DG GROW
European Clean Hydrogen Alliance
Meeting of the Roundtable on Industrial Applications of Hydrogen
10 June 2021, 13:00 (online)

BRIEFING NOTE *(Opening remarks and Q&A)*

Scene setter/Context of the meeting:

This is the second meeting of the European Clean Hydrogen Alliance industrial application round table. The objective of the meeting is to exchange on the current work of the Alliance (building of a pipeline of projects for hydrogen deployment), to improve understanding on how financial institutions are looking at funding of hydrogen projects and to prepare a roundtable paper on enabling conditions for hydrogen deployment.

The meeting will be attended by [redacted] representatives of the companies, public authorities and NGOs that are members of the industrial applications round table (list of invitees attached). You delivered a video message to the first meeting of the round table on 9 March, highlighting the importance of hydrogen deployment and industrial applications of hydrogen.

Following a brief welcome by the co-chairs you will be invited to say a few introductory words, followed by a Q&A session (several questions have been submitted to us in advance and suggested answers are included in this briefing). After you leave the meeting, the focus will shift to how potential lenders analyse hydrogen projects for their potential financing. Maive Rute will attend the full roundtable meeting and will be available to take any points addressed to the Commission.

Main messages:

- Underline the Commission political support for the deployment of hydrogen in Europe as a means to advance the green transition towards climate neutrality;
- Highlight that Europe must now move from research to market deployment to maintain its lead in a strategic industrial technology.

<u>Opening remarks</u>:

- Thank you very much for having invited me to the second meeting of the Roundtable on clean hydrogen in industrial applications. I am glad to have the opportunity to be here with you today.
- It is important for me to engage with you now. We are getting to crunch time for hydrogen.
- 18 months ago, few people would have thought that hydrogen would gain so much momentum in the technology mix needed on our way to climate neutrality.
- With the adoption of the Hydrogen Strategy, the launch of the Clean Hydrogen Alliance and the preparation of hydrogen Important Projects of Common European Interests, we now have an unprecedented opportunity for the large-scale deployment of hydrogen in Europe.

[Promising projects for hydrogen]

- The latest example is the significant success of the call for projects that my services launched last month as part of the work of the Hydrogen Alliance. More than 1000 projects have been collected.
- We will provide a complete summary of the projects collected at the Hydrogen Forum next week, but I want to share already some interesting findings.
- First, the overwhelming majority of projects planned to produce hydrogen is focussing on renewable hydrogen.
- Second, we have collected over 200 projects aiming to apply hydrogen in industrial processes. Projects focussing on hydrogen for e-fuels production, for industrial heat, as feedstock for the

chemical industry, refining and ammonia, as well as for steel manufacturing and multi-industrial hubs.

- Third, we see the emergence of strong geographical clusters, including in commercial port areas and existing industrial centres. This has important repercussions for the planning of hydrogen infrastructures.

- Fourth, for a large number of projects collected, deployment is expected to start in the next 3 to 4 years.

- I would like to pick up briefly on this last point, a very encouraging one.

[Using our technological advance for commercial scale-up]

- Together we have spent the last 15 to 20 years investing in research and development. You have developed a European leadership in many hydrogen technologies. We now must use our leadership to deploy hydrogen on a commercial scale.

- And here I want to be clear: Europe has a history of technology inventions which our partners in America and China have exploited commercially to their advantage. We must avoid history repeating itself in the case of hydrogen.

- Hydrogen is not only key to decarbonising energy-intensive and hard-to-abate industrial sectors. It is also strategic for Europe's industrial leadership in the world.

- If we do not move from research, development and small pilot projects to larger-scale commercial applications now, we will lose our technological leadership.

[EU supporting framework for hydrogen deployment]

- In this endeavour, the European Clean Hydrogen Alliance will play a pivotal role.

- The project pipeline that the Alliance is building up is designed to give visibility to your clean hydrogen projects and facilitate investments. I am glad to see that the financing of projects is one of the main items on your agenda today.

- We are also working with Member States to build a series of hydrogen Important Projects of Common European Interest – the so-called IPCEIs. Member States have pre-selected several hundred projects for state aid under an IPCEI framework, many of which will be part-funded under the EU Recovery and Resilience Facility.

- We are working closely with Member States to create what I believe will be a series of consecutive hydrogen IPCEIs. The objective is clear: offer support to concrete pioneers of large-scale deployment of clean hydrogen in Europe.

- To underpin this deployment, we will create a regulatory framework for the production, transmission and application of clean hydrogen. The forthcoming Fit for 55% package in July and the gas package in the autumn will be important milestones.

[Conclusion]

- Ladies and gentlemen, to conclude before our exchange of views, I would like to emphasise once again that this is the time to be an industrial pioneer, a front-runner shaping the future market.

- This is the time to make concrete investment decisions and build these electrolysers, transmission systems and industrial installations running on hydrogen.

- I want to thank you for your personal involvement in the Alliance. You can rest assure that you will you will have my continuous and full political support.
- Thank you for your attention.

