeline into reality. She launched a second collection of projects for the investment pipeline of the European Clean Hydrogen Alliance.

Stefaan Vergote, DG Climate Action, European Commission, spoke about updates to the EU's Innovation Fund that will make more funding available for clean hydrogen projects. Thanks to increased ETS revenues that fund the Innovation Fund, 30 billion euros over 10 years is now available to support innovative clean technologies, including the manufacturing of electrolyzers. The Innovation Fund can cover both CAPEX and OPEX costs of a project for up to 10 years. Both blue and renewable hydrogen projects are eligible.

Rodrigo Peduzzi, DG Competition, European Commission, spoke about state aid tools available for clean hydrogen projects, and reminded participants that state aid under important projects of common European interest (IPCEI) is not the only tool available to finance hydrogen projects. IPCEI projects are assessed by DG COMP for positive spill-over effects. He emphasised that other state aid guidelines such as the climate, environment, and energy guidelines (CEEAG) and the General Block Exemption Regulation (GBER), can be used to fund clean hydrogen projects. In particular, projects assessed under GBER do not have to be notified to DG Competition, usually facilitating their assessment.

Juan Magana, European Investment Bank, provided an update on the call in March for Alliance pipeline projects interested in the EIB's advisory and financing services. From this call, the EIB selected 30-35 projects to which it will provide advice and potentially financing. These projects represent a significant share of the EIB's hydrogen portfolio that features 40-45 hydrogen projects in total. When queried about what factors influence the EIB's decision to finance a hydrogen project, Mr Magana said that simplicity is best, as large integrated projects are harder to evaluate and de-risk.

Diego Pavia, CEO, EIT InnoEnergy, outlined what types of clean hydrogen projects that EIT InnoEnergy is interested in: 40MW electrolyser minimum. He provided an updated on the EIT-Alliance partnership and call for proposals (which closed in May). Of the 35 projects received during this call, 10 were excluded for not meeting the criteria, while another 25 projects will be

advised and potentially financed. He mentioned that successfully-financed projects such as H2Steel in Sweden are examples where customers are prepared to pay a premium for a green products. In the case of H2Steel, the additional cost to produce this green steel only add 1% to the total cost of a premium car.

Jyri Ylkanen, European Commission, provided an overview of the newly-created tHrive initiative. The purpose of this initiative, working with Estonia and the regions of Asturias and Auvergne-Rhone-Alpes, is to help regions by providing advice on financing, strategy, synergies with other regions, connecting with potential partners. He provided an update on each region.

Forum Closing

The Forum was closed by Director-General for Industry and Internal Market **Ms Kerstin Jorna**, who lauded the members of the Alliance for their excellent work to build a hydrogen ecosystem and cement Europe's leadership in clean hydrogen production, technology, and deployment.