

The EU Hydrogen Strategy EREF Position Paper

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Introduction to the Hydrogen Strategy

Over the past two decades, the discussion surrounding the use of hydrogen has developed and grown, however, it is only in more recent years that hydrogen has seen a rapid increase in attention because of its potential role in storage, as a GHG-free feedstock, a fuel or an energy carrier. While there are some promising uses for hydrogen, if it is strictly produced from renewable sources, it is certainly not the silver bullet solution to the climate crisis.

The European Commission's Hydrogen Strategy sets the goal of scaling up hydrogen production and making renewable sourced hydrogen financially viable within the next thirty years. The Strategy outlines milestones with different targets and policy objectives. The first phase, until 2024, sets the target of 6 GW of installed electrolyzers in the EU, producing up to 1 million tonnes of renewable hydrogen. This phase will see a regulatory framework being set out for a well-functioning hydrogen market. The second phase, between 2025 -2030, sets the target of at least 40 GW of renewable hydrogen electrolyzers and production of up to 10 million tonnes of renewable hydrogen throughout the EU. The phase 2 target is a considerable scale up from phase 1 and there is a real danger that this target is too ambitious and unattainable. Finally phase three, until 2050, focuses on making hydrogen from renewable sources fully competitive on the energy market, decarbonising all hard-to-abate sectors.

While this strategy plans for the wide implementation of green hydrogen by 2050, in order to reach that target, other types of hydrogen such as pink, grey and blue hydrogen will be developed and used over the coming decades. Pink hydrogen is produced using nuclear electricity, whereas grey and blue hydrogen is produced using fossil fuels and still emits considerable GHGs. The following paragraphs set out EREF's positions, remarks and criticism of the Hydrogen Strategy.

Green hydrogen

Green, renewable sourced hydrogen production has the possibility of complementing renewable deployment in the energy transition. Because of its versatility, it can be used in a variety of sectors that may be typically unsuitable for direct electrification. It is in these "hard-to-abate" sectors where green hydrogen is most useful in achieving the decarbonisation goals. Green hydrogen can also play a limited role in providing storage solutions to balance variable renewable energy flows. In addition to existing storage solutions, grid flexibility as

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well as demand response, this in turn should help phase out and eventually remove fossil based backup capacities, while also providing millions of green jobs throughout the EU. It is vital that the EU supports and develops renewable hydrogen only, ensuring that it comes from all available sustainable renewable sources, be it wind, sun, hydro, biogas, etc. EREF realises the potential use of green hydrogen in industry, air transport and shipping. Albeit, there should be a focus on a domestic and regional green production and consumption pathway. There should be no long-distance shipment of hydrogen from outside the EU, in particular from the shale gas production fields in the United States. Imports of renewable hydrogen should be an exception rather than the rule, particularly as countries in the MENA region will need high amounts of renewable energy for decarbonising their own economies and providing access to sustainable energy to their people. There is already analysis showing that current production of locally “grown”, domestic, green hydrogen can be produced at a cheaper rate than hydrogen from fossil sources by 2030, since the costs for PV and wind technology will further decrease. (See e.g. recent market studies by Wood Mackenzie on Germany, Japan and Australia.)

As the projected demand for hydrogen far outweighs the projected capacity to produce green hydrogen, it is important to focus, from the beginning, on two elements for a truly sustainable hydrogen strategy: upscaling the development of renewable energy production, and limiting the use of hydrogen to those areas where it really is the best (or only) available solution to replace fossil energy sources. This would mean limiting the use of hydrogen to special industry needs, and not promoting it in areas where cheaper and more efficient, green alternatives exist. This is necessary, besides the obvious environmental implications, when considering energy security and economic viability, as there is no guaranteed import options currently available.

All other non-green investment pathways set out under the EU Hydrogen Strategy should be abandoned, as they would delay the energy transition away from fossil fuels and consequently the full decarbonisation of the EU well before 2050. These emitting and unsustainable sources will only lead to a drain on research and roll-out financing from the renewable and efficiency sector for the benefit of the incumbent energy sector, and to the detriment of the transformation towards a carbon neutral economy, thus creating a vicious circle at an EU-wide and global level, while the climate crisis is worsening.

