

Hybrid and 100% electric propulsion systems

AN Trade & Consulting

TRANSFLUID industrial and marine- SPAIN & PORTUGAL



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AGENDA:

- Transfluid industrial and marine.
- Experience in green solutions.
- Why hybrid?
- Success story: Oceanographic vessel for Universidad de Vigo.
- Hybrid oceanographic vessel.
- Serial 100% electric serial system.
- ANT&C as distributor of Transfluid.
- Questions.

Transfluid industrial & marine

Transfluid is a market leader in power transmission equipments since more than half a Century.

90% of sales go to export



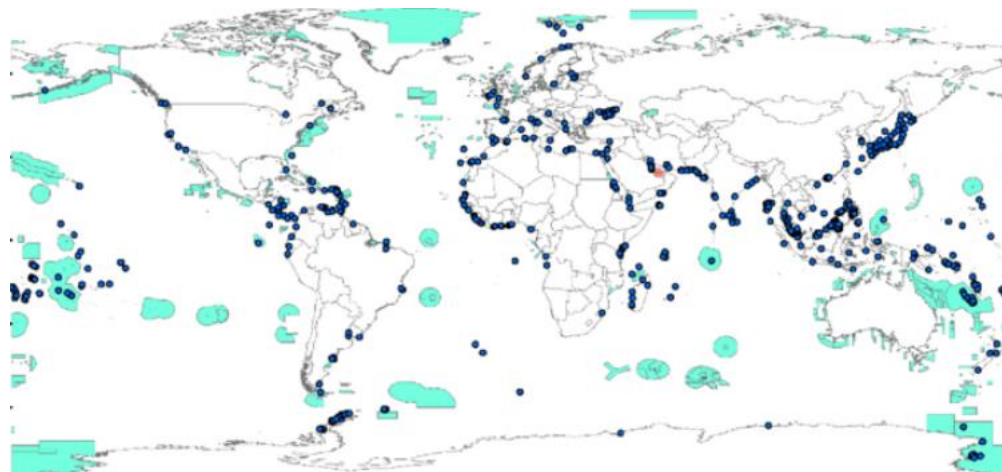
Transfluid produces a wide range of products for Electric motor and Diesel engine driven machines market:

- Constant fill fluid couplings.
- Variable fill fluid couplings.
- Brakes and Clutches.
- Flexible couplings.
- Pump drives.
- Powershift transmissions.
- Electric Machines.
- Electronic Management Systems for own products.

