

Pursuits
Hyperdrive

A Silent Revolution Under Water

After cars, battery-powered boats are the next frontier.



Designboats.ch Electro Tender 08e at the Monaco Yacht Club. Photographer: Balint Porneczy/Bloomberg

By **David Verbeek**

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The slender boat lurches forward, its four passengers clinging to the wooden deck as they surge past the Monaco skyline. For all its sculpted lines and awesome acceleration, the white cruiser wouldn't be out of place with climate activist Greta Thunberg at the wheel, rather than the moneyed elite flocking to the principality in search of a new toy.

"Such aggressive acceleration is only possible with electric drives," says Peter Minder, as he commands the 250,000-euro (\$277,000) boat built by his company Designboats.ch. Only the air stream and a high-pitched buzz from twin electric engines betray a speed of almost 30 miles per hour. "Our clients increasingly want to enjoy their maritime hobbies without emissions and noise. But they still want to have fun."

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While electric cars are a realistic alternative to the century-old internal-combustion engine, the world's waterways are dominated by ships that belch plumes of diesel exhaust and heavy fuel oil. But because of long life cycles and a shortage of charging infrastructure and advanced batteries, converting ships is difficult. That hasn't stopped governments from Norway to Thailand insisting on a greener future.



A Torqeedo GmbH Deep Blue electric outboard motor powers a rigid-inflatable boat in Port Hercules. Photographer: Balint Porneczy/Bloomberg

Monaco, just a speck on the global map, wants to play a part. The city state attracts some of the most luxurious—and thirsty—private yachts, and Minder presented his electric cruiser there together with Torqeedo, a German maker of boat engines that's emerged as a leader in the industry. It's done so under the roof of an unlikely owner—heavy-machine engine maker Deutz AG—which bought Torqeedo in 2017 to diversify its more conventional portfolio.

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This year, Torqeedo aims to sell its 100,000th electric engine, most of which power smaller leisure boats. But Torqeedo has its eyes on a bigger slice of the market.

"We expect a lot from ferries and water taxis, and we want to be a player when Amsterdam, Paris, and Venice electrify their fleets," company founder Christoph Ballin said.



Christoph Ballin Photographer: Balint Porneczy/Bloomberg

Monaco has committed to cutting CO2 emissions in half by 2030 and become carbon neutral by the middle of the century. Amsterdam aims to gradually ban all combustion engines, which applies to boats and ships, in a large part of the city from 2025. Paris plans to reach that stage by 2030. Norway wants two thirds of its car ferries to be battery powered by 2030, with a view to also electrify the fisheries fleet, according to Prime Minister Erna Solberg.

"Electric drives are increasingly playing a role for vessels of limited size and for limited distances—on lakes and rivers, and near the coast," said Peter Mueller-Baum, a managing director at Germany's VDMA machinery association. "This could become an important segment, because it theoretically encompasses a large number of vessels."

There are already Torqeedo-powered ships on several continents. In southern Spain, a solar-driven ferry for 120 passengers covers a distance of almost 10 kilometers eight times a day on the Mar Menor lagoon. Smog-plagued Bangkok is readying seven ferries that will operate along the Khlong Phadung canal later this year, and there are also ferries with Torqeedo drives in Dubai, and in Ottawa.

Even Thunberg, the Swedish green activist, turned to Torqeedo technology for her trans-Atlantic traverse in a sailing vessel this month, when several tender boats with electric propulsion escorted her ship out of Plymouth harbor in the U.K.



