

EC Consultation on the Hydrogen Strategy Roadmap

A Eurelectric response paper

June 2020

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Carbon-free electrification and energy efficiency will make the key contributions to the decarbonisation of transport, buildings and industry. To that end, the electricity industry, represented by Eurelectric, is committed to deliver a carbon-neutral power supply for Europe well before 2050 and is transforming the energy system to make it more and more responsive, resilient and efficient.

The power sector has a well-established position on the role of electricity to support the decarbonisation of several sectors in line with the results of its “Decarbonisation pathways” study released in 2018. The study presents three decarbonisation scenarios of the power sector for 2050 based on the electrification of key economic sectors: buildings, transport, and industrial processes. **The findings feature high levels of direct electrification that grow from 38% to 60% with an increasing decarbonisation ambition. Moreover, hydrogen and power-to-gas would represent 6% to 14% of the final energy demand depending on the decarbonisation level.**

Reaching carbon neutrality by 2050 requires drastic changes in the way we generate, transport and consume energy. This ongoing shift is based on the massive deployment of renewable energy sources and the phasing-out of fossil fuels. In this context, **the role of gas will profoundly evolve and should be basically determined by market forces.** For more detailed information on the overall role of renewables gases, in the context of the energy sector integration, please see attached to this feedback the Eurelectric answers to the EC on smart sector integration.

Eurelectric highlights that **the coupling of electricity & gas systems, notably through power-to-gas, is a key link in the transition to a carbon-neutral economy, needed to complement direct electrification in "harder to abate" sectors.** Given the decarbonisation challenges at hand, Eurelectric is calling the EU to **maintain leadership and market-based approach in the development of key emerging technologies coming from electricity and gas sector coupling (such as electrolytic hydrogen),** which will be needed to decarbonise specific segments of industrial activity and heavy-duty transport where no electric alternative to fossil fuels exist.

The main “sector coupling” product is hydrogen produced via electrolyzers (the most advanced and available P2G technology). Different types of hydrogen will have to compete on the basis of costs, which heavily depend on the cost of electricity for electrolyzers and the costs of natural gas and CO₂ storage for SMR and CCS. This hydrogen can be stored, either as hydrogen molecule or converted into synthetic methane, and provide the necessary flexibility to the energy system or/and be used by sectors that can’t be directly electrified. In a carbon neutral future, the role for hydrogen produced from decarbonised electricity, and more broadly renewable and low-carbon gases, will be determined by their competitiveness (a) vis-à-vis carbon free and renewable electricity in terms of bulk energy supply in sectors where both energy carriers are technically feasible and, (b) vis-à-vis DSR, stationary batteries, hydro pumped storage, interconnections, etc. in terms of the provision of flexibility.

The future hydrogen strategy should include the details for a clear regulatory framework and market design for hydrogen. This will provide clarity on the role of hydrogen, the cost to produce it and identify the most efficient way to transport it. Moreover, electrolytic hydrogen and synthetic methane, as well as other type of renewable or decarbonised gases, require clear, relevant and simple definitions, to enable all stakeholders to handle the same tools and to speak a common language. To this goal, **a classification of these gases should be established by the European Commission in a clear and consistent manner.** The main criteria of this classification should be the emissions of the gaseous products over its whole lifecycle.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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