Electric boats
Evoy fish farming boat eliminates emissions with ABB drives

by Evoy, Norway

Under the Paris agreement, Norway pledged to reduce its greenhouse gas emissions by at least 50 percent by 2030. To achieve this goal, the country is leading the way in electric vehicles. Its maritime industry is following suit with innovative designs such as the Evoy electric fish farming boat.

Capable of operating at speeds up to 49 knots (90 kilometers-per-hour), Evoy is possibly the world’s fastest serial-production craft of its type. At the heart of Evoy’s electric propulsion system is an ABB drive.

A better boat for fish farmers
Evoy is the brainchild of Leif A Stavøstrand, a Norwegian fish farmer who wanted to design a new type of electric boat for his industry. The aim was to find an alternative to the usual craft powered by noisy, carbon dioxide-emitting internal combustion engines. The first of these boats, Evoy 1, was named officially by the Norwegian Prime Minister, Erna Solberg.

Fish farming is a growing industry. Since 1961, the world’s consumption of fish has risen at twice the rate of population growth. While the nutrients and organic matter from aquaculture sites does not constitute an environmental problem, most of the specialised boats used in the industry still rely on diesel.

To overcome this challenge, Leif began investigating more environmentally friendly designs. His first design was based on a catamaran with electric motors located within the foils. With his father’s help, Leif decided to turn this idea into a real product, and they started looking for industrial equipment and solutions to start the build.

After exploring the market for several years, Leif realised that the right solution still did not exist, so he decided to take matters into his own hands. He resigned as CEO of Saga Fjordbase in Florø and started a new company, Evoy, to develop marine electric propulsion systems.

“There were two main reasons why I took the chance to start Evoy,” said Leif. “First, I am personally committed to protecting the environment. I have two daughters, four and seven years old, and I am concerned about their future. The second reason was that I knew I would regret not trying.” says Leif.

How can drives help fish farmers?
Evoy’s goal is to eliminate boating emissions and make boats 100 percent electric. The company offers turn-key systems which can be installed in new boats and retrofitted into old boats. At this point in the design process, Evoy had decided on batteries and motors, but it needed a system to make them work together. This is where ABB’s HES880 drive come in.

The HES880 drives supplied by ABB feature IP67 protection. This certification is vital for the fish farming market, as all equipment onboard must be able to withstand the wet conditions. The drives are also easy to install and program, which is important for retrofitting boats which currently use internal combustion engines.
That was the final piece of the puzzle, and Leif’s new vessels are ready to sell to fish farmers. He believes that the simplicity and reliability of electric propulsion is a perfect fit for this niche market which requires extremely resilient boats.

In normal operation, at speeds up to 25 knots, the onboard rechargeable batteries will allow Evoy 1 to operate for around one hour. At much lower speeds of four-to-five knots, the operating time increases to several hours. The boat can be fully charged in 30 minutes using a high-speed charger. As well as operating as a local service boat in the aquaculture industry, the Evoy design could find many other applications in tourism and harbor sightseeing.

In the future, Evoy aims to move beyond building boats to become a full system supplier. Leif’s next idea is to extract data from the boats to develop an ‘improvement loop’: a cloud-based solution for remote monitoring, data collection and analysis.

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