High cost

Hydrogen, which is currently not integrated in any domestic renewable energy management or circuit, is likely to remain very cost-intensive, even in the long-term. Grey and blue hydrogen, produced using fossil fuels, seems to be a cheaper solution in the hydrogen

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equation, but only when disregarding externalities and pollution legacy. Therefore, the objective of the EU Hydrogen Strategy, to enable green hydrogen to become more competitive, seems to be biased towards developing capacities for blue and grey hydrogen production. This is done under the pretext of creating a demand for hydrogen that will eventually be satisfied by green hydrogen production. However, in reality this will create new applications for fossil gas and coal, soon to become stranded investments.

Considerable investment is envisaged to accommodate blue, grey and eventually green hydrogen on to the market. In order to achieve a fully competitive hydrogen market within the last phase of the Strategy, there must be investment into scaling up of electrolyzers manufacturing, development of lower cost carbon storage facilities, development of distribution systems, etc. The 2030 Climate Target Plan includes hydrogen pipelines as an example of infrastructure that will need to be developed and planned in the next few years. With the economic crisis caused by COVID-19, it is crucial, now more than ever, that we make smart, efficient and advantageous investments into green energy and towards a decarbonised society. Therefore, there is no allowance for further investment into any fossil fuels, and as a result grey or blue hydrogen development.

Risk of greenwashing

EREF's clear priority is the transformation of our energy system towards a more efficient one while using an increasing amount of renewable energy sources, therefore we insist that the Hydrogen Strategy must focus on renewable hydrogen, the only "Clean Hydrogen". This message has been echoed by members of the European Parliament, such as Ville Niinistö MEP, stating "*the Hydrogen Strategy must not be allowed to become a greenwashing exercise used to subsidise obsolete gas pipelines. Funding hydrogen from fossil fuels is not sustainable and not in line with our climate commitments.*" The Hydrogen Strategy must not allow fossil fuels to find a foothold through grey and blue hydrogen production. The 2030 Climate Target Plan lists hydrogen as one of the zero or very low carbon technologies that needs to be developed. However, only green hydrogen should be included on the list and further developed, as it is the only hydrogen to meet the standard of zero or very low carbon technologies.

Undoing years of work

Over the past few years, the focus of the energy transition has been towards local and decentralised energy production, with its many advantages such as increased security of supply, reduction of carbon emissions and more competitive prices. However, the current Hydrogen Strategy proposed by the European Commission has taken the opposite approach aiming for a centralised energy system, counteracting all previous efforts made. If green

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hydrogen is to complement renewable energy deployment and the energy transition, it must be produced and used locally. This would also remove the need for transporting hydrogen from other Member States or countries outside of the EU – for the benefit of local value creation and to avoid transport losses and inefficiencies.

Moreover in view of the environmental imperative under the Treaty on the Functioning of the EU, expressed e.g. under Art 3 and Art. 194, and in view of the climate emergency, any climate abatement pathways need to be first and foremost in response to the general political need and must follow the principles of general interest, public service, and the like. There is no room or time left for neoliberal programming.

Conclusion

We are dangerously close to missing the window of opportunity in limiting global warming to 1.5°C, therefore, we cannot afford to invest time or money on ineffective or pseudo solutions, such as grey and blue hydrogen. There is a real risk that with the renewed interest and attention on hydrogen, that years of hard work will be undone and priorities reversed. Energy efficiency, circular economy and renewable energy deployment are concrete, available and affordable solutions to climate change and should be prioritised through investment and support over the coming years. Green hydrogen has the potential to support and complement the renewable energy transition. However, it is certainly not the panacea, the magical solution to the climate crisis. Fossil fuels have no place in the EU energy transition and must not be allowed to delay the decarbonisation of the EU under the pretext of hydrogen.