

SEADEEP advances digital and energy-efficient solutions for Europe's aquatic food sector

Kiel / Strande, June 2026 – A new European project, SEADEEP (Sustainable Energy Advancement through Digitalisation for Energy Efficient Production in Aquaculture and Fisheries), has officially launched. The project aims to accelerate the transition toward sustainable, low-carbon aquatic food production systems by deploying advanced digital solutions and energy-efficient technologies.

Aquaculture and fisheries are essential to global food security, yet they face increasing pressure to reduce environmental impact, improve energy efficiency, and remain economically viable. High energy consumption, operational inefficiencies and limited uptake of digital technologies continue to slow down the sector's transition to more sustainable practices. The newly launched SEADEEP project directly addresses these challenges by supporting the sector's shift toward integrated digitalisation and energy optimisation, enabling producers to reduce emissions while maintaining productivity and competitiveness. The project will test and deliver 16 innovative solutions (TRL 6-8) across nine demonstration sites across the North Sea and Baltic Sea basins, ensuring that these innovations are scalable, adaptable and directly relevant to current industry needs for:

- Macroalgae farming: one large-scale energy-efficient solution and two advanced digital solutions to optimise production and resource use.
- Recirculating aquaculture systems (RAS): one large-scale energy-efficient installation alongside eight digital solutions to enhance monitoring, control and efficiency.
- Small-scale fishing fleets: four digital solutions aimed at improving operational efficiency, energy use and decision-making at sea.

In SEADEEP, the three German partners – the Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Oceanloop Kiel GmbH and Erwin Sander Elektroapparatebau GmbH– work together to advance digital and energy-efficient innovation in recirculating aquaculture systems (RAS). Fraunhofer IFAM leads the RAS work package, coordinating the development and validation of solutions for land-based

[Oceanloop Management GmbH](#)

Leopoldstraße 171
80804 München

Bank: Hypovereinsbank
IBAN: DE95 7002 0270 0038 1833 54
BIC: HYVEDEMMXXX

Amtsgericht München,
HRB 279262
Ust.-Id.-Nr.: DE XXXXXXXX

www.oceanloop.com

aquaculture. Oceanloop provides the demonstration site in Kiel, where new concepts are integrated and tested in a next-generation RAS setup for Queensland giant grouper. Erwin Sander contributes RAS engineering and automation expertise for key process upgrades in water treatment and system operation. Together, the three partners combine research, system integration and industrial implementation to develop scalable solutions for more efficient land-based aquaculture in Europe.

The project brings together 30 partners from 11 countries. The research and innovation partners, including IVL Swedish Environmental Research Institute (Coordinator), Norwegian Institute for Water Research (NIVA), Fraunhofer, Uniwersytet Morski w Gdyni, AZTI, and Photonics Bretagne, drive scientific excellence, system design and validation activities across the project. The networks and industry platforms, including Submariner Network for Blue Growth, Food & Bio Cluster Denmark, Eurofish International Organisation and the European Aquaculture Technology and Innovation Platform (EATiP), support stakeholder engagement, policy alignment as well as the dissemination and uptake of project results across Europe. The industry, technology providers and demonstration partners, including Oceanloop, SmögenLax, Danish Salmon, Ocean Forest (Lerøy), Nordic SeaFarm, Norfolk Seaweed, Vetik, Szkuner Sp. z o.o. (Port of Władysławowo), FSK-PO, Aquaticode, OxyGuard International A/S, Kesacon AB, Infrasonik, VisionAir, YellowScan, Erwin Sander Elektroapparatebau, Kytos, Dynamita, Solution Seeker AS and Flonergia are responsible for developing, deploying and validating solutions in real-world aquaculture and fisheries environments.



**Funded by
the European Union**

Oceanloop Management GmbH

Leopoldstraße 171
80804 München

Bank: Hypovereinsbank
IBAN: DE95 7002 0270 0038 1833 54
BIC: HYVEDEMMXXX

Amtsgericht München,
HRB 279262
Ust.-Id.-Nr.: DE XXXXXXX

www.oceanloop.com