



Date : 05/10/2022

Decarbonized hydrogen as a driver for European strategic independence and cohesion

On top of climate change and its highly destructive effects, we can now add a major energy crisis caused by the return of war to the European continent caused by the Russian invasion of Ukraine.

These factors make it crucial for France and the rest of Europe to accelerate the move away from our reliance on fossil fuels.

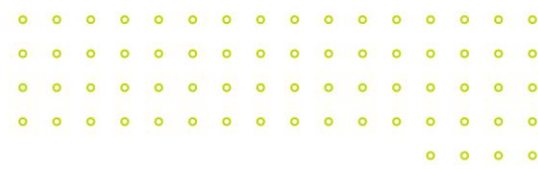
The scale and the speed at which this challenge must be met – in a time-frame of less than thirty years – demands a collective European response. **It is critical to stop seeing different national energy strategies as somehow in competition. Instead, we must start viewing these varied strategies as complementing each other in the drive to achieve net zero by 2050.**

The development of renewable or low-carbon hydrogen is to power the wholesale decarbonization of a wide range of economic sectors including heavy industry and mass/heavy transportation – not to mention the reindustrialization of swathes of France and indeed Europe as a whole. Produced in response to Russia's attack on Ukraine, the European Commission's *RePowerEU* plan confirms hydrogen's strategic role in boosting the European Union's energy security and industrial self-sufficiency. It does so by raising the renewable hydrogen production target by 100% between now and 2030, from 10 to 20 megatonnes (Mt), half of which will be produced within the European Union and the other half imported from outside the EU. This vision takes on concrete form in the revised Renewable Energy Directive (RED III) in the shape of targets for the percentage of renewable hydrogen to be used in industry and transportation by 2030 - respectively 50% and 5.7% as laid down in the report adopted by the European Parliament and currently being discussed in interinstitutional trilogue meetings. Parallel to the EU's strategy, France has its own, ambitious National Strategy for the development of renewable and low-carbon hydrogen. Backed by 9 billion euros from the French state¹, one of the Strategy's main aims is to create a competitive hydrogen production sector based around the process of electrolysis. This would enable France to produce clean hydrogen on a large enough scale to decarbonize both the industrial sector and heavy/mass transportation. With this in mind, the French state is investing in the construction of factories which will manufacture equipment capable of large-scale electrolysis, both to drive down the cost of such equipment and to make the European Union self-sufficient in the electrolyzer manufacturing field.

The other key challenge associated with the production of clean hydrogen through electrolysis in the European Union is that of securing adequate low-carbon power supplies. Achieving the European Commission's goal of producing 10Mt of renewable hydrogen in the European Union by 2030 as set out in its *RePowerEU* plan would require the production of an additional 550 TWh of electricity from renewable sources – a considerable amount. Given this, **it is surely vital to recognize the role of low-carbon hydrogen, especially that produced using nuclear power, alongside renewable hydrogen, if we are to achieve our decarbonization targets.** The scale of the challenge is too big and the European Union's energy systems are too diverse for it to be practical to promote just one, 100% renewable primary energy source. Renewable energy sources will be the mainstay of European decarbonization. However, to bar low-carbon hydrogen from inclusion in the targets set for hydrogen use runs the risk that EU-based clean hydrogen production capacities will be insufficient and very significant imports of hydrogen will have to take up the slack.

In today's extremely instable geo-political environment, it is critical to ensure that some hydrogen production facilities are located in Europe to avoid a new kind of energy dependence. It is also important to provide adequate supplies of hydrogen to the European industrial sector. It's perfectly reasonable that parts of the world with plentiful sources of renewable energy (particularly northern and sub-Saharan Africa) use these resources in the first instance to develop and decarbonize their own energy systems, move towards the goal of universal access to electricity and to develop their own industrial base. **Taking this into account, we feel the balanced**

¹ The National Hydrogen Strategy received 7.2 billion euros in funding, along with an additional 1.9 billion euros as part of the France 2030 investment plan.



approach adopted by the European Commission (10Mt domestic production, 10Mt imported) is appropriate. For this vision of domestic production to become reality, the Commission needs to open the door, in one way or another, to low-carbon hydrogen, as explicitly stated in RePowerEU. The production of hydrogen using France's energy mix of nuclear (69% in 2021) and renewables (23.6%) is an opportunity to consolidate Europe's energy independence right now, avoiding falling back into old patterns of dependency on other countries. **Hydrogen must act as a driver for the European Union's strategic independence.**

Although France aims to meet its domestic requirements in low-carbon hydrogen by means of domestic production, this does not imply that France intends to stop supplying hydrogen needed by other countries. Contrary to what has sometimes been claimed, French strategy is not inward-looking and is in no way devised in opposition to the strategies and specific needs of other Member States. **Autonomy is not the same as autarky.**

Proof of this lies in France's commitment to the MosaHYc cross-border initiative, which will connect locations where hydrogen is consumed in Germany (Saarland) with locations in France (Moselle) by converting existing natural gas pipelines. Likewise, the French hydrogen sector would be open both to exploring the viability of creating a network of hydrogen pipelines connecting the Iberian Peninsula (rich in renewable energy resources) and northern Europe, particularly Germany – and in considering more concrete involvement in such a project. **This obviously requires the development of a long-term strategy**, which we are very much aiming for, with guarantees on future supply from producers (Iberian or North African) and future consumption from large industrial end users (mostly German). **Connecting the Iberian Peninsula to northern Europe in this way will help drive European cooperation in pursuit of our collective decarbonization goals. We would support such an initiative as long as it were used to transport hydrogen, not hydrocarbons, and as long as French projects were able to participate fully in the use of this infrastructure.** Although we must start planning the construction of this kind of pipeline transport infrastructure immediately, it's vital to remember that such infrastructure, which would be a constituent element of a European Hydrogen Backbone, is very expensive and would not be fully operational until the 2030s. Even as we plan the development of strategic distribution networks to connect European countries up with each other, the efficient planning of decarbonized hydrogen production and consumption at a local level remains the principal template for achieving our climate targets by 2030. In fact, it's this template which will act as the basis for a Europe-wide hydrogen distribution network with the construction of infrastructure for the transportation of hydrogen within local hydrogen ecosystems followed by the linking up of industrial centres to this network.

Just like all other solutions aiming to reduce our dependence on fossil energy sources, the use of hydrogen for this purpose represents a huge challenge but one which absolutely must be met. In light of this, it does not make sense to pit hydrogen strategies across different EU member states against each other, based as they are upon a variety of energy systems. We must use all the levers at our disposal. The French hydrogen sector is calling for EU legislation to enshrine the recognition that low-carbon hydrogen – particularly that produced from nuclear power – has, together with renewable hydrogen, a crucial role in decarbonizing Europe's economy. It is also calling for the establishment of detailed plans for the creation of hydrogen interconnections between southern and northern Europe as quickly as possible. (This should not be taken as advocating for investment in new natural gas facilities and infrastructure).

These two changes would enable hydrogen to really become the driver of the European strategic independence and cohesion which we are aiming to achieve.

