

ttz Bremerhaven

COMPETENCE FIELD „SYNFUELS - HYDROGEN- BASED SYNTHETIC FUELS “



ttz Bremerhaven

Hydrogen is the energy source of the future - but it cannot be used directly everywhere. We are working on solutions to develop and apply hydrogen-based, synthetic energy carriers.

Our mission is to make a significant contribution to decarbonization by implementing environmentally friendly technologies in the energy and maritime sectors. As an independent research service provider, we act in between university research and industry to bring technologies into practical application. Our expertise covers the entire R&D chain, from laboratory research to industrial implementation.

For over 35 years, ttz Bremerhaven has been supporting companies of all sizes on their way to sustainable, future-proof solutions.

As an institute for applied research and development with an additional focus on “technology transfer”, ttz Bremerhaven understands it as its task not only to develop excellent technical solutions, but also to ensure the implementation of research results in practice.

We are your contact if you would like to make your process or production plants carbon-neutral. We accompany you step by step from recording the current situation and preparing feasibility studies to preliminary experimental investigations and the implementation of new technologies.

**TOGETHER WE WILL SHAPE THE
ENERGY SUPPLY OF TOMORROW.**

Competence Field SynFuels

- Preparation of scientific studies and consultancy services
- Analytical method development
- Experimental studies in laboratory and pilot scale



SERVICES

- Decarbonization by implementing hydrogen-based technologies

PREPARATION OF SCIENTIFIC STUDIES AND CONSULTANCY SERVICES

- Feasibility studies
- Technical consulting
- Scientific consulting
- Support in approval processes

ANALYTICAL METHODS DEVELOPMENT

- Detailed characterization of various materials
- Consulting and training
- Education and training programs
- Various workshops

EXPERIMENTAL STUDIES IN LABORATORY AND PILOT SCALE

- E-fuels from flue gases
- Catalyst systems
- Process parameter optimization
- Testing of system components

Test infrastructure for the production and application of hydrogen and hydrogen derivatives

Our state-of-the-art infrastructure includes a 350 m² H₂ Laboratory and a laboratory container, which are available for both laboratory and pilot plants.

A multifuel engine test bench enables direct testing of the fuels produced, while comprehensive gas analysis contributes to the quality control of the energy sources. The equipment is supplemented by specialized devices for the characterization of porous solids and the production of innovative catalyst systems. As part of our research and development projects, we also have facilities for SNG production and methanol synthesis.

We actively support companies on their path to decarbonization and have been commissioned to prepare numerous studies in recent years. We have identified potential CO₂ savings and developed strategies for implementing hydrogen and its derivatives.

Not only developing and testing, but also training and further education

We support companies with funding advice and the administration of grants for R&D projects. We also offer specialized consulting, training in the use of specific equipment technologies, comprehensive education and training programs and various workshops, for example for vocational schools.

**ttz Bremerhaven**

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