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International team nets €3.4M to advance ship-based carbon capture for maritime sector

EverLoNG to conduct technology trials on board two LNG-fuelled ships along with supporting studies

A cross-boundary project involving science and industry experts has landed €3.4 million (total budget €4.9M) from an EU climate action fund to accelerate the uptake of ship-based carbon capture (SBCC) by international shipping companies.

The EverLoNG project led by TNO will demonstrate SBCC on board two LNG-fuelled ships, owned and operated by project partners TotalEnergies and Heerema Marine Contractors, with results aimed at moving the technology closer to market readiness.

As well as the SBCC trials, the 16 project partners from five countries – Germany, the Netherlands, Norway, the UK and the USA – will conduct studies to support the development of full-chain carbon capture, utilisation and storage (CCUS) networks, connecting SBCC with CO₂ transport links, geological CO₂ storage and markets for CO₂ use. These studies will identify and help solve any technical barriers to the implementation of SBCC as well as lower the costs associated with the technology.

The project consortium includes ship classification societies – Lloyd's Register, Bureau Veritas and DNV – who will evaluate how SBCC fits within existing regulatory frameworks for shipping.

Combined activities by EverLoNG partners will support the ambitious target of advancing SBCC as a cost-competitive decarbonisation option on the market by 2025, with a marginal abatement cost – the cost of reducing environmental impact – of between €75 and €100 per tonne of CO₂ equivalent and a CO₂ capture rate of up to 90%.

EverLoNG has today launched a dedicated website – everlongccus.eu - with information about all aspects of the project and links to its social media channels.

EverLoNG project coordinator, Marco Linders of TNO, said: “Funding from the ACT3 programme will enable us to conduct studies aimed at making commercial ship-based carbon capture a reality. Our demonstration campaigns will optimise SBCC technology and we will also consider how best to integrate it into existing ship and port infrastructure. We'll also carry out detailed life cycle assessments and techno-economic analysis, which will be essential information for maritime sector companies. International collaboration is a big part of EverLoNG and our consortium is fully committed to supporting the shipping industry's decarbonisation goals.”

Heerema's Sustainability Project Manager, Cees Dijkhuizen, said: “At Heerema, we believe that a responsible company is a sustainable company. This belief is why we became carbon neutral in 2020 and have committed to reducing our footprint by up to 80% by the end of 2026. Taking part in the EverLoNG Project and testing the use of a carbon capture and storage system on board our ship Sleipnir is an important step towards reaching our goals.”

Philip Llewellyn, Carbon Capture, Utilisation and Storage Program Manager, TotalEnergies, said: “TotalEnergies is pleased to be part of the EverLoNG project, which aims to demonstrate the feasibility of CO₂ capture on board ships. As part of our climate ambition to achieve net zero emissions by 2050, together with society, the decarbonisation of our maritime activity is an important

challenge. Ship-based carbon capture is a promising short-term solution as it could be installed on the current fleet of ships. In addition, the potential application of such a technology onboard future CO₂ carriers, as in the Northern Lights project, in which TotalEnergies is a partner, could bring high-potential synergies.”

Following a rigorous two-stage evaluation process, EverLoNG was selected along with 12 other R&D projects by the ACT3 funders in 2021 in order to address key research and innovation targets in the CCUS field.

The maritime sector aims to reduce CO₂ emissions from international shipping by at least 50% by 2050. SBCC is one option being considered as a low-cost, short-term approach to decarbonising the sector, compared to zero-emission fuels, such as ammonia and hydrogen.

Keep up-to-date with the EverLoNG project by visiting our [website](#), following us on Twitter [@everlongccus](#) and [LinkedIn](#) and signing up to our mailing list [here](#).

Project contact

Marco Linders, TNO, EverLoNG Project Coordinator

E: marco.linders@tno.nl

T: [+31 6 225 450 18]

Notes to Editors

[1] The objective of the EverLoNG project is to accelerate the implementation of SBCC technology by: (i) demonstrating SBCC on board LNG-fuelled ships; (ii) optimising SBCC integration into existing ship infrastructure; and (iii) facilitating the development of SBCC-based full CCUS chains. The project will also contribute to developing regulatory frameworks for the safe and effective use of SBCC in the shipping sector.

[2] The **EverLoNG project (No: 327332)** began in October 2021 and will run until September 2024. It is co-funded by the ERA-NET Accelerating CCS Technologies (ACT3) initiative. The governments of each participating country have contributed €3.4M funding through the ACT3 initiative. The project's total budget of €4.9M includes in-kind contributions from project partners. The national funding agencies are:

- The Netherlands: Ministry of Economic Affairs and Climate Policy
- Germany: The Federal Ministry for Economic Affairs and Energy (BMWi)
- Norway: The Research Council of Norway
- United Kingdom: Jointly supported by the Department for Business, Energy & Industrial Strategy (BEIS), the Natural Environment Research Council (NERC) and the Engineering and Physical Sciences Research Council (EPSRC)
- USA: Department of Energy (DoE)

[3] The **EverLoNG international project consortium**, which is led by TNO, includes:

- Germany: MAN Energy Solutions, Forschungszentrum Jülich GmbH
- The Netherlands: TNO (project lead), Conoship International, Carbotreat B.V., VDL AEC Maritime, Heerema Marine Contractors, Anthony Veder
- Norway: TotalEnergies, SINTEF AS, Bureau Veritas Norway AS, ÅKP AS, DNV
- United Kingdom: Lloyd's Register; Scottish Carbon Capture & Storage (University of Edinburgh)
- USA: Los Alamos National Laboratory

[4] The EU's **Accelerating CCS Technologies (ACT) programme** is an international initiative to establish CCUS as a tool to combat global warming. It provides funding for research and innovation projects that can lead to safe and cost-effective CCUS technology. The first ACT Call for project proposals was published in 2016 and the second in 2018. The third ACT Call was published in 2020. More details at <http://www.act-ccs.eu>