

OPINION

Hydrogen – a hope for the future

Greenhouse gases and emissions from all economic sectors must be reduced to achieve climate neutrality in Austria by 2040. Green hydrogen can be of crucial importance.

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About the person

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By defining "climate neutrality 2040" as its goal, the Austrian federal government has specified a clear intention for the decades ahead. The goal is a 100 percent reduction of greenhouse gases and thus a fossil-free future. This is nothing less than a comprehensive and far-reaching transformation of our economic system which up to now has been based on fossil fuels. To actually achieve this ambitious goal, we need radically new technical innovations, many clever ideas and ambitious implementation projects in all areas - from refrigerators to steel mills. Only if we tackle the project holistically, intensively and quickly, will the efforts ultimately be crowned by success.

True to this motto, the Climate and Energy Fund has been successfully supporting this path for many years with numerous projects, subsidies and initiatives. First and foremost, the aim is to reduce energy consumption in as many areas as possible. After all, the less energy is consumed, the easier it is to use energy from renewable sources. The next step is to replace fossil fuels at 100 percent with energy from renewable sources – in all areas, from electricity and heating to industry and mobility. The goal must be the ubiquitous and sensible use of renewable energy everywhere, if possible regionally. For the energy transition to succeed, however, another important step is needed: Only if we manage to store renewable, sustainably generated energy over longer periods of time and thus make it comprehensively usable, sustainable decarbonization will really be feasible. Only then will it be possible to decouple generation and consumption over time, and only then will it be possible to use seasonal or daytime surpluses at a later date. The respective storage technologies will therefore gain enormously in importance in the electricity sector, but will also become increasingly important for heat, industrial applications and mobility.

And this is exactly where hydrogen (H₂) comes into play, and especially green hydrogen – H₂ exclusively from renewable energy. While there are many research and development efforts on the market in this direction, as well as several other technically mature storage technologies, hardly any offer a similarly long-term perspective as hydrogen. In addition, H₂ is not only a storage medium, but also an important energy carrier with very high energy density, which is already widely used in industry where it will become much more important in the future. Parallel to long-term storage and its industrial use, hydrogen also has great potential in heavy and intercity transport (rail, trucks). The high weight of vehicles and the required range virtually predestine fuel cell technology for use in commercial vehicles – several manufacturers have recently announced respective series models for the coming years. Despite all the advantages, however, hydrogen, of course, cannot answer all the questions associated with energy transition. Uses in areas other than those mentioned above should therefore be carefully examined and, in case of doubt, more suitable alternatives should be preferred.

The Climate and Energy Fund has for years been focusing its research on the conversion of renewable energy into H₂, the storage and application of green hydrogen and has been funding projects such as the "[Renewable Gasfield](#)" and "[FCTRAC](#)" which are also presented in this dossier. The focus, however, is now increasingly on moving from basic research to the implementation of a more advanced "hydrogen world" and developing hydrogen applications – as a substitute for fossil fuels – for industry and heavy transport. And in Austria, we are focusing on green hydrogen.

In Austria-wide projects such as [WIVA P&G](#), the aim is to support the topic holistically: From research to the market, from the idea to recycling, from energy generation to energy application. The goal must be to make an important contribution to accelerating domestic as well as global energy transition on the most diverse levels. Austria is not an island, hydrogen is a European, a global topic with high dynamics. We therefore perceive it as our task to make innovative companies in hydrogen technology fit for international competition and to bring good solutions out into the limelight.

With this second edition of our [hydrogen dossier](#), we aim to provide information and background knowledge, but also to stimulate discussion. The dossier is also intended to show that the Climate and Energy Fund is not only an important partner for innovation and hydrogen today, but certainly also in the years to come. With this in mind, I hope you will enjoy reading it!

Video: Theresia Vogel about Green Hydrogen

<https://www.youtube.com/watch?v=8Qahl-B2vPI>



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