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Germany's National Hydrogen Strategy sets priorities on national market ramp-up and international cooperation

- German Hydrogen Strategy focuses on hydrogen and its derivatives – known as powerfuels
- National demand and techno-economic market maturity is essential for competitiveness
- International cooperation as the cornerstone of the market ramp-up

With the National Hydrogen Strategy, Germany is sending a strong signal for the development of global markets for renewables energy carriers and feedstock's with hydrogen as a key element. Therefore, the federal government designed a strategy to establish another cornerstone of the energy transition and envisage hydrogen as key element to decarbonise the energy system. The overall 38 action items of the strategy balance the relevant aspects from climate aspects, to research and innovation, to economic and regulatory frameworks as well as aspects of international cooperation. Consequently, the strategy aligns and is embedded with the recently announced stimulus package of the German government on the 3rd of June. Therefore, the strategy will also play into the further development of the European Hydrogen Strategy, which is set to be adopted during the German Co-Presidency of the Council of EU in the second half of 2020. The recently announced Green Recovery Plan already contains and implements first components of a European hydrogen strategy.

The German Hydrogen Strategy also creates alignment between the European recovery plan and the development of a national hydrogen market. Germany as one of Europe's industrial centres is an important market for hydrogen, which is an alternative and versatile energy carrier, that can be used in industry, transport and the heating generation. "It is remarkable and well thought through, that the National Hydrogen Strategy also includes hydrogen derivatives. This is an important step towards establishing international markets for powerfuels", states Andreas Kuhlmann, spokesperson for the Global Alliance Powerfuels and CEO of the German Energy Agency (dena).

The industry will play a decisive role in this: On the one hand, industry and transport actors are expected to make up most of the demand for renewable powerfuels to contribute to climate targets and simultaneously stimulate national and international demand in the market. On the other hand, technology companies are expected to use their expertise to further innovate required technologies, such as electrolysers, and make them cost-competitive worldwide. To this extend, Germany is putting together a broad package of measures, which defines targeted guidelines for the competences in research, industry and regulation. It also builds on existing funding and research programmes as well as guidelines and thus provides the necessary framework for the market ramp-up.

In terms of regulation, the implementation of the EU Renewable Energies Directive (RED II) will support the use of renewable powerfuels; however, RED II regulations alone will not suffice. Other key areas include the implementation of the Clean Vehicles Directive (CVD) to support zero-emission vehicles in municipal transport and the examination of the eligibility of electricity-based fuels for the CO_2 fleet targets at EU level in the 2022 and 2023 review process. Additionally, R&D efforts are acknowledged with the option of a joint European project as "Important Project of Common European Interest (IPCEI)" for the field of hydrogen technologies.

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All the support mechanisms can make individual projects for powerfuels economically more viable and contribute to the market development of powerfuels. They are supposed to bridge the gap between current stand-alone project financing (e.g. real laboratories) and potential future market mechanisms where powerfuels will be competitive with other renewable technologies.

“It is absolutely right, that the national strategy places emphasis on strengthening and promoting international cooperation. Energy scenarios for Germany expect volumes of electricity-based fuels (powerfuels) ranging from 110 TWh to 380 TWh[1]”, explains Andreas Kuhlmann. Furthermore, he acknowledges that, “given the limited generation potential for renewables in Germany, the strategy logically views powerfuels as a joint project and therefore emphasises international cooperation as cornerstone.” Above all, the development of the EU internal market requires clearly defined sustainability standards for the production, transport and use of hydrogen and its derivatives.

In addition to sustainability standards, international dialogue processes and the appropriate transport infrastructure are crucial for international trade. Besides energy policy dialogues of individual countries and multilateral organisations, the interconnection of relevant partners from science and industry is essential. For the past two years, the Global Alliance Powerfuels has already been working as an international network with strong partners from industry and the energy sector, strengthening powerfuels' position in the international energy dialogue. The Alliance sees itself as a facilitator between the various markets and their participants. The network seeks specifically to overcome uncertainty in market development and discusses relevant pathways for hydrogen and powerfuels in workshops with experts from science, industry and politics worldwide.

About us:

The Global Alliance Powerfuels was initiated by the German Energy Agency (dena) together with 16 renowned corporate partners as founding members. The strategic objective of the Alliance is to foster the development of a global market for powerfuels. Therefore, the alliance collaborates with an international partner network amongst global initiatives, think tanks, initiatives, associations and research institutions to further enhance the discussion and development of Powerfuels globally, all whilst acting in line with the overall Alliance goals.

The Alliance has three main goals:

1. Raise awareness and acceptance of powerfuels as missing link to reach global climate targets;
2. Support the further enhancement of regulatory frameworks with a first focus on Europe as demand region;
3. Stimulate project development to globally enable production capacities on industrial scale, thus increasing cost competitiveness with fossil fuels.

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[1] BMUB. 2015. *Klimaschutzszenario 2050*. Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit & BDI. 2018. *Klimapfade für Deutschland*. Bundesverband der deutschen Industrie e. V. (BDI).