



BMDV event in Berlin on 14/03/2023: The funding approval being awarded (photo source UTG)

Synthetic methanol as a maritime fuel for shipping from Bremerhaven

The major project “*MariSynFuel*” started in Bremerhaven in January 2023

6.5 million euros are now available for the development of synthetic methanol for shipping from the “Development of Renewable Fuels” program of the Federal Ministry for Digital and Transport (BMDV). The Technology Transfer Centre (ttz) Bremerhaven successfully acquired the funds together with the Alfred Wegener Institute - Helmholtz Centre for Polar and Marine Research (AWI), the Institute of Shipping Economics and Logistics (ISL) and the companies **UTG Unabhängige Tanklogistik GmbH (UTG)**, Green Fuels GmbH and the shipping company F. Laeisz. The funds will be used to develop a technology for the production of synthetic methanol as a fuel for shipping in Bremerhaven. Numerous other companies and institutions from the region are supporting the project.

“The project's guiding objective is to establish liquid synthetic fuels for shipping in order to avoid CO₂ emissions from fossil fuels by replacing them with hydrogen-based energy sources. In this context, the provision of green hydrogen and recycled CO₂ in sufficient quantities is a prerequisite, and the development of a corresponding infrastructure is considered essential,” explains Prof. Dr.-Ing. Gerhard Schories, Institute Director at ttz Bremerhaven. At the core of the project is the development and construction of a plant for synthetic (“green”) methanol production on a demonstration scale in Bremerhaven, and the direct use of the fuel for the newly built research vessel “Uthörn” from the Alfred Wegener Institute. The vessel is equipped with two diesel engines converted to burn methanol, was christened in November 2022, and is scheduled to enter service by summer 2023 after remaining work and trials.

Climate-neutral solution thanks to “green” methanol

Since methanol has good storage and transport properties, it has numerous advantages in storage and handling compared with, for example, pure hydrogen or ammonia. It is also readily biodegradable, which is important in the event of accidents at sea or in port. In addition, existing tank farms and tank transporters can be converted with little effort and continue to be used. The planned demonstration plant is expected to produce at least 500 kg of synthetic methanol per day. To ensure the operation of the methanol synthesis plant and the purchase of the methanol produced, a supply and distribution concept will be drawn up as part of the project. Thus, the inclusion of an economic perspective and the preparation of a business plan can also be ensured and a cost reduction in the production of green methanol can be taken into account. To close the loop, methanol production will be aligned with the fuel consumption of the new building of the research vessel “Uthörn” and can be directly applied there.

Lighthouse project for the seaport at the Bremerhaven location

Bremerhaven is the second largest seaport in Germany. This project can thus serve as a lighthouse project in Bremerhaven and support the expansion and market ramp-up of the technology. The production and marketing of synthetic fuels at the Bremerhaven site is a first, necessary step towards a more sustainable and local energy supply and also contributes towards becoming less dependent on imports of fossil fuels in the future.

All companies and research institutions involved in the project are located in Bremerhaven. In this way, regional potential can be leveraged and synergies optimally exploited. The demand for synthetic fuels will increase steadily in the coming years, especially in seaports, as more and more seagoing vessels will be equipped with this type of propulsion in the future, and it can be assumed that bunkering of seagoing vessels will change (more frequent fuel consumption due to reduced cruising ranges). This project can also be seen as a concept for the production and application of other e-fuels, such as e-diesel. At the same time, Bremerhaven will be strengthened as a science and business location and the decarbonization of the transport sector, in this case maritime shipping, will be accelerated.

Together with its parent company, the Diersch & Schröder Group from Bremen, UTG is responsible for supplying the “Uthörn” with the methanol fuel “MD 97” in accordance with the specifications. UTG is currently planning and developing a bunkering and blending system for this new marine fuel to be able to refuel the “Uthörn” at UTG’s own bunker station at the Westkai in Bremerhaven’s fishing port as soon as it enters service.

“We are looking forward to working together in an efficient “MariSynFuel” project team and, as a tank storage and logistics service provider, we can make a good contribution to the future sustainable orientation of the marine fuel and bunker market at the Bremerhaven site as well,” explains Dipl.-Ing. Frank Bauer, authorized representative and Head of Technology/QHSSE at UTG.

The “*MariSynFuel*” project is funded by the Federal Ministry for Digital and Transport as part of the overall Renewable Fuels Concept with a total of 6,586,425 euros for a 4-year project period. The funding directive for the development of renewable fuels is coordinated by NOW GmbH and implemented by the project management agencies VDI/VDE Innovation + Technik GmbH and Fachagentur Nachwachsende Rohstoffe e. V.



Photo source: ttz Bremerhaven, Gerhard Schories