

Position on hydrogen

Key messages

- Hydrogen is an essential building block in the chemical industry, but today's production process is associated with high CO₂ emissions. Reducing these emissions will be critical for the transformation of chemical manufacturing.
- Climate friendly chemistry based on clean/ emission-free hydrogen will require large amounts of reliable renewable energy at competitive prices and the rapid creation of an efficient infrastructure to enable transfer within the EU and beyond.
- We support a technology-open approach that allows the development and deployment of low-emission hydrogen processes such as methane pyrolysis and with other technologies based on renewable energy such as like water electrolysis.

About the topic

Hydrogen (H₂) is an essential raw material for the chemical industry. It is also increasingly of interest as a new energy vector that could significantly contribute to reducing the carbon footprint of our society. Currently, more than 95% of the hydrogen in Europe is produced using processes with high CO₂ emissions. The EU and many countries worldwide are working on hydrogen strategies. These involve producing clean hydrogen via various technologies like water electrolysis, methane pyrolysis, and conventional steam reforming combined with the use of carbon capture and storage, as well as certifying and transporting the hydrogen produced.

What does BASF offer?

BASF produces large amounts of hydrogen, mainly for its own consumption: Around 250,000 tons of H₂ are produced each year at our site in Ludwigshafen, Germany, for example. The current standard production method, steam reforming, is associated with high CO₂ emissions (9-10 tons of CO₂ per ton of H₂), BASF therefore plans to implement technologies like electrolysis and methane pyrolysis. The latter is currently being developed as part of our **Carbon Management R&D program**. Although the technological and economic challenges are enormous, we expect to have this technology ready for implementation from around 2030 onwards. The use of electrolysis is envisaged to be implemented earlier in a pilot plant. In order to bring a successful hydrogen economy to life and reduce CO₂ emissions efficiently, BASF is engaging in various initiatives such as the **EU Clean Hydrogen Alliance**, **GET H2** and the initiative Collaborative Innovation for Low-Carbon Emitting Technologies (**LCET**).

Our position

Clean hydrogen is a key building block and feedstock for the transformation of the chemical industry. Since hydrogen cannot be substituted, industrial manufacturers, who are the key consumers of hydrogen, should be prioritized over other sectors like energy and heating.

Both import from other regions as well as own production of H₂ need to be advanced to present a cost-competitive option.

Climate-friendly chemistry based on clean hydrogen will require large amounts of reliable renewable energy at competitive prices. The success of the hydrogen economy is inextricably linked to the expansion and integration of renewable energy as well as the removal of state-imposed components from electricity prices. In Germany, reform of the levy and surcharge system of the Renewable Energy Sources Act (EEG) is essential. Furthermore, access to renewable energies must be granted based on criteria that fully reflect the needs of industrial consumers who cannot substitute H₂ regardless of where they are located.

Technology development and industrial scaling needs support through funding programs. We call for a technology-open approach that enables the use of different hydrogen processes. Certification and classification should be based on the environmental impact and CO₂ footprint and there should be equal access to funding programs and incentive systems.

In order to enable a successful hydrogen economy, sufficient infrastructure is needed to transport both electricity and hydrogen. In Germany and at EU level, for example, it is extremely important to quickly develop a separate hydrogen infrastructure by rededicating and constructing pipelines.

For further information please contact politics@basf.com