



Showcasing the effectiveness of Ocean Multi-use practices in the North Sea and Baltic Sea.



## Contact

-  [ultfarms.eu](http://ultfarms.eu)
-  [jekjp@aqu.dtu.dk](mailto:jekjp@aqu.dtu.dk)
-  @ULTFARMS
-  @ULTFARMS



The project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101093888. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

### Get the latest news



 SCAN ME

# ULTFARMS Danish Pilot Anholt

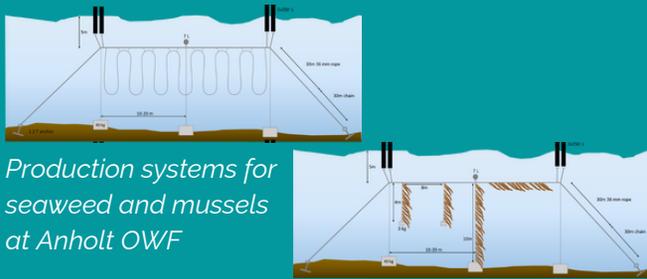
[ultfarms.eu](http://ultfarms.eu)



# About the pilot

Located 11 nautical miles from Anholt Island and 19 nautical miles from Grenaa port, the Anholt Offshore Wind Farm (OWF) is exposed to strong currents (max. 3 knots, average 1.5 knots) and high wind conditions (max wave height 5.7 m). With 111 fully developed windmills, the main objectives of the Anholt OWF pilot are:

- **Blue Mussels & Seaweed Cultivation:** Demonstrating the potential for producing blue mussels, sugar kelp, and dulse.
- **System Configurations:** Testing different production system configurations.
- **Biodiversity Impact:** Assessing the effects of these production systems on mobile epifauna and surrounding biodiversity.



Production systems for seaweed and mussels at Anholt OWF

# Main Achievements

- **Licenses & Production:** Blue mussel and seaweed production licenses granted (spring 2023 & early 2024). Production systems deployed for both species.
- **Seaweed:** Production lines (autumn 2023) yielded low biomass (0.4 kg/m) but a clean, fouling-free product.
- **Blue Mussels:** Good recruitment on “fuzzy rope” collectors (Sept. 2024), poor on nylon bands. Barnacle settlement observed.
- **Monitoring & Data:** A monitoring system (ADCP, CTD, loggers) is in place. Pre-deployment footage of mobile epifauna captured, with follow-up planned in 2025.

# Main Challenges



- **Co-Management:** Difficulty in co-management due to boats used by the OWF operator Ørsted being unsuitable for aquaculture operations and liability requirements of operating near OWF infrastructure.



- **Weather Conditions:** Adverse weather limits operational windows. Winter storms (2023-24) caused equipment loss, reducing the number of production lines to two. Access restrictions also hinder monitoring, leading to depleted batteries or fouled sensors.



- **Seaweed Production:** Low production compared to inshore locations, but the crop is clean and valuable.



- **Mussels:** Low production compared to inshore waters, heavy barnacle fouling in first production season.



- **Design Adjustments:** Changes to mooring designs and upcoming adjustments to spat collector designs for the next mussel farming season.

# Application

ANHOLT  
DK BALTIC SEA



Sectors covered:

-  Mussels aquaculture
-  Seaweed aquaculture
-  Renewables
-  Renewables

# Scientific



- **Mooring Solutions:** Adapted to production setups for offshore aquaculture.



- **Monitoring Systems:** Successful deployment and operation in challenging offshore environments and environmental monitoring.



- **Seaweed Production:** Potential for various species in offshore conditions.



- **Mussel Production:** Identified potential and challenges in mussel farming.

# Commercial



- **Submersible Systems:** Development of systems for offshore use.



- **Seaweed Handling:** Methods focused on producing clean, high-quality crops.



- **Spore Line Production:** Optimized for remote offshore deployment.