Experience in green solutions

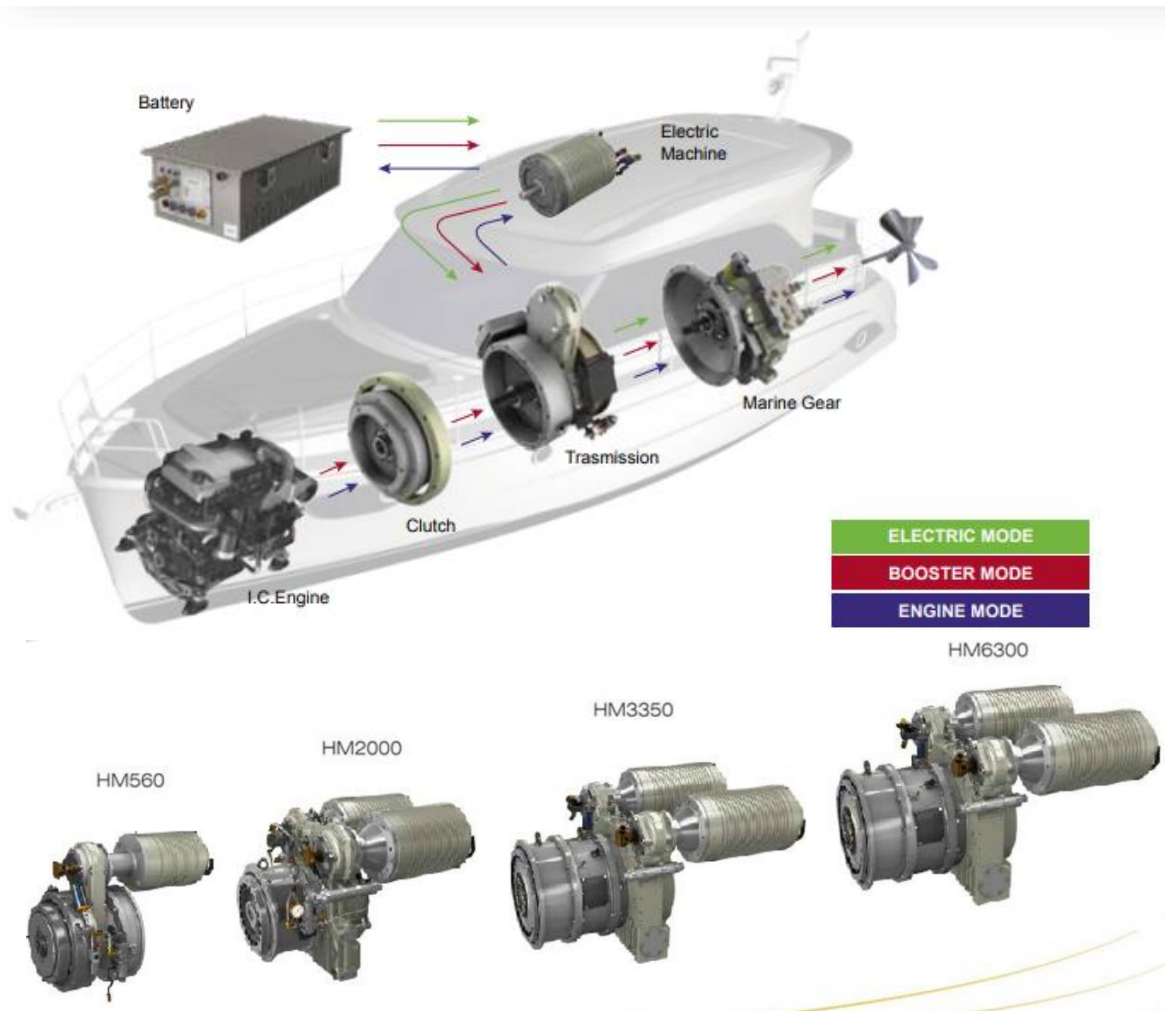
Again, world is fast moving in green economy. Sustainable solutions for marine industry are becoming more and more requested, specially in Europe with the reduction of emissions strategy for the coming years. What will boost the market are restrictions and incentives, mainly focused in precise areas or circumscribed situations, for now.

- Protected marine areas
- Urban areas such as Venice
- Near to the harbors
- Inland waters
- Fishing farms
- Offshore plants



We are helping the customer to meet this requirements and comply with the restrictions with more than 150 success projects in Europe, North America and Asia.

Why Hybrid?

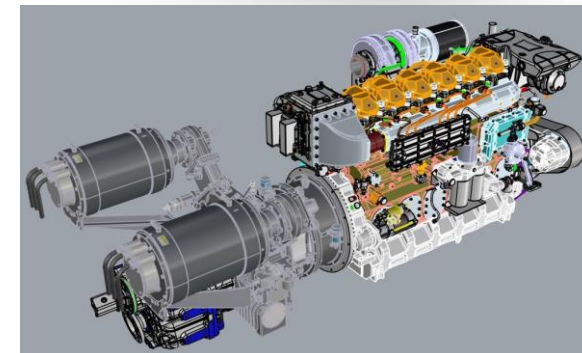


Hybrid solution is the **perfect match** between traditional combustion engine propulsion and new green and silent need required by the ongoing cultural and economic progress. The World is slow to adopt electric/hybrid technology, here are the main advantages:

- Integrates with all main engines and marine gears
- Zero emissions, no smoke, noise or vibrations
- Much better comfort and working conditions onboard
- Fuels saving by reducing the operation hours of the Diesel engine
- Reduced service costs of the Diesel engine
- Reduced engine duty rating
- Full aftercare service
- Retrofit ready
- There is not a diesel – electric system

