



## Conoship and Bouman join forces on ship-based carbon capture joint venture

EverLoNG ship-based carbon capture project partners Bouman Industries and Conoship International have signed an agreement to create a joint venture that would build ship-based carbon capture (SBCC) systems.



The new partnership, called Carobotreat Maritime, aims to use its combined expertise to help shipowners and operators reduce CO<sub>2</sub> emissions on their newbuild and existing vessels.

*"It's my pleasure to announce that Bouman Industries and Conoship International start a joint venture to build ship-based carbon capture systems. Bouman Industries with its subsidiary Carbotreat is known for its strength in building field-proven land based carbon capture systems. With this joint venture, Carbotreat Maritime, we develop these systems suitable for use on ships to reduce CO<sub>2</sub> emissions in maritime application. Together we can accelerate the decarbonization of the maritime sector in the coming decades. This partnership therefore ensures Conoship International's mission to provide the shipping industry with practical solutions to achieve low or zero-emission ships,"* said **Geert Dokter**, CEO at Conoship International.

With a mission to provide the shipping industry with ship-based carbon capture, Carbotreat Maritime will be building systems for coastal ships smaller than 10.000 kW.

*"It's very nice and interesting to see that the developments within EverLoNG contribute to the launch of this joint venture. It emphasizes the potential that the partners see in the further implementation of ship-based carbon capture as an important contribution to lower CO<sub>2</sub> emissions,"* said EverLoNG project coordinator **Marco Linders** (TNO).



Conoship International and Carbotreat, a subsidiary of Bouman Industries, have been partners in EverLoNG since the project began in 2021.

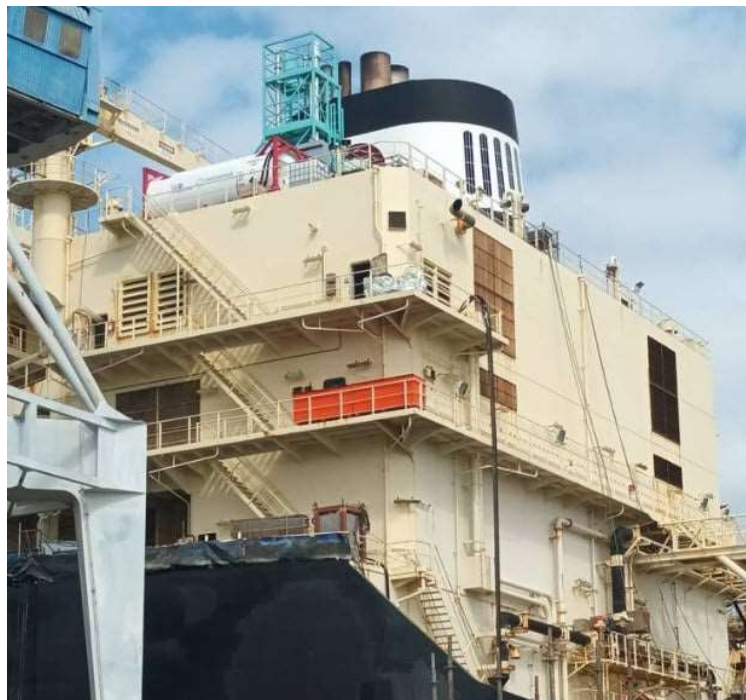
This joint venture is the spin-off of the four year collaboration with TNO and Bouman. Conoship has been researching and developing the maritime application of this technology, particularly for LNG-powered vessels. In the international carbon capture research project EverLoNG, two carbon capture Systems are under development in case studies for Heerema's Sleipnir and an LNG carrier of Total Energies.

The EverLoNG project aims to encourage the uptake of SBCC by demonstrating its use on board LNG-fuelled ships and moving it closer to market readiness.

The partners claim that adding a ship based carbon capture System to capture the CO<sub>2</sub> in the exhaust gasses, the shipboard CO<sub>2</sub> -emissions can be reduced by up to 95 percent. The captured CO<sub>2</sub> can be cooled and stored on board. Onshore, it can be reused to produce synthetic methane.

*"With our realized land-based CO<sub>2</sub> capture plants, combined with Conoships expertise, we can deliver large-scale carbon capture and storage plants onboard ships. Research has shown that our Carbon Capturing Systems enable to reach the IMO goals 2030 and 2050, even for existing ships. With Carbotreat Maritime we can reduce the carbon footprint of shipping with more than 75% in the short term and are aiming for 100% in the future,"* said **Wilco van Wijck**, CEO at Bouman Industries.

A ship-based carbon capture prototype developed under the EverLoNG project was installed on an LNG-powered LNG carrier owned by energy major TotalEnergies while in drydock in Spain, in the summer of 2023.



*TotalEnergies equips LNG carrier with EverLoNG's carbon capture system.*



The goal of the project was to capture ten tonnes of CO<sub>2</sub> on board TotalEnergies' LNG carrier, during a 3000-hour test campaign. After the trial on TotalEnergies' LNG carrier, the SBCC equipment was removed and installed on a second vessel, Heerema's LNG-powered Sleipnir crane ship.

The pivotal facet of the project revolves around enhancing the cost-effectiveness of SBCC. The ambitious target is to drive down the expenses associated with CO<sub>2</sub> capture and on-board storage to below 100 €/ton for initial implementations (1st of a kind) by the year 2025, and an even more cost-efficient 50 €/ton for subsequent implementations.

Parallel to this, the project is conducting a comprehensive evaluation of the various facets involved in the off-loading, transportation, and storage (or potential utilization) of captured CO<sub>2</sub> within multiple CCUS chains. Simultaneously, rigorous assessment is underway to gauge the impact of SBCC on ships' infrastructure, stability, and safety. Ensuring the technical viability of the proposed technology is of paramount importance.

The project involves a collaborative effort of 18 companies consisting of:

TNO, Conoship International, VDL Carbon capture, TotalEnergies, Heerema Marine Contractors, Scottish Carbon Capture and Storage, The University of Edinburgh, Anthony Veder, SINTEF, Bureau Veritas Group, Lloyd's Register, Los Alamos National Laboratory, DNV, Nexant, Carbotreat, Bouman Industries, MAN Energy Solutions, and Forschungszentrum Jülich.

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Wilco van Wijck