Answers to Questions expected to be raised:

The European Commission will soon present the Fit for 55 Package. How is the Commission planning to provide effective protection against the risk of carbon-leakage so that the EU Industry remains competitive at world and is able to make massive investments into breakthrough GHG abatement technologies?

- The Commission's Fit for 55% Package will seek to ensure an effective level of protection against carbon leakage. We want a system that will not undermine the current level of protection while, at the same, time allowing Europe to achieve the climate objectives we agreed upon.
- We will pay close attention to the feasibility of the measure as well as its economic (which includes), social and environmental impacts, including administrative and compliance costs. We will introduce new measures only where this makes sense.
- This will be essential if EU industry is to invest in the green and digital transition here in Europe rather than elsewhere.
- To support the necessary investments, the €675.5 Recovery and Resilience Facility reserves 37% of the fund for spending on climate-friendly measures.

The success of the EU Hydrogen Strategy will depend on the availability of abundant and competitively priced renewable electricity. However, very often permitting by Member States of new renewable generation projects is slowed down. How is the Commission planning to overcome this bottleneck?

- The Fit for 55% package will provide all the measures necessary to achieve the higher greenhouse gas emissions and energy targets set out in the EU Climate Law.

- As we wrote in the updated industrial strategy last month, it is vital that industry gets access to affordable decarbonized power and low-carbon feedstock.
- Like you, I am concerned that the main bottleneck to the ramp up of renewable energies, energy storage and infrastructure is permitting.
- In the context of the resilience and recovery plans, we are insisting that Member States take all necessary steps to streamline their permitting without sacrificing environmental protection.

How is the Commission planning to support the uptake of corporate renewable Power Purchase Agreements (PPA) and facilitate a European scheme for CCfD (Carbon Contract for Difference)?

- The Fit for 55% proposal on renewable energy and the revision of the energy and environment state aid guidelines will be the places where we facilitate Power Purchase Agreements, as we announced in the updated industrial strategy.
- The state aid guidelines will address Carbon Contracts for Difference funded from national state aid, while the Fit for 55% proposal on ETS will propose a European framework through the Innovation Fund.

How is the Commission planning to put forward sectoral pathways for the Energy Intensive Industrial Ecosystem and also to co-ordinate EU national funding programs?

- As announced in the updated industrial strategy, we are planning to develop with industry and other stakeholders transition pathways for the industrial ecosystems, starting with tourism and the energy-intensive industry ecosystem (i.e. energy intensive industries, raw materials and forest-based industries).

- The new industrial forum will provide overall coordination, but we will use the High Level Group on energy-intensive industries – which already produced the excellent master plan for climate-neutrality and circularity – to prepare the pathway for this ecosystem. Where individual sectors have climate mitigation roadmaps these will be taken into account.
- The transition pathways are not only about climate. They are also about digitalisation, resilience and skills amongst other things.

Can you elaborate if the Commission is working on (global) harmonization of methodologies to calculate e.g. Life Cycle Agreement, Greenhouse Gas emissions, embodied emissions?

- The lifecycle approach and ability to measure embedded emissions throughout the value chain are very important.
- In Europe we have developed and road tested in collaboration with hundreds of companies all over the world what is currently considered the best practice in the area of Life Cycle Assessment.
- The use of this method, called Product Environmental Footprint (PEF), has been already introduced in some relevant legislations like the new battery regulation and the taxonomy delegated acts. We are now considering using it also in the upcoming Sustainable Product Initiative and the Green Claim Regulation.
- The PEF method is built on international standards and on consensus based scientific approaches. The Commission is also collaborating with important international partners like UN Environment and the World Business Council on Sustainable Development to promote the use of PEF and similar life cycle based approaches at international level.

If the Commissioner prefers to give an answer focused on the Carbon Border Adjustment Mechanism:

- We must ensure that CBAM looks at the carbon content of imported products in a way that is consistent with the ETS rules. The life cycle approach (LCA) will be used in other pieces of legislation, but for CBAM we will stick to direct emissions only for the time being. Maybe in future we could reconsider the methodological approach, also taking into account international agreements and developments.

Additional defensive points:

How does the European Clean Hydrogen Alliance work?

- The Clean Hydrogen Alliance was established in July 2020. The objective is to promote the deployment of renewable and low carbon hydrogen at a large scale and across hard-to-decarbonise sectors, thus shifting away from fossil fuels and contributing to EU energy and climate goals.
- The basic principles of the working methods of the Alliance have been established with the European Clean Hydrogen Alliance Declaration, with a firm commitment to openness, transparency, diversity and inclusiveness, while ensuring compatibility of its initiatives with the climate neutrality objective.
- The Alliance features six roundtables: hydrogen production, transmission and distribution, industrial applications, mobility applications, energy applications and buildings application. The roundtables follow the logic of the hydrogen ecosystem and mobilise all relevant actors in line with the ambitious goals of the EU Hydrogen Strategy.
- The Commission has collected information on 1052 hydrogen projects planned by its members. The Commission services are currently screening these projects with a view to launching a match-making process during the June Hydrogen Forum. The objective of the match-making process is to create larger and more integrated projects along the EU value chain. A pipeline of investment projects is to be presented before the end of the year, but does not prejudge any decisions on EU or Member States' financial support.