Success story: Oceanographic Vessel Universidad de Vigo

- Shipyard: RODMAN POLYSHIPS
- Shipowner: Universidad de Vigo
- Total Length: 19,50 m
- Max beam: 5,10 m
- Max Crew: 12
- Propulsion system: hybrid HM3350-150kW
- Diesel engine: Baudouin 6M26.3 (599kW@2100rpm)
- Max Speed: 15 knots
- Cruise Speed: 12 knots
- Max Speed in 100% electric: 9 knots



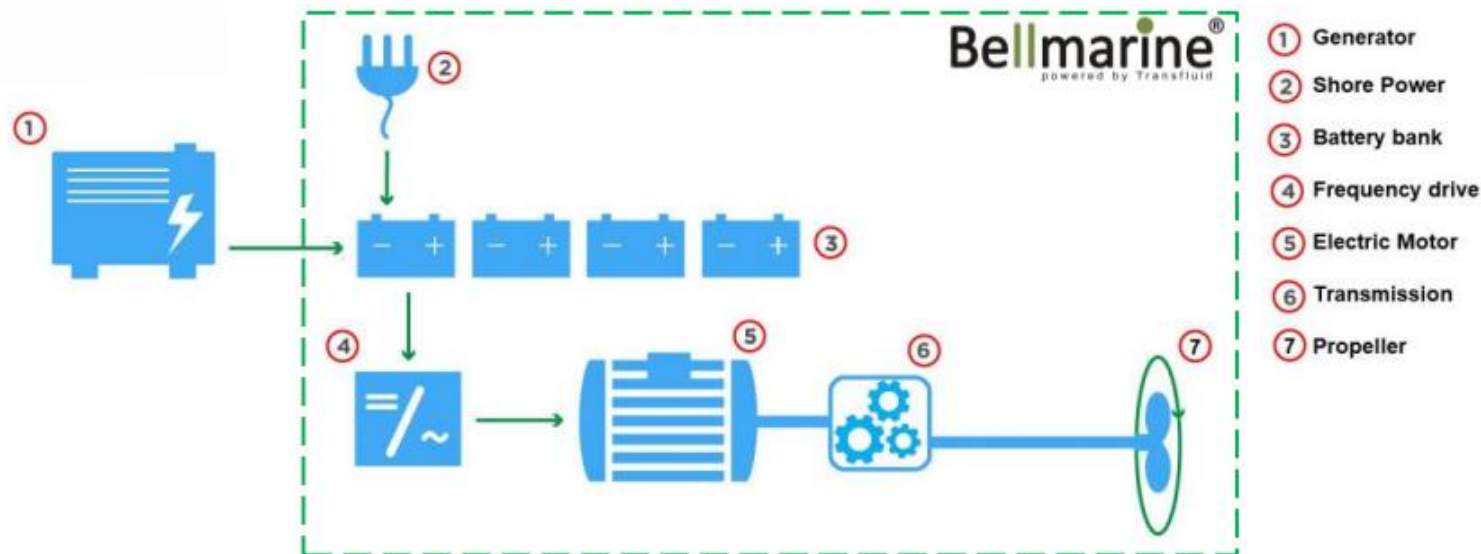
CIM - UVIGO

- Electric Propulsion – to drive or sail at zero emissions.
- Engine Propulsion – using the electric machine as a generator to recharge batteries. Range of power up to 1700Hp per line.
- Booster – allowing the electric motor during acceleration to assist the Diesel engine. (Additional power source) – to power other auxiliaries such as: hotel loads, pumps etc.
- First of its vessel type in the country.



Serial Propulsion – 100% electric

- Plug and play system.
- Integration of the full propulsion system.
- Bellmarine leading in electric motors.
- 90% of the Netherlands market.
- Possibility to install a generator for recharge.
- Possibility to connect to shore power.





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ANT&C – AN Trade & Consulting

- More than 15 year of experience in the marine business.
- Complete solutions for propulsion systems.
- Studies of consumptions and duty cycles.
- Development of technical solutions according to specific solutions for each customer needs.

CONTACT US!

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Questions?

Thank you!