

Hydrogen Energy Network Meeting



Fourth Meeting of the Hydrogen Energy Network – 24 November 2020

Minutes of the meeting

Introduction and Keynote address

Ditte Juul Jørgensen (Director-General, DG ENER) welcomed the numerous participants of the fourth HyENET meeting, and talked about the growing importance of Hydrogen in Europe but also worldwide recalling the history and objectives of the platform. The meeting took place during the “Hydrogen week” organised by the FCH JU with DG GROW, in connection with the first annual meeting of the EU Clean Hydrogen Alliance. She recalled how the EU Hydrogen Strategy issued in July supports European Green Deal’s objectives and the common goal of reaching climate neutrality. The objective is to reach at least 6 GW and 40 GW of renewable hydrogen electrolyzers in the EU by 2024 and 2030 respectively. She underlined the different pillars of the strategy (enabling regulatory framework, lead markets, investment agenda, R&I activities and international cooperation) and concluded with a message on strengthening cooperation efforts amongst all stakeholders to support the hydrogen uptake.

Tudor Constantinescu (Principal Adviser to the DG) introduced the Agenda and moderated the meeting.

Session 1: European Commission initiatives on hydrogen

Paula Abreu Marque (Head of Unit ENER.C1) recalled the recent work on the EU Hydrogen and System Integration strategies, mentioning the focus on renewable energy and hard-to abate sectors. Cooperation is even more important in view of the new 2030 green targets. The Commission’s future work on implementation actions (approx. 60 proposals) following the strategies was presented, underlining the key initiatives. Those includes the EU Investment Agenda, InvestEU, cohesion funds, the revision of EU State Aids rules, the revision of RED and ETS directives, the gas package, etc.

Mark Nicklas (Head of Unit DG GROW.F1) informed about the recent developments concerning the EU Clean Hydrogen Alliance. More than 800 applications have been received from stakeholders. The recent call for applications to the six Roundtables was closed on 13 November. The roundtables are expected to

define hydrogen pipeline investment projects and will start working early next year. On the governance, the roundtables will be chaired by industry with the Commission's support.

Vanessa Bruynooghe (policy officer, Unit COMP.H2) provided an overview of the ongoing revision of the IPCEI rules (currently prolonged until 2021) and the follow up on the fitness check on EU State Aids rules. The revision process also includes ongoing work on the IPCEI communication, which also contains information on the compatibility with State Aids rules. A roadmap has been prepared and a public consultation is open until 21 December 2020. The Communication on IPCEI will be published together with the revised Energy and Environmental Aid Guidelines in the course of 2021. The State Aids rules on R&D will be also reviewed and a roadmap is already available. The overall aim of revisions has the objective to clarify and improve existing rules.

Martyn Chamberlain (policy officer, Unit DG RTD.D1) provided an update on the EU Clean Hydrogen Partnership with the aim to reduce costs and make hydrogen more competitive thanks to technological improvements. The Single Basic Act (SBA) for all Partnerships is being finalised. The SBA will also establish a common business office. There are a number of partnerships in which hydrogen is discussed, coordination is needed. For this reason, DG R&I will set up the platform on the "hydrogen Inter-Partnership Assembly" to link different partnerships working on hydrogen. The Commission will chair the Inter-Partnership Assembly and facilitate discussions and promote synergies on the different partnerships' work programmes. It will comprise two members of the private sector, two members of the institutionalised partnership and two colleagues from the European Commission.

Vincent Berrutto (Head of Unit, ENER.C2) explained that in the context of the EU Green Deal Call, the European Commission recently launched the 100 MW electrolyser call. Its objective is to have more powerful and efficient electrolysers, with projects that will be tested under real life conditions and provide grid balancing and produce green energy for an industrial site. The developers will also assess the economic, social and environmental aspects as well as include actions to support knowledge sharing. The projects duration will be 5 years, incl. 2 years of operations. The budget is EUR 60 million, for two projects, with a 50% funding rate, apart from 100% funding for non-profit organisations. The call will close on 26 January 2021.

