MariGreen
Maritime Innovations in Green Technologies

Press release:

Excursion: Hydrogen technology in the Scottish Orkney Islands

Leer/Groningen/Kirkwall. As part of the German-Dutch project MariGreen, 30 experts from maritime science, business and politics visited the Scottish Orkney Islands in mid-April to visit pilot projects and initiatives relating to the production and use of hydrogen as part of a two-day excursion program and to explore transfer possibilities to the Wadden Sea coast.

The program first led the group to the island of Eday, where renewable energy is generated with the help of tidal power plants and wind turbines and converted into compressed hydrogen in a 500 kW electrolyzer. The produced hydrogen is stored and transported in specially configured trailers. In the port of Kirkwall, the regeneratively produced hydrogen can be converted into "green energy" by a fuel cell (75 kW). This energy provides a shore power supply for ships in the port and can be used to heat surrounding buildings. Furthermore, the hydrogen produced will feed a local hydrogen filling station, as the first trucks and cars on the Orkney Islands are already powered by hydrogen.
"The integrated system of sustainable energy supply is of interest to us. We are working on similar approaches - but under different conditions," says Albert de Hoop, mayor of the island community of Ameland (NL). He reports that four cars on Ameland are already powered by hydrogen. Due to the lack of comparable wave heights and current conditions on the Wadden Sea Island, de Hoop relies on solar energy as an energy source, the generation of which is currently being successfully tested. Jens-Eric Wegner, Head of Maintenance & Operations at HPA, has also been working for some time on the potential of land-based power supply from renewable sources, especially for container ships in the Port of Hamburg. Wegner saw the excursion as a good opportunity to see hydrogen technologies in action and to expand his network in this area. Olaf Krawczyk from the Lower Saxony Ministry of Economics, Labour, Transport and Digitalization also shared this assessment: "Lower Saxony has a large amount of unused wind power. There is immense potential here if adequate storage media can be provided." In addition to technological challenges, the use of new technologies also places greater demands on the training of personnel. The participants in the "Maritime Department" of Orkney College (University of the Highlands and Islands) gained an insight into the training concept for users from the maritime sector.
The excursion was rounded off by a visit to the Highland Park Distillery, the Neolithic settlement "Skara Brae" and the stone circle "Ring of Brodgar".

"We are pleased about the successful course of the excursion with exciting actors, the good atmosphere and about new points of contact, cooperation and projects", said Sascha Strasser (MARIKO GmbH) and Leo van der Burg (FME), who organized the excursion together with their teams within the framework of the MariGreen project.

Background Hydrogen

Total global hydrogen production currently exceeds 30 million tons and mainly serves the hydrogen needs of the fertilizer and petrochemical industries. Another application is the growing production of synthetic liquid fuels. Nevertheless, 90% of global hydrogen demand is still met by the reforming of hydrocarbons with correspondingly high CO2 emissions. A CO2-neutral hydrogen supply through renewable energies is currently still in the early stages of widespread use: low production rates, unsatisfactory efficiencies or high installation and maintenance costs still stand in the way of market penetration of such hydrogen generation systems.

Background MariGreen

The aim of the MariGreen project is to prepare the maritime industry, especially small and medium-sized enterprises, for the future requirements of environmental protection, climate protection and resource and energy efficiency in shipping.

Legal environmental requirements will continue to tighten for maritime companies, especially with regard to emissions from ships and future requirements in ports. As a result, forward-looking economic thinking and action in the maritime sector is gaining in importance.

MariGreen aims to contribute to GreenShipping development through technical innovations and to strengthen the innovative capacity of regional companies in this respect. Target groups of MariGreen are on the one hand the maritime companies, on the other hand the maritime knowledge institutions as well as the professional public and the general public.

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