



**Novellino Antonio**

ETT SpA (Deda.Group)





Can we produce energy and grow seafood in the same place?  
Can we enhance sustainability of low trophic aquaculture  
Can we help capturing CO<sub>2</sub>

## Offshore Low-Trophic Aquaculture in Multi-Use Scenario Realisation

OLAMUR addresses key bottlenecks hampering the development of commercially viable and sustainable offshore low-trophic aquaculture (LTA) in wind farms or fish farms and thereby enhancing a sustainable LTA production in the EU.

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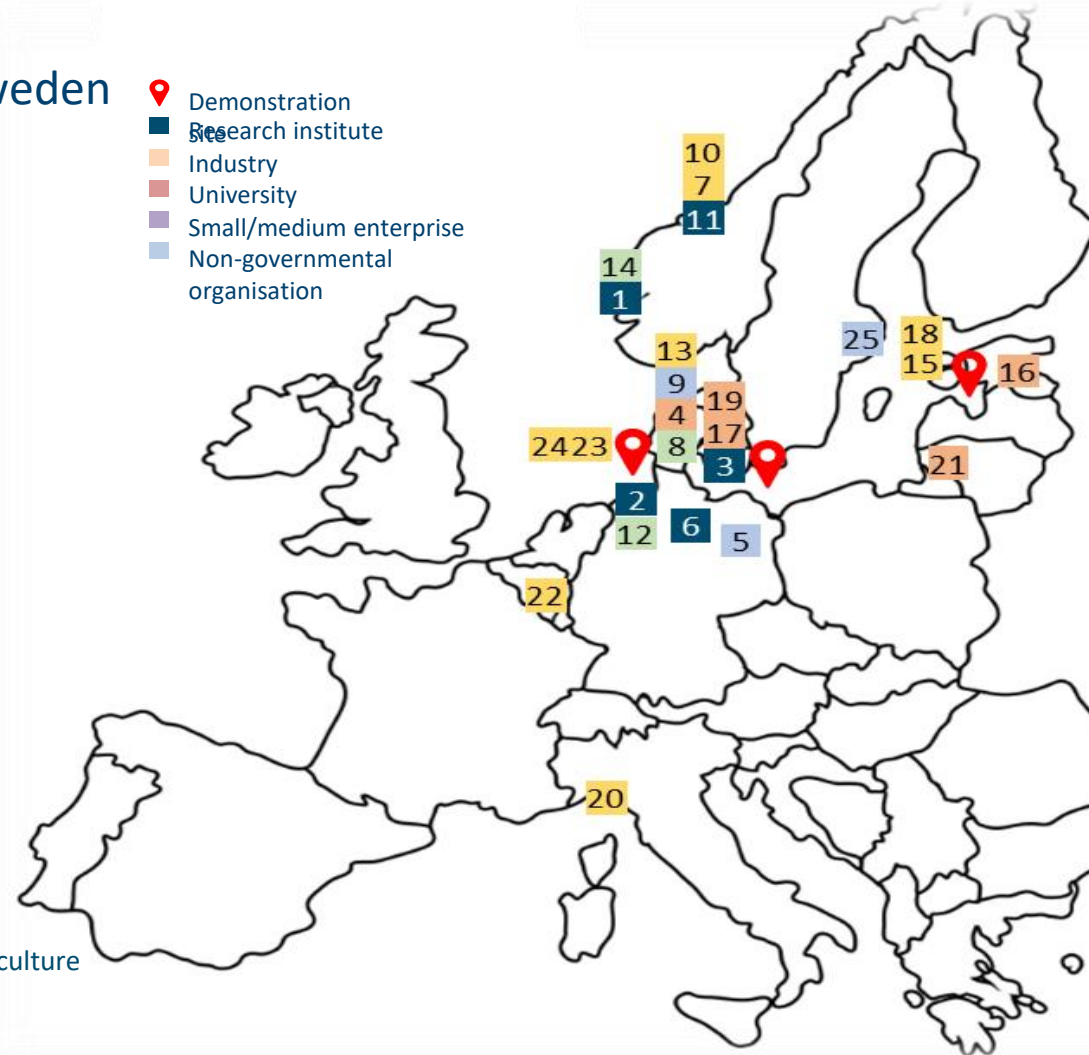
25 partners from 8 different countries across Europe

Germany, Norway, Denmark, Estonia, Italy, Lithuania, Belgium and Sweden

9 SMEs, 5 Universities, 5 Research and Technology Institutes, 3 Non-Government Organisations and 3 industry partners,

complementary expertise: environmental science and policy, meteo, robotics, wind technology and aquaculture farms.