Robert Missen (Head of Unit MOVE.B3) explained that DG MOVE is currently working on different mainstreams concerning hydrogen. On the legislative side, the revision of Alternative Fuels Infrastructure Directive is ongoing with the objective to increase the role of fuel infrastructure with full interoperability and to enable the deployment of smart charging infrastructures. The package should be adopted before summer. On the aviation sector, a refuel EU aviation report is ongoing, results will be instrumental for revisiting the legislative framework but also to support further research on alternative fuels. The Strategy on sustainable and smart mobility is expected at the end of 2021, and it will consider measures to facilitate the use of hydrogen and its derivatives in the transport sector. On the research side, the FCH JU work is ongoing to support R&I and demonstration projects.

Jorgo Chalzimarkakis (Secretary General, Hydrogen Europe) recalled the EU objectives to produce 40 GW of renewable hydrogen in Europe by 2030 as well as the target of 40 GW in neighbouring countries. EUR 430 billion will be needed to kick start the hydrogen economy, with two thirds of these funds from private investments. In this context, the revision of EU State Aids rules, IPCEI projects, the EU Hydrogen Alliance will be key to promote the hydrogen economy. Amongst the challenges, there is the interpretation of 2014 Communication on eligible costs (Art 23). Hydrogen needs strong economic incentives and current State aid regime may not be fit-for-purpose.

Ralf Wezel (Secretary General, EUTurbines) explained the role of hydrogen in power generation with turbines. Hydrogen turbine will not be available in the immediate future; however, gas turbine optimized can be retrofitted to be fully climate-neutral with renewable gases, as they do not need natural gas. In the long term, hydrogen turbines would be the best solutions to fill a number of gaps. However, future-proof investment decisions need to be taken by plant operators and technologies needs to be developed, tested and demonstrated now. Finally, the hydrogen infrastructure (grids and storage) needs to include requirements from the power sector already now.

Boyana Achovski (Secretary General, Gas infrastructure Europe) explained the important role gas infrastructure for hydrogen development. In particular, four elements need to be taken into account: volumes, security of supply, innovation and lowest cost for the society. In particular, the volumes of the gas infrastructure will be important to be able to transport large amount of hydrogen to meet supply and demand. The cost of renewable hydrogen is decreasing over time but it is still above the other fuels. In this context, possibilities to finance large projects making use of the gas infrastructure can play a key role.

Kristian Ruby (Secretary General, Eurelectric) underlined the importance of system Integration that accelerate positive synergies, especially between electricity and gas grids. It is important to continue efforts to develop appropriate regulatory framework for an integrated energy system. Secondly, we need to enhance flexibility across all sectors to smartly manage the energy system. Thirdly, we need to ensure that all energy sources can compete on an equal footing. Finally, we need to remove regulatory barriers related to the operations for the gas system.

Jacob Hansen (Director General, Fertilisers Europe) underlined the role of carbon free green ammonia. Challenges include building electricity infrastructure and having a sustainable business case as well as to create a market for low carbon hydrogen and clean ammonia. This is a step-by-step approach, we need to increase green ammonia production and then expand this process.

Session 3: Member States' plans and programmes on hydrogen

Mr Pilar Sánchez (Ministry for Ecological Transition, Spain) explained that in November 2020 the Spanish government announced EUR 1,5 billion to boost green hydrogen development up to 2023. The objective is to identify and locate renewable hydrogen projects in Spain, their impacts on the entire value chain and industrial development as well as the impact on employment, and to learn about their transformative effect on the economy and on the social and territorial cohesion. A number of projects concerning hydrogen have been already approved, such as: the Puertollano H2R for the fertiliser industry, the project in Mallorca with the objective to have 7.5 MW electrolysis thanks to 16 MW of photovoltaic energy;

production of hydrogen for synthetic fuel in Bilbao; the Cartagena project concerning a refinery; the construction of hydrogen refuelling station in Barcelona for public transport; the project concerning the Valencia port (H2Ports) with the support of FCH JU funds.

