

India

2018 - 2021

Public Private Partnership



2020 AltFuels Committee President Hartmut Ginnow-Merkert from Berlin, Germany, and supervised by Dr Frue Cheng of Taiwan, focussed on envisioning the use of solar power in the area of eco-tourism, by means of designing solar-powered houseboats for three different countries, one of which was based on the traditional Kerala rice boat.

2013 Sandith Thandassery, a naval architect who graduated from IIT-Madras founded NavAlt Solar & Electric Boats Pvt. Ltd headquartered at Kochi, (also known as Cochin), a city in southwest India's coastal Kerala state. His vision was to transform marine transport more efficient by drastically reducing the energy for its operation. Having built a 20-seater solar boat for a tourism operator in Bhatinda in Punjab, Thandasherry collaborated with Alternative Energies of La Rochelle, France to make a 40 kW, 75-pax solar ferry for Kerala



The Aditya carries 110,000 passengers per year with a fuel cost of \$2.50/ day

State Water Transport Department (KSWTD) for operation on Lake Vembanad between Vaikom and Thavanakdavu.

In November 2013, after attending the trial run of the *Aditya*, India's Transport Minister A.K Saseendrank said the Government was planning to operate at least one solar-powered boat each in every district, eventually a fleet of up to **50** vessels. *Aditya*, used in the singular means the Sun God, Surya.

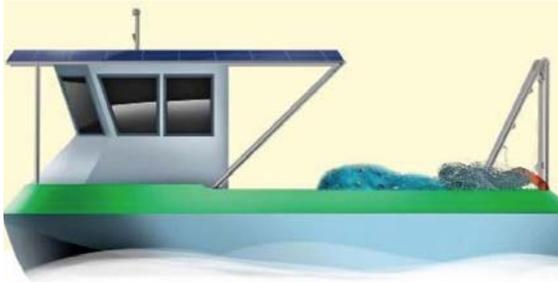
2020 By 2020, *Aditya* had transported over 110,000 passengers and a totted up a distance of 70,000 km (22 daily trips, carrying a maximum of 75 passenger per trip), without relying on a single drop of fossil fuel. It thus saved KSWTD over 100,000 litres of diesel, worth approximately ₹75 lakh. *Aditya* uses a meagre ₹180 per day as energy cost, as opposed to approximately ₹8,000 that would be required for a diesel-run ferry of similar size.

Thus encouraged, Kochi Metro Rail Limited (KMRL), the Government of Kerala, and German funding agency KfW signed an agreement with the Cochin Shipyard to build **twenty-three** 100 pax hybrid-electric ferries and the remaining fifty-five ferries to have 50 seats, several of them double-deckers.

The vessels will run for up to one hour on fully electric mode courtesy of a propulsion system equipped with a lithium titanium oxide battery, which can be fully recharged in as little as 15 minutes' time.

The project will cover 16 routes in the Greater Kochi area, connecting 38 terminals across 10 island communities, across a 78-km channel length. The

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NavAlt is now building fishing and patrol boats

first batch of ferries are slated to operate on Vyttila-Kakkanad route from 2021. *Aditya* was a game changer in Kerala's water transport sector, so much so that ambassadors and officials of over 40 countries flew down to check it out.

One delegation from the Andaman and Nicobar Islands in the Bay of Bengal has commissioned two 1,200 pax electric ferries to operate between mainland India and the islands. The 1,200-passenger ferries is part of a four-vessel order that also includes two 500-passenger ferries. When, in July 2020, *Aditaya* won a Gustave Trouvé medal in the Plugboats.com online voting contest, its success was published across the Indian Media and read about by over 5.5 million readers across the India Continent.

2020 Kerala is also an example of how an AltFuel marine success can have a knock-on effect: Steps are also being taken to increase the number of electric vehicles in the State to bring down pollution. Efforts are being made to roll out 6,000 electric buses by 2025. E-autos too will be introduced on a larger scale (a dozen of them operate in Kochi now). In the wake of the threat posed by COVID-19 where studies showed that air and water became cleaner following the lockdown, steps are being taken to encourage planting of fruit trees and afforestation. A total of 1,000 acres under local bodies were converted into green zones by July 2020.