Seafairer

Newsletter
Issue 2 | November 2026

Charting the Course: Advanced Bio-oils for Maritime Decarbonisation

SEAFAIRER is an Innovation Action funded by the Horizon Europe framework programme under Grant Agreement no. 101173002, coordinated by the Technical University of Denmark, with a budget of EUR 10 million.

Introduction

In the second edition of the project newsletter, we have gathered the latest developments and milestones achieved within the project, which continues to advance the creation of "drop-in" biofuels, bringing them closer to practical application in maritime transport and thereby supporting the sector's transition towards lower-emission fuels.

This period has seen significant technical advancements. In this issue, you will find:

New Principal Investigator: We welcome Professor Anker Degn Jensen, who joins the project as the new Principal Investigator.

Advancement of VINTER technology: The scale-up of the VINTER technology has been completed on schedule. The demonstration plant in Hohenburg is already processing its first batches of feedstock.

Towards the European Biochar Certificate (EBC): Our biochar-related activities have reached an important initial milestone, with the issuance of the first "Letters of Conformity" by Carbon Standards International for two of the feedstocks used in SEAFAIRER.

Community of Practice: A report on the second meeting of the "Community of Practice", which brought together 23 stakeholders from across the entire biofuel value chain, including biomass producers, fuel users, regulatory bodies, and research institutions.

Rostock Large Engine Symposium 2026: An update on SEAFAIRER's participation in the 9th "Rostock Large Engine Symposium" and our ongoing collaboration with project partner FVTR.

We would like to thank all partners, stakeholders, and members of the "Community of Practice" for their ongoing contribution to the project, and we invite you to follow our progress through SEAFAIRER's communication channels.

SEAFAIRER welcomes Anker Degn Jensen as new Principal Investigator

SEAFAIRER is pleased to welcome Professor Anker Degn Jensen as the project's new Principal Investigator.
Professor Jensen is affiliated with DTU's Department of Chemical and Biochemical Engineering and heads the CHEC (Catalysis and High-temperature Engineering) Research Centre, with extensive expertise in catalysis, chemical reaction engineering, combustion, gasification and pyrolysis.

We warmly welcome Professor Jensen to the SEAFAIRER consortium and look forward to his contribution to the project's continued work on maritime and industrial decarbonisation.



Source: DTU Orbit

VINTER scale-up marks a major project milestone

VINTER is SEAFAIRER's thermochemical conversion technology, which turns biomass feedstocks into bio-oil, synthesis gas and biochar. Its scale-up was completed within the planned timeframe, marking an important milestone for the project.
These activities were carried out primarily within Work Packages 4 and 5, both led by Fraunhofer UMSICHT.
The progress was presented to the Project Officer during SEAFAIRER's first Review Meeting in May 2026, held jointly with the General Assembly and bringing together the full consortium in Sulzbach-Rosenberg and Hohenburg, where the scaled-up VINTER plant is located.
This achievement supports the project's ongoing exploitation activities, particularly in collaboration with SAGAVA, for the roll-out of the technology.

A dedicated "VINTER video series" is also planned and will be shared through SEAFAIRER's communication channels, providing further insights into the technology, how it works, and how it was set up and commissioned.

Initial feedstocks, starting with wood chips and sewage sludge, have already been successfully processed to validate the technology. When commissioning a first-of-its-kind (FOAK) plant, the initial trials are particularly important for verifying both its functional operability and performance. In the course of this work, numerous improvements have already been made to the plant, particularly regarding automation.

Over the coming weeks and months, the aim is to process the feedstocks relevant to the project in quantities of several tonnes, with plant operation as autonomous as possible and a focus on the quality of the conversion products. First and foremost, this includes the bio-oil, which will be blended into marine fuel. However, the quality of the synthesis gas and biochar is also crucial to ensuring the technology is implemented economically.
Work at the VINTER demonstration plant in Hohenburg is proceeding according to plan; initial results will be shared shortly, along with detailed information on the process and the outcomes of the conversion. This data will also be made available on our website, starting from the beginning of the new year.



Photo: SEAFAIRER consortium at the scaled-up VINTER unit during the first Review Meeting (May 2026)

Towards EBC certification: first Letters of Conformity for VINTER biochar

As part of SEAFAIRER's work on biochar valorisation, SAGAVA, together with Fraunhofer UMSICHT, has initiated contacts with Carbon Standards International (Switzerland), owner of the European Biochar Certificate (EBC) label. One of the project's key milestones is to achieve full EBC certification for VINTER biochar.
As an important early step, we commissioned EBC and World Biochar Certificate (WBC) pre-audit analyses from a laboratory accredited by Carbon Standards International to assess our biochar.
We are pleased to announce that two SEAFAIRER feedstocks – biowaste sieving material and agave bagasse – have already received Letters of Conformity from Carbon Standards International.

This does not yet constitute a certification or validation, but it is an important milestone as we continue to deepen our analytical work on biochar, with the goal of achieving full certification in the next phase of the project.

Carbon Standards

Source: Carbon Standards International (Carbon Standards), owner of the European Biochar Certificate (EBC), the World Biochar Certificate (WBC) and the Global C-Sink Registry.