What about Hydrogen IPCEI?

- The large-scale deployment of hydrogen in many sectors will during the early stages be contingent upon initial public financial support. One mechanism under which state aid awarded to projects by Member States can be approved by the Commission are Important Projects of Common European Interest (IPCEI).
- The Commission and Member States are currently working together to create a series of hydrogen IPCEIs to support the large-scale deployment of renewable and low-carbon hydrogen in the EU. Several Member States are planning to offer state aid financed under the EU Recovery and Resilience Facility.
- IPCEI projects have typically significant financing from many sources, including from the beneficiaries themselves. The state aid typically only covers a fraction that is necessary due to market failure or a policy driven research and innovation need.
- I am confident that this time next year we will already have at least two hydrogen IPCEIs in place, with more to follow.

What are the infrastructure needs for hydrogen? And when will they be needed?

- For hydrogen to play an essential role to support the EU's commitment to reach carbon neutrality by 2050, one condition is the availability of energy infrastructures for connecting demand and supply.
- Infrastructure needs further development to distribute, store and dispense hydrogen at large volumes and possibly over long distance. Hydrogen in Europe is likely to develop through a gradual trajectory, at different speed across sectors and regions depending from local conditions.

- Between 2020 and 2024, infrastructure needs for transporting hydrogen will remain limited as demand will be met initially by production close or on site, but planning of medium and backbone transmission infrastructure should begin.

- Between 2025 and 2030, hydrogen needs to become an intrinsic part of an integrated energy system with a strategic objective to install at least 40 GW of renewable hydrogen electrolysers by 2030 and the production of 10 million tonnes of renewable hydrogen in the EU

- After 2030 towards 2050, renewable hydrogen technologies should reach maturity and be deployed at large scale to reach the hard-to abate industrial sectors.

What do you mean by clean hydrogen? Is it the same as green hydrogen?

- The long-term objective of the Alliance is 100% renewable/green hydrogen, but in the first phase of the transition to climate neutrality the overall supply of green hydrogen will not be sufficient.

- The demand will possibly grow faster than the renewables capacities can be built, mainly driven by industrial hydrogen demand.

- To ensure maximum speed of decarbonisation of the infrastructure and end-use applications, the EU Hydrogen Strategy sees a role for other forms of low-carbon hydrogen to cover this demand-supply gap in the transition period. Such low-carbon hydrogen will then contribute to the decarbonisation of economy and development of renewable/green hydrogen applications. This will ensure markets for renewable hydrogen when the supply catches up.

- The requirements for non-renewable hydrogen will be ambitious, to ensure that also hydrogen produced without

direct link to renewables will contribute to decarbonisation. For example, the use of grid or non-renewable electricity will have to be proven of low carbon content for the project pipeline of the Alliance. Similarly, any hydrogen from fossil sources will have to comply with emission limits that are very ambitious, requiring a very high degree of Carbon Capture and Storage.

Stakeholders invited to Industrial Applications Roundtable (in green: co-chairs)

Organisation	Name	Title
Industry		
Baker Hughes		
Nouryon Industrial Chemicals (Nobian)		
PKN Orlen		
AMF Bakery Systems		
CLIC Innovation Ltd		
DiviGas		
DOW		
Elemental Holding SA		
Fertiberia S.A.		
Georgsmarienhütte Holding GmbH		
Neste Oyj		
Ovako		
Paul Wurth S.A.		
Primetals Technologies Austria GmbH		
Q Power Oy		
Siemens Energy AG		
SSAB		
St1 Nordic Oy		
Sunfire GmbH		
Tata Steel		
Thyssenkrupp Steel Europe AG (tkSE)		
TOTAL		
UPM (UPM-Kymmene Oyj)		
Wacker Chemie AG		
Yara		
Ardagh Group		
IFIEC Europe – International Federation of Industrial Energy Consumers		
The European Steel Association EUROFER		

Public authorities		
Ministry of ecological transition, France		
Ministry of Industrial, Business and Financial Affairs, Denmark		
Normandy Region		
Regional ministry of industry, employment and economic development, Government of Asturias		
Province of Groningen (Northern Netherlands)		
Regional Council Grand Est, France		
Region of Lower Saxony, Germany		
Other		
CAN Europe		
European Environmental Bureau		
WWF European Policy Office		
Agora Energiewende		
European Bank for Reconstruction and Development		
ING Bank		
France Hydrogène (formerly AFHYPAC - French Association for Hydrogen and Fuel Cells)		
Brightlands Chemelot Campus		
Fraunhofer Gesellschaft		
Sandbag Climate Campaign ASBL		