Solar ferry in Murcia, Spain. Source: Torqeedo GmbH

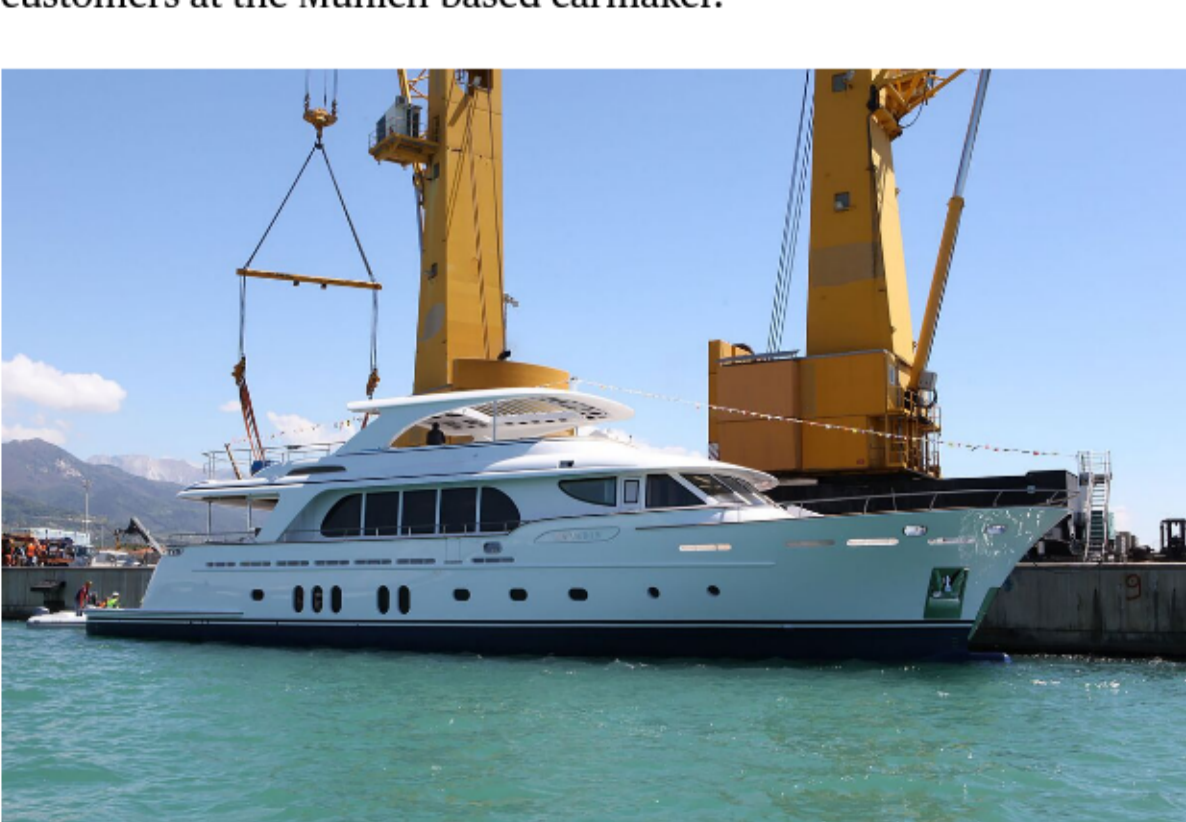
For parent Deutz, Torqeedo is a laboratory to study alternative drives. The company, which has produced combustion engines for more than 150 years, already kitted out a telescopic handler and a small excavator with an electric drive, as pressure mounts from cities and municipalities to upgrade construction machines and reduce emissions and noise.

"Almost all of our customers are more or less intensively looking at electric drives," said Deutz CEO Frank Hiller.

For now, Torqeedo still weighs on its parent company's accounts. Torqeedo's operating loss amounted to 8.2 million euros in the first half of this year, according to Deutz's latest interim report, a deterioration to the previous year's figure because of a 2.5 million-euro provision tied to product recall from faulty batteries.

Torqeedo gets its technology from the road, adapting components from the automotive industry to save development costs and benefit from economies of scale, Ballin said. For example, the power stores for many Torqeedo drives come from BMW.

"The hardware is the same, we only change the software," said Soeren Mohr, who works on electric engines for industrial customers at the Munich-based carmaker.



CCN's Vanadis hybrid-driven superyacht. Source: CCN

The field in which Torqeedo operates is becoming increasingly crowded. German industrial behemoth Siemens AG has equipped ferries in Norway and Finland. In May, Italian shipyard CCN presented an hybrid-driven super yacht with propulsion systems by Siemens and marine specialist Schottel GmbH.

Besides greener credentials, there's another benefit of switching to battery power, said Felix von Borck, co-founder of German industrial battery producer Akasol AG.

"If you own a hundred-meter super yacht or a smaller boat, and you are able to navigate silently and emission-free, you get a better berth."

And in places like Monaco—whether on the crowded landmass or the glitzy harbor below—location is still everything.

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