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DECARB INDUSTRY

DEVELOPMENT OF A NETWORK FOR DECARBONIZING INDUSTRY WITH HYDROGEN AND ITS DERIVATIVES

Germany is pursuing an ambitious goal of reducing greenhouse gas emissions by at least 65% by 2030 and achieving climate neutrality by 2045. Negative emissions are planned from 2050 onward. At the EU level, the goal of climate neutrality by 2050 applies. These targets are accompanied by stricter regulations, rising CO_2 costs, and the gradual expansion of mandatory sustainability reporting, from currently large companies to all company sizes by 2028. Companies of all sizes are required to change to climate-neutral solutions to remain competitive.

To achieve these goals, fossil fuels must be replaced with renewable energy sources in all sectors, and process-related and unavoidable CO_2 emissions must be recorded. Renewable hydrogen can represent an alternative to fossil fuels as an energy source or raw material for H_2 derivatives and makes a significant contribution to reducing CO_2 emissions. However, converting processes to hydrogen is associated with considerable effort, particularly for small and medium-sized enterprises (SMEs). Technical requirements, complex approval procedures, and a lack of experience often represent high barriers to entry.

Therefore, a cross-sector and cross-technology corporate network is to be established that covers the entire value chain: from the production of hydrogen and its derivatives, through plant construction, transport and storage, to practical applications and approval processes.

This network can foster collaborations, initiate innovative R&D projects, and develop marketable solutions. The network brings together SMEs, research institutions, and industrial users and is guided by the carbon management strategy (avoid – reduce – store).

The goal is to create practical and economically viable solutions for the decarbonization of industrial processes – and thus make a decisive contribution to achieving national and European climate targets.

The following tasks will be addressed within the framework of the Carbon Management Strategy:

Identify and quantify CO_2 emissions

- Capture, store, and make CO_2 available as a raw material for new products and synthetic fuels
- Production and distribution of renewable hydrogen
- Production of hydrogen derivatives for industrial use
- Development of processes using H_2 and/or synthetic fuels
- Planning and construction of plants and processes
- Training and development of employees
- Planning and implementation of approval processes

The network aims to map and support these tasks through partner or research collaborations. The collaboration with the Netherlands will increase the network's reach, promote cross-border cooperation, and leverage experiences and synergies from existing projects.

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WHAT DOES THE NETWORK OFFER?

The network is being established as part of the Central Innovation Program for SMEs (ZIM) of the Federal Ministry for Economic Affairs and Energy. Funding from the ZIM program gives priority to projects emerging from the network. The costs for partners range from approximately €300-€800 (depending, among other things, on the number of network partners). Participation in the network is open to small and medium-sized enterprises, research institutes, associations, and other medium-sized companies, as well as associated industrial partners.

COLLABORATION WITHIN THE NETWORK IS EXPECTED TO BRING THE FOLLOWING BENEFITS TO PARTNERS:

- Joint initiatives to implement pilot projects and showcase innovative solutions
- Support for SMEs, including access to financing and market opportunities
- Innovation-driven economic growth through collaboration and technology transfer
- Increased financing opportunities
- Support in preparing applications
- Promotional opportunities for visibility and advertising
- Interdisciplinary exchange between industry, technology suppliers, and research
- Continuing education and practical workshops (specific topics, etc.)
- Development of concrete measures in the form of pilot projects
- Dialogue on regulatory frameworks and approval procedures
- Development of application- or site-specific technologies
- Development of joint R&D projects (especially ZIM) with scaling prospects
- Partnerships for services and projects
- Technological cooperation between Germany and the Netherlands

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