

Schlussbericht / Resumee Breakout Session No. 8

Hydrogen – a Key Technology for Renewable Energy Systems

Hydrogen is a safe and efficient energy carrier of unlimited availability produced from renewable resources. Thus, hydrogen offers the prospect of a healthy and liveable environment as well as the economic opportunity for innovative know-how and technological leadership.

To discuss the future possibilities of Hydrogen in our energy system as well as in the sectors mobility and industry, several experts were invited by Alexander Trattner, CEO and CSO of the HyCentA Research GmbH, to participate in the session at the Alpbach Technology Symposium, which was organized by AIT Austrian Institute of Technology and ORF Radio Austria 1 in cooperation with the European Forum Alpbach.

Laurent Antoni, president of Hydrogen Europe, lays the focus on the need for the Clean Hydrogen Alliance, which will combine all stakeholders and will develop the hydrogen economy across Europe by supporting regional projects to install renewable hydrogen produced by low-carbon electricity.

For Philipp Braunsdorf of the National Organisation Hydrogen and Fuel Cell Technology in Berlin, the immediate focus in Germany is clearly on hydrogen production from electrolysis with renewable energy. By 2030 the capacity is to be increased by a factor of 200 to five gigawatts and then doubled again by 2035/40. Germany is set on lighthouse projects like H2valley, which go beyond transportation and include also sector coupling to energy and industry to create value in Europe.

In Austria, Climate Fund Managing Director Theresia Vogel sees the priority in starting with already existing hydrogen uses and to replace their fossil sources with renewable ones. Approaches to new uses can be made in the vicinity of public administrations, for example in public transportation. The main aspects have to be on long-term storage, on industry applications and heavy-duty vehicles.

Horst Steinmüller, managing director of the model region WIVA P&G supports the increase and importance of hydrogen projects in Austria, and the collaboration of industry and research all across Europe. Additionally, in his point of view the implementation of new business models are necessary.

Markus Lehner from the University of Leoben thinks that several different production technologies applied in parallel will be needed to cover a large hydrogen demand. In addition to electrolysis from water, production from biomass or fossil sources in combination with carbon capture and storage (CCS) could be a possible alternative.

Martin Hackl of Fronius emphasizes that a future hydrogen market can be an opportunity for local value creation, also when thinking about the use in private households. At the same time, he sees that many organizations are not yet seizing their chance: "Many companies that contribute know-how for production, distribution and application have not yet focused on hydrogen."

In conclusion, the general opinion of the panel discussion was that green hydrogen will play a major role in our future energy system and many activities are already ongoing. However, we need to intensify the implementation of production possibilities for green hydrogen, like electrolysis, and exploit the application possibilities of green hydrogen in industry and mobility to ensure decarbonisation.