Tudor Florea (Ministry of Ecology Transition, France) indicated that France published its national hydrogen strategy in September 2020. However already in June 2018, a strategy on mobility and energy and climate law was published that supported hydrogen as priority in the transport sector. The new strategy envisages EUR 7 billion to be allocated by 2030 to hydrogen projects considering different priorities. The objective is to reach industry decarbonisation and electrolysers market scale up of approximately 6,5 GW by 2030. In addition, the national multiannual research programme includes call for projects on storage as well as fiscal measures for the use of hydrogen for refinery process and support for low carbon hydrogen. Work is also ongoing on the hydrogen definition as well as on ensuring the right taxation and state aid revision and other possible changes to the regulatory framework.

Mr Cyriac Massué on behalf of Mr Ulrich Benterbusch (Federal Ministry for Economic Affairs and Energy, Germany) indicated that climate targets require climate friendly alternatives as green electrons and energy efficiency will not be enough. Germany has focused on the production of green hydrogen, but demand may exceed production. It is key to have a EU market, so it is important to have a European methodology to count for the CO2 footprint. Germany currently has a yearly production of around 55 TW hours mainly from “grey” hydrogen. The target for 2030 is to kick off 90 to 200 of Terawatt hours that cannot be matched by own production then it will depend on imports, so it is important to launch the EU market and infrastructure to import and transport the renewable hydrogen produced in other countries.

Paulo Partidário (Directorate General of Energy and Geology, Portugal) described the national hydrogen strategy published in August 2020. Portugal recognises the strategic importance of hydrogen value chain and it is committed to the EU-IPCEI hydrogen project proposals. The strategy sets targets to be achieved from 2025 to 2050 in different fields and sectors. The objective is to reach approximately 2 GW and 5 GW of electrolyser capacity in 2030 and 2050 respectively. The strategy includes an enabling framework to support production, transport, distribution and storage of clean hydrogen. Among others, regulatory conditions are being put in place, including renewable gases, for pilot projects in the short term. Other actions includes: certification and verification schemes, call for project proposals, the design of actions and promotion of R&I activities. Finally, a task force is being launched to assist and monitor the overall process.

Tour de table from Member States & update FCH JU

During the tour de table, a number of **Member States** indicated that they prepared or are preparing roadmaps on hydrogen (PT, DE, ES, FR, PL, IT, FI, NL, etc.). Many Member States have also launched national calls to identify IPCEI projects on hydrogen. Finally, experts discussed aspects relevant to the national activities related to hydrogen.

Bart Biebuyck (Executive Director, FCH JU) provided an update on new projects received by the Joint Undertaking following the call for proposals in 2020. In particular, 23 proposals were awarded with approximately EUR 92 million, with some projects already announced in the press (e.g. Hyship, FCH2RAIL,

and Green Hysland). Work is also ongoing on heavy-duty components & infrastructure. Attention was also draw on the FCH Observatory, a one-shop stop to understand the FCH sector and how it is evolving. Furthermore, in September the study focussing on hydrogen national strategies has been published on the website after consultation with the Member States. The FCH JU is also supporting hydrogen projects in different European regions, incl. the creation of hydrogen valleys at regional level. Finally, the FCH JU has been entrusted to create the hydrogen Valley Platform under the Mission Innovation.

Conclusions and next steps

Mr Constantinescu (Principal Adviser to the DG) thanked all participants for their active contribution and highlighted the main messages from the three panels. The European Commission is forefront in supporting the uptake of hydrogen in Europe with many initiatives concerning all value chain; different regulatory initiatives will take place already in 2021. At industrial level, there are high business expectations on the uptake of hydrogen in the immediate but also in the long term, policy makers need to support industrial players. Finally, in line with the EU hydrogen strategy, different Member States already set (and others will in coming months) ambitious national strategies to develop the hydrogen value chain while they also recognise the need to cooperate at international level.

The next meeting will be planned in the first half of the next year, probably in May, and if possible will be convened again in person.