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# Transfluid: sustainable boating between electric and hydrogen

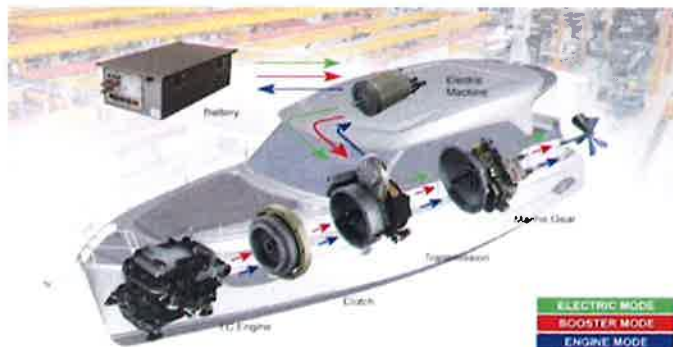
BY EDITORIAL STAFF

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BY [EDITORIAL STAFF](#) FEBRUARY 23, 2022 10 MINS READ

When thinking about a replacement propulsion system for your work or recreational boat, and perhaps thinking about a hybrid or fully electric system, the name Transfluid immediately comes to mind.

Transfluid-Bellmarine is a leader in the production of turnkey systems for electric propulsion, its strengths being: simplicity, speed of installation and ease of use, for both new and existing boats.



The range developed to date offers customers different sizes and transmissions up to 260kW. The electric motors used, exclusively "made in Italy", are new generation, high performance permanent magnet motors.

The various transmission solutions are the most reliable offered on the marine market today, thanks to more than 60 years of production, sales and service all over the world, through subsidiaries in China, Russia, France, the Netherlands, the United States and 50 distributors.

Electric navigation offers a number of advantages: absence of noise and vibrations for silent navigation, absence of exhaust gases for less pollution of the environment, high efficiency with lower energy consumption, reduction of wave motion, which is particularly severe in inland waters, and improved manoeuvrability thanks to the nominal performance guaranteed at all speeds.

More specifically, Transfluid-Bellmarine's SternMaster system consists of a Mercury "Alpha One" Stern drive transmission powered by a high-efficiency permanent magnet electric motor, available in air-cooled and liquid-cooled versions, in various sizes up to 97kW. The SternMaster system is compact and stylish for inboard propulsion enthusiasts looking for "silent & green" cruising.

Transfluid's marine division supplies certified products with approvals from DNV, Lloyd's and RRR registers, including LFP batteries, electric machines, hybrid modules and marine transmissions.

Transfluid can boast a number of important successes that are part of the green revolution in the boating industry, which is eagerly awaited by those who really care about ecology and the marine environment.

Among the numerous installations we can mention a few:



#### **GOA: the passenger ferry**

The 20m passenger ferry that will operate in Goa (India) to and from the nearby islands is a catamaran equipped with two fully independent inboard electric propulsion systems.

Specifically, this vessel is equipped with two 130 kW ShaftMasters, with two 200Ah lithium battery banks, which can also be recharged during navigation by solar panels and on-board generators.

#### **Rotterdam: the water taxi**

The electric water taxi in Rotterdam, the Netherlands, is a perfect example of how Transfluid has established itself in this segment in recent years.



The first of a fleet of six taxi boats launched about a year ago, it can carry up to 40 people and is equipped with two DriveMaster 20W electric motors from Bellmarine-

Transfluid. The boats will be responsible for all passenger transport by water in Rotterdam and Schiedam in the Netherlands.

Above all, it represents the winning choice of the City of Rotterdam, which will thus be able to meet its environmental sustainability targets, aiming for a totally green fleet of water taxis by 2030.

### **Paris: a new electric boat for the Seine**



Two electric passenger boats are operating on the Seine in Paris. The boats can carry up to 12 people plus the skipper and have a range of 24 hours. They are 8.30m long and 3m wide. Propulsion is provided by the Bellmarine/Transfluid electric system with two 15kW

SailMaster 15W, water-cooled and powered by lithium batteries.

Silent navigation allows the boat to travel at an average speed of 15km/h along the canals of Paris without being disturbed by engine noise. A new way of enjoying the city's beauty.