- |                                                                                                |                                                                                                        |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 1 Havforskningsinstituttet , Norway<br>Alfred Wegener Institute Helmholtz Centre for Polar and | 13 Kerteminde Seafarm Aps , Denmark                                                                    |
| 2 Marine Research , Germany                                                                    | 14 Lerøy Seafood Group ASA , Norway                                                                    |
| 3 Danmarks Meteorologiske Institut , Danmark                                                   | 15 RedStorm OÜ , Estonia                                                                               |
| 4 Aarhus Universitet , Danmark                                                                 | 16 Tartu Ulikool , Estonia                                                                             |
| 5 GCF - Global Climate Forum EV , Germany                                                      | 17 Danmarks Tekniske Universitet , Danmark                                                             |
| 6 Helmholtz-Zentrum Hereon , Germany                                                           | 18 Ösel Aquafarm OÜ , Estonia                                                                          |
| 7 Maritime Robotics AS , Norway                                                                | 19 Københavns Universitet , Danmark                                                                    |
| 8 Vattenfall Europe Windkraft AS , Danmark                                                     | 20 ETT Spa , Italy                                                                                     |
| 9 Kattegatcentrets Driftsfond , Danmark                                                        | 21 Klaipėdos Universitetas , Lithuania<br>Plateforme Technologique et de l'innovation de l'aquaculture |
| 10 Skarv Technologies AS , Norway                                                              | 22 Europeenne ASBL , Belgium                                                                           |
| 11 SINTEF Ocean AS , Norway                                                                    | 23 Nordfriesische Seemuschel GmbH , Germany                                                            |
| 12 WindMW GmbH , Germany                                                                       | 24 Wyk 8 Muschelfischereibetrieb GmbH , Germany                                                        |
|                                                                                                | 25 Stiftelsen Voice of the Ocean , Sweden                                                              |



# North Sea / Baltic Sea

3 pilot demonstration sites where seaweed and blue mussels will be grown within windfarms (A,B) and in the vicinity of a trout farm (C).

Baltic Sea

C



## Finfish Aquaculture

- 2 miles from port Veere
- sheltered
- blue mussels
- sea lattuce

next to a trout farm in the Estonian Sea near the Port of Veere.

C

## Offshore Wind Farms

- 72 turbines
- 8 miles from Klintholm Havn
- open ocean exposed
- blue mussels
- sugar kelp
- sea lattuce

The wind farm pilot sites are located

B

in the Danish EEZ of the Baltic Sea at Kriegers Flak

A

in the German exclusive economic zone (EEZ) of the North Sea north of Helgoland

## Offshore Wind Farm North Sea

- 80 turbines
- 12.4 miles from Helgoland
- open ocean extremely exposed
- blue mussels
- Eur. Oyster
- sugar kelp
- sea lattuce



North Sea





## Services for the operators

### Event warning service



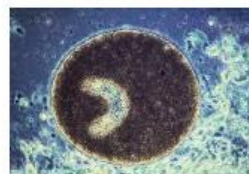
Identifies high impact events (storms, algal blooms) for early warning

