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High Speed Electric Hydrofoil Boats Are Taking Flight With AI As California Mandate Looms

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Jun 16, 2023, 07:00am EDT

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Navier N-30 electric hydrofoil boat NAVIER

Imagine zipping down the California coast from San Francisco to Los Angeles at a fraction of the time and cost it takes to drive a car. Hopping on and off water taxis to enjoy the beautiful seaside towns of Santa Cruz, Monterey, Big Sur, Pismo Beach and Santa Barbara, with none of the polluting fumes, noise and rocky rides of gas-fueled ships. Add commuting to work for those returning to the office and a revolution in maritime transport might be upon us.

That vision appears to be within grasp thanks to the ingenuity of Bay Area-based startups racing to help short-run commercial ferries meet a California deadline to be [zero-emissions by December 31, 2025](#). In April, the San Francisco Bay Area Water Emergency Transportation Authority, known as WETA, announced it had been awarded a [\\$13.8 million grant](#) to electrify its fleet of ferries. As the agency evaluates its options, startups have been joining the fray to offer solutions.

Flying Ferries of Candela and Navier

Swedish electric boat manufacturer Candela has set up shop in Sausalito and is developing a 30-passenger 40-foot catamaran called the P-12 shuttle that uses foils to lift its hull to “fly” above the waves at 35 miles per hour for up to 60 nautical miles on a single charge. The first of the line is expected to be in the water by the end of summer with ferry service piloting in Stockholm early 2024, according to project manager Veronica Cargay.

During a test ride of Candela’s 28-foot C-8 speed boat, I barely felt the three-foot swells as the boat sped through the notoriously rough chop under and beyond the Golden Gate Bridge.

Candela founder and chief executive officer Gustav Hasselskog and flight control engineer Kristian Sloth Lauszus explained that AI plays a key role in ensuring a smooth ride. Algorithms predict how

waves affect the boat's movements with sensors that make a hundred adjustments a second to keep the foils stable in roll, pitch and yaw. AI is also instrumental in expediting simulations during product development and flagging parts that need servicing for maintenance.

Hasselskog founded the company in 2014 in search of a climate-friendly, cost-efficient way to ferry his family around the Swedish archipelago during summer outings. In 2019, Candela released its first model, the C-7, as a luxury recreational boat and in 2021 introduced its second model, the C-8, which now offers an extended battery in partnership with Polestar, a Volvo company.

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In 2020, Alameda-based electric hydrofoil boat manufacturer Navier burst onto the scene, cofounded by MIT engineer and roboticist Sampriti Bhattacharyya who was named [Forbes 30 Under 30](#) in 2016. The company has since racked up more than \$10 million in seed capital from high profile backers including Google cofounder Sergey Brin and the Sustainable Ocean Alliance funded by billionaire philanthropist Marc Benioff, according to Bhattacharyya.

With Silicon Valley splash, Bhattacharyya has been busy entertaining celebrities the likes of pop star Grimes on board the company's new cabin cruiser variant, the N30 Transformer, a 30 foot recreational vehicle that can taxi eight passengers at a top speed of 35 knots (about 40 miles per hour) and max range of 75 nautical miles, according to its spec sheet. The boat boasts twin engines to allow for sideways navigation which Navier's chief technology officer Kenny Jensen demoed for me during a test ride.

The former Googler, who worked on Larry Page's Kitty Hawk, an electric vertical-take-off-and-landing aircraft, said the main reason he jumped at the chance to work at Navier was that time-to-market for flying boats was significantly faster than for flying cars, with less regulatory hurdles and ample waterways to alleviate auto traffic on congested roads.

"This is something that's going to happen in the next few years, not decade," he said.

Grimes 

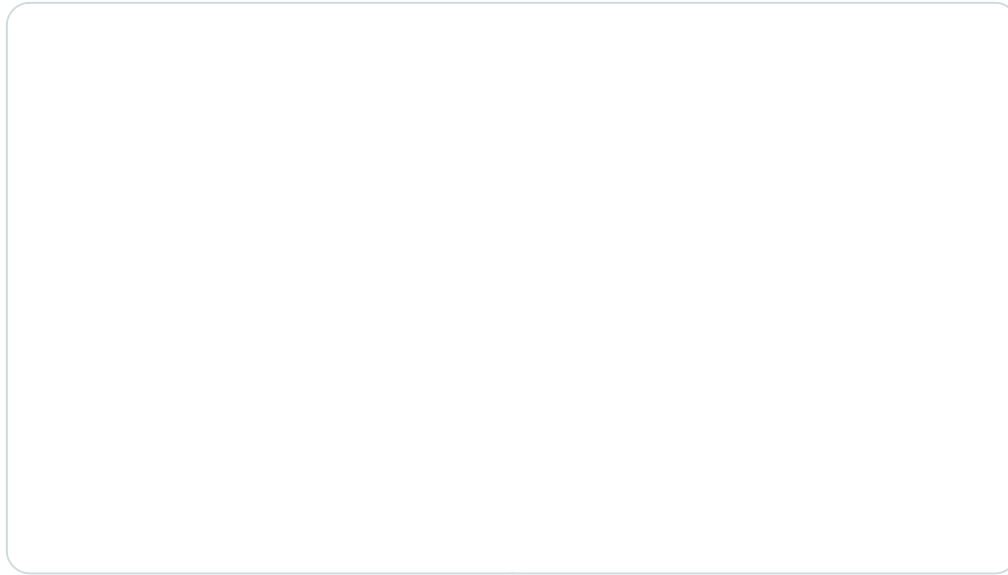
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All Boats Float

In pursuit of meeting the state mandate, others have entered the space like [Green Yachts](#) which has been working with the [Angel Island-Tiburon Ferry Co.](#) to electrify its short-run vessel. Although Candela and Navier are in various stages of scaling production, both have said they welcome more players and remain excited about the potential for the endeavor.

“The waterways are vastly underutilized in the Bay Area. Older gas-fueled ferries are slow and sporadic and as a result don’t have sufficient demand to fill the ships, some built to transport hundreds of people,” said Cargay.

“With smaller boats, you can charge them quicker and increase timetables to run higher ridership more frequently,” she said.

“Electrification will be a game changer for San Francisco.”

As for autonomy, it's coming, Bhattacharyya assured.

“Autonomous boats on the water is a much easier problem to solve for than autonomous cars on the road as there are fixed routes from marina-to-marina and a clear way to do it which is safe, reliable and repeatable,” she said. “In a couple of years, we should see full end-to-end autonomy.”



Candela P-12 Shuttle render CANDELA

Updated paragraph 12 as Candela has confirmed it has started in-house production of its P-12 shuttle.

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