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Intelligence

# Wind turbine-powered offshore fish farm tech aims to boost salmon production in Scotland

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By Responsible Seafood Advocate

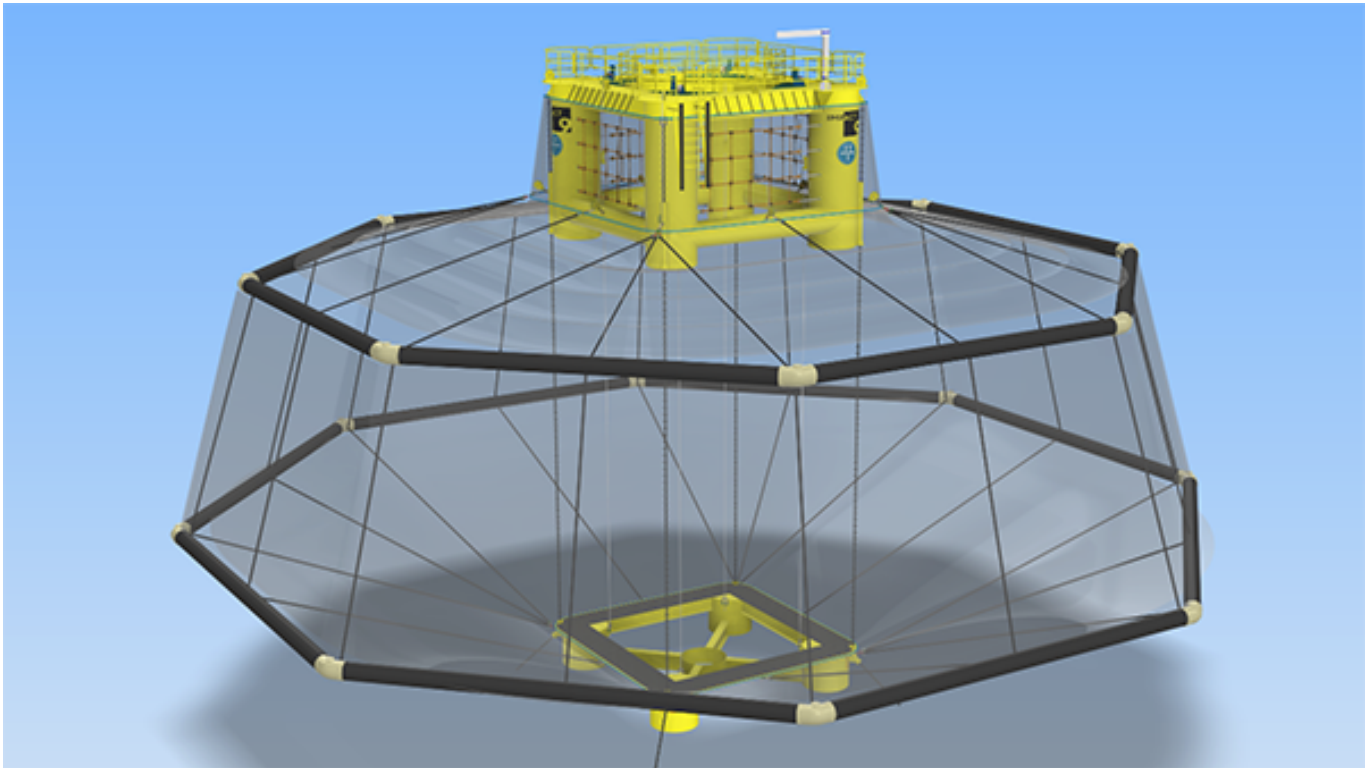
## Startup Impact-9 ready to test its submersible, flexible floating salmon enclosures

Aquaculture technology startup Impact-9 says its newly designed submersible, floating structures, which are ready to be tested at scale, could each produce 2,500 tons of salmon annually off the coast of Scotland, significantly boosting production and profit.

The company reported that its Net9 system, which utilizes natural ocean conditions, is a proven concept ready for testing at scale. At full scale, a single Net9 pen could produce up to 2,500 metric tons of salmon each year, the company claims.


This development milestone represents the end of the latest phase of the £200,000 Inflatable Marine Products for Aquaculture Containment Technology project (IMPACT), funded by the UK Seafood Innovation Fund (SIF) and the Sustainable Aquaculture Innovation Centre (SAIC).

“A move further offshore can pave the way for a new sustainable seafood industry of scale, worth billions of pounds in the UK alone. The economic potential is similar to that of offshore wind. However,




Impact-9 claims its prototype submersible, floating offshore fish farm enclosure, ready for testing, could produce up to 2,500 tons of salmon a year.

it will occupy a relatively small amount of ocean real estate and could fit in with existing and planned offshore wind turbine arrays,” said John Fitzgerald, CEO of Impact-9.



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(<https://www.global.admanimalnutrition.com/activities/aquaculture/>).

Engineers from Tension Technology International (TTI) and blue economy project developer Simply Blue Group were also involved in the development work, looking at regulatory issues and fish health and welfare as well as the cost challenges associated with farming in the open ocean.

The system employs a flexible structure designed to move with the waves, reducing the potential stress on fish. The company has identified an opportunity to use the new technology within existing and planned offshore wind energy zones, where a small portion of these zones – around 12 x 12 km – would be enough to house 280 pens and quadruple Scottish production, citing comparative data from **Fish Pool** (<https://fishpool.eu/nasdaq-salmon-index/>).

## Report: With the right technology, ocean renewable energy can power offshore aquaculture



A new report says ocean renewable energy has the potential to power offshore aquaculture and decrease the environmental impact of operations.



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“In the same way that lithium-ion batteries are the key to green transport, we believe that smart flexible structural elements like those used in Net9 will be the enabler of offshore seafood production,” added Fitzgerald. The most exciting part of this phase of work was to see the positive crossover between fish welfare and structural engineering. The potential for stormy weather is of course unavoidable in these environments, but the design of the system allows the net and the fish contained in it to move together with much more flexibility than a rigid structure.”

Next year, the research team plans to begin building a unit suitable for technical demonstration at the European Marine Energy Centre (EMEC) in Orkney, which will also provide interested producers with an opportunity to see a model of the system in operation.

“This is part of a systematic engineering approach to address technical novelty and undergo carefully managed tests to qualify that new features will perform as desired,” Tom Mackay, engineering manager at TTI. “The process is similar to offshore renewable systems development, and we have brought to bear expertise from that sector to help Impact-9 manage the risk of adopting their novel structures in the Net9 application.”

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