SEAFAIRER Community of Practice holds its second meeting

On 30 April 2026, the SEAFAIRER project held its second Community of Practice (CoP) meeting, bringing together 23 stakeholders from across the biofuel value chain, including biomass producers, fuel consumers, regulatory bodies and research organisations.

María Soler (Fundación Valenciaport) opened the meeting by reviewing the objectives of the CoP, its benefits and current activities. Daniel Pichler, Project Manager of SEAFAIRER, presented the latest technological developments of the project, highlighting the testing of more than 90 biomass feedstocks and progress towards commercial-scale production, with annual biomass processing capacity increasing from 700 to 3,500 tonnes dry matter per unit.

Fabio Gutiérrez (Fundación Valenciaport) presented a techno-economic assessment of VINTER in the maritime sector, comparing its competitiveness with Marine Diesel Oil (MDO). The analysis highlighted how increasing regulatory costs associated with fossil fuels could further improve VINTER's competitiveness in the coming years.

Finally, Jesús Blanco, Sustainability and Energy Efficiency Manager at Baleària, shared the company's decarbonisation strategy, including alternative fuels, electrification and operational improvements. He also highlighted the financial impact of the EU Emissions Trading System on Baleària's operations, with compliance costs approximately doubling between 2024 and 2025 and affecting the profitability of certain routes.

Building on the discussions and insights shared during this meeting, the SEAFAIRER team is preparing the next CoP meeting, expected in early 2027, which will focus on the techno-economic, environmental and market-related aspects of VINTER and renewable marine fuels.



Source: CoP Card Invitation

SEAFAIRER represented at RGMT 2026 in Rostock

Daniel Pichler presented SEAFAIRER at the 9th Rostock Large Engine Symposium (RGMT), held on 13–14 October 2026 in Rostock, Germany. His presentation, “Decarbonising maritime shipping with bio-oil from advanced feedstocks”, brought SEAFAIRER’s work to an audience focused on engine technology and the future of maritime propulsion.

The presentation highlighted SEAFAIRER’s approach to developing advanced biofuels for maritime shipping through innovative thermochemical conversion. By connecting the production of bio-oil with its intended use in marine fuels, the project addresses an important link between sustainable fuel development and practical application. The event provided a valuable setting to introduce this approach and place SEAFAIRER’s activities within the wider discussion on maritime decarbonisation.

RGMT 2026 marked SEAFAIRER’s third appearance at an event organised or co-organised by project partner FVTR. This continued a productive exchange that began at the 4th Rostock Machinery Conference in September 2025, organised by FVTR together with Fraunhofer IGP and MET Motoren- und Energietechnik GmbH, and continued at the inaugural Rostock Biofuels in Shipping Symposium in April 2026. These events offer complementary perspectives on the transition towards lower-emission shipping.

While RGMT provides a forum centred on large-engine technology, the Biofuels in Shipping Symposium brings together stakeholders across the marine biofuel value chain, including fuel suppliers, engine and component manufacturers, authorities and shipping companies. For SEAFAIRER, this exchange helps connect research and technology development with the technical challenges and commercial considerations that will shape the uptake of new marine fuels.

We thank FVTR for this ongoing partnership and for providing valuable platforms for dialogue between research and industry. We already look forward to our next SEAFAIRER session at the second Rostock Biofuels in Shipping Symposium on 27 April 2027, and to continuing the exchange on bringing advanced biofuels into maritime use.



Photo: Presentation of the SEAFAIRER project at RGMT 2026 in Rostock, Germany

Catalytic hydrotreating of 100% VINTER Oil: pilot plant testing at Galp

Galp recently completed a first catalytic hydrotreating test of 100% VO (VINTER Oil) in a pilot unit, with the objective of evaluating its behaviour under specific operating conditions. The test was conducted at Galp's id.Lab hydrotreating pilot plant.

The operational behaviour of the unit, the performance of the catalytic system when processing a higher concentration of oxygenated compounds than with fossil feedstock, and the physicochemical characteristics of the resulting hydrotreated product were evaluated. No significant operational issues were observed during the experimental campaign. The results allowed for the collection of very important preliminary information, which will be extremely useful in the development of future studies.



Photo: id.Lab hydrotreating pilot plant at Galp

Next Events

SEAFAIRER will join its related projects M²ARE and POSEIDON for a joint webinar, “Advanced Methanol Synthesis and Bio-Oil Production for the Maritime Sector”, on 25 November 2026, from 11:00 to 12:30 CET.

The online event will explore sustainable chemical processes and solutions supporting maritime and industrial decarbonisation. With contributions from Dr. Marta Sousa (M²ARE Project), Dr. Julian Dailly (POSEIDON Project) and SEAFAIRER Project Manager Daniel Pichler, the interactive session will provide an opportunity to discover the projects’ approaches and exchange perspectives on advancing the green transition.

We look forward to connecting with researchers, industry representatives and other stakeholders for this joint discussion.

View the agenda

Register for the webinar

Partners

DTU · galp · FVTR · UABIO Bioenergy Association of Ukraine · Fraunhofer UMSICHT · KPMG · Sagava · Fundación Valenciaport · centro mario molina · etaflorence renewableenergies

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Funded by the European Union under Grant Agreement no. 101173002. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.