### **Amsterdam, the Stromma case**

Stromma is one of the oldest shipping companies in Amsterdam and today one of the largest international shipping companies with an environmentally sustainable fleet, present in all Northern European countries, making passenger transport on the canals unique.

Transfluid with its Bellmarine systems participates with Stromma (and all major passenger transport companies in Amsterdam and the Netherlands) in the transition to environmentally sustainable passenger mobility and quality tourism.



With its powerful DriveMaster 55W, Stromma's new and existing passenger boats can navigate the canals of major European cities in silence, respecting the environment and current and future European legislation.



## Transfluid in the yachting sector: sailing and motor-powered boats, catamarans and trimarans

As for the yachting sector, there is a French boatyard that has brought Bellmarine-Transfluid electric power aboard its trimarans, the famous NEEL 56 and 72. The boats feature two liquid-cooled 15kW DriveMaster electric motors mounted on the outer hulls and a heat engine positioned on the central hull, allowing propulsion to suit all sailing situations and schedules. Manoeuvres are smooth and the maximum speed reached by the trimarans is almost 7kn and noise-free. Emissions harmful to the environment are, of course, drastically reduced.



NEEL trimarans sail at a cruising speed of almost 5 knots. This is achieved with the support of the ONAN Genset, a system capable of guaranteeing extended autonomy over time, also thanks to the 48Vdc lithium battery system, used not only

for propulsion but also for on-board services.

What's more, Bellmarine systems are also maintenance-free and have compact dimensions that allow them to be installed even in tight spaces.

The Windelo 50 sets the standard for a fast and environmentally friendly cruising catamaran. This yacht is equipped to cruise the ocean leaving zero carbon emissions. Windelo catamarans are fitted with two Bellmarine DriveMaster 20W EVO electric motors.

The Esperance III is a historical sailing boat, 18m long with a displacement of 25t, operating in Lake Annecy (FRA) for cultural, scientific and educational purposes. The propulsion system has been completely replaced by a pair of ModularMaster 40W coupled to the Transfluid marine gearbox model DP280.



The boat reaches a cruising speed of 8kn with half the power installed, thanks to the high mechanical efficiency that the Transfluid system offers.

The special feature of this solution is that each system has two electric motors and two motor controllers, which allows for redundancy on board even with single engine propulsion.



The Jeanneau NC37, a recreational motorboat sailing on Lake Balaton in Hungary, is also an excellent example of successful installation.

Here, propulsion is provided by two SternMaster 35W systems and 200Ah

battery banks, which provide a total of 70kW for silent navigation, without emissions and noise, in harmony with the surrounding environment.

The Transfluid inboard electric solution offers all the advantages of this type of transmission, while taking up very little space in the engine room, thanks to the small size of its permanent magnet motors.

## Hydrogen also matters

But Transfluid's list of successes does not end there. The company has teamed up with fuel cell specialist and leader Genevos for a zero-emission propulsion package.

**is a valuable partnership because it contributes to the “acceleration of sustainable mobility”, Transfluid explain, describing what will be “the provision of a turnkey electric-hydrogen propulsion system based on certified maritime technologies”.**

In detail, the proposal includes Genevos’ recently AiP-certified range of hydrogen power modules (HPM) and Transfluid’s specialized integration services, namely batteries, permanent magnet electric motors and transmissions, all certified for the marine industry.

This news further paves the way for the hydrogen energy transition in the maritime sector.

Among other things, the partnership – the company explains – adds to the selection of Transfluid DNV-approved batteries from Genevos to be integrated with their HPM as part of the £2.2 million HIMET (Hydrogen in an Integrated Maritime Energy Transition) project to provide a zero-emission auxiliary power solution, which will be tested on board a RoRo ferry in Orkney in the coming months.

*Ugo Pavesi, CEO of Transfluid commented enthusiastically on his company’s giant steps forward. Real steps towards an increasingly green boating industry: “Hydrogen is one of the most promising zero-emission fuels to avoid polluting the air we breathe every day. Our partnership with Genevos,” continues Mr. Pavesi, “allows us to combine our experience with certified, proven and advanced technologies to meet the zero-emission maritime needs within the global market.*

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