### Alien species risk



Assesses risk of alien species dispersal

### Disease propagation risk



Evaluates risk for selected parasites considering dynamic ocean conditions

### Offshore operation planner

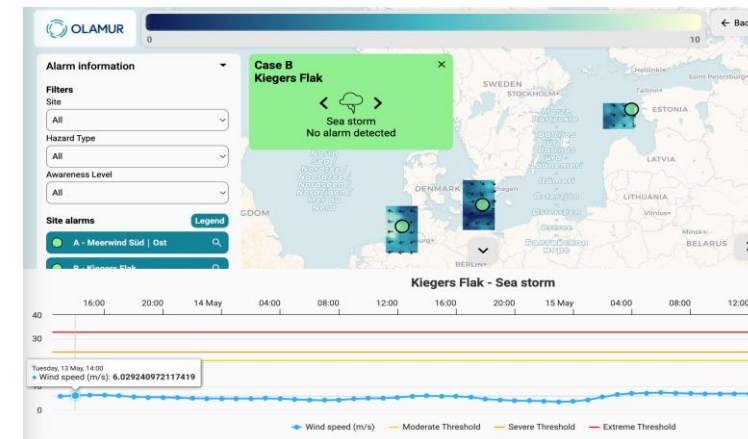
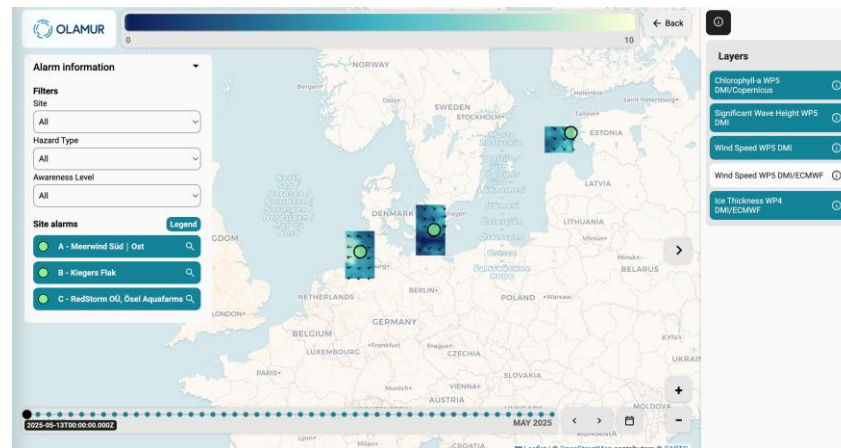
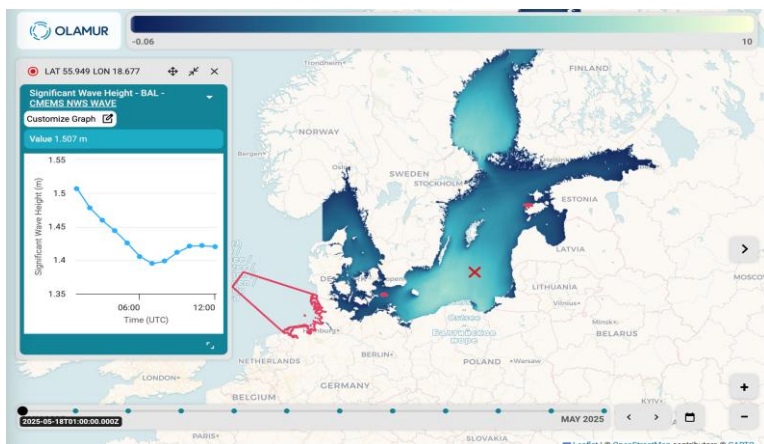


Forecasting tool for daily operations using multi-model ensemble & machine learning

### Farm performance control



Assesses farm health conditions based on aggregated data





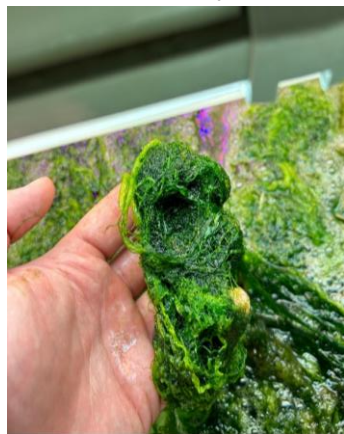
## Services for users



Shellfish



seaweeds (*Saccharina* breeding)



seaweeds (*Saccharina* breeding)



FRIED  
KELP CHIPS



# Inspire

marine biodiversity

OLAMUR

[www.olamur.eu](http://www.olamur.eu)

contacts:

[info@olamur.eu](mailto:info@olamur.eu)

[antonio.novellino@dedagroup.it](mailto:antonio.novellino@dedagroup.it)



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