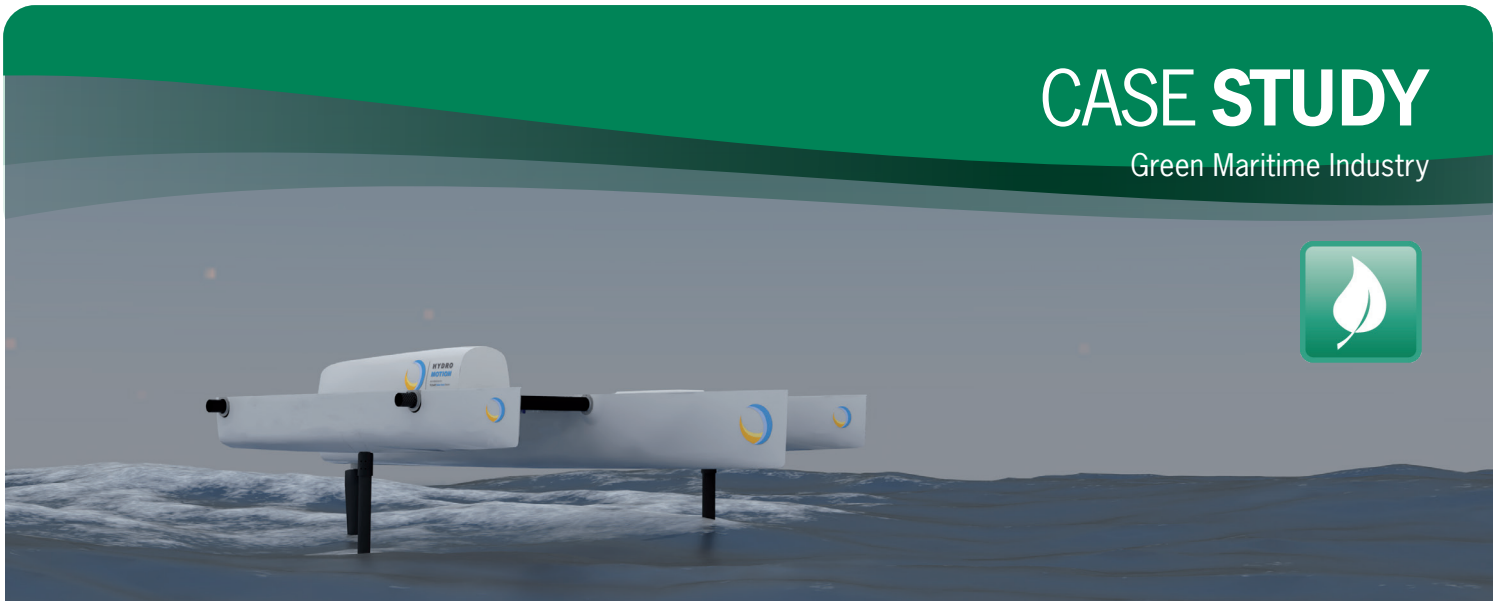


CASE STUDY

Green Maritime Industry

Partnership with:
Technical University Delft Solar Boat Team

Location
The Netherlands

Date:
2021

Sector:
Green Maritime

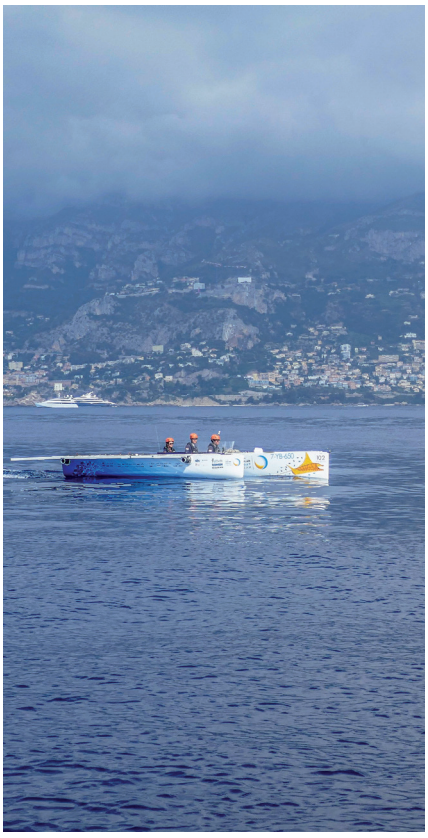
TU DELFT SOLAR BOAT TEAM PROMOTES RENEWABLE ENERGIES IN THE MARITIME SECTOR WITH HELP OF CAMFIL‘S AIR FILTRATION TECHNOLOGY

HYDRO MOTION - A REAL POSSIBILITY WITH GREEN ENERGY

ABOUT THE PROJECT

The Technical University Delft Solar Boat Team is one of the 'dream team‘ of the university. The team consists of 21 ambitious students who will go through the process of designing, producing, and finally racing a sustainable boat that runs on green energy.

This project allows the students to gain practical experience and learn what it is like to work together in a multidisciplinary team towards an ambitious goal. With this team, TU Delft shapes the engineers for a sustainable future.
In 2021, the team is building a boat that runs on hydrogen. The project is called **Hydro Motion.** Hydrogen is ideal for storing green energy and has enormous potential. This will inspire the entire maritime industry by showing what is possible with a hydrogen boat. Together we can take the necessary steps towards sustainable shipping.



SUSTAINABLE FUTURE

With this project, the TU Delft Solar Boat Team works together with the maritime sector to accelerate the transition to green energy. There is still a lot to be gained in this sector and by thinking together with the maritime world and innovating in the field of sustainability, the team contributes to a better and greener future. Because only together we can make a change.

“Encourage the use of renewable energy to move towards a sustainable future”

CASE **STUDY**

Green Maritime Industry

PROBLEMS AREAS IN MARINE ENVIRONMENT

Sea salt, water droplets, humidity, and dirt can wreak havoc in a marine environment and threatens the operation. The air filtration systems protect valuable equipment and people. Filtration systems need to filter corrosive contaminants like supersaturated salt crystals at sub-micron levels while facing strict weight and space restrictions.

CAMFIL'S CUSTOM SOLUTIONS

Camfil offered compact, robust construction tailor-made filters for TU Delft Solar Boat that are;

- Aerodynamically optimized
- Outstanding airborne salt particle resistance that minimizes equipment corrosion
- Low inlet pressure loss for increased power and reliability
- Energy-efficient, long-life to help reduce maintenance and associated costs
- Ensure process reliability, efficiency, and lower total cost of ownership
- Quality certified under **ISO 9001** and a **Security Certificate Contractor (SCC)**

OUTSIDE THE BOAT

Filters for the air intake of the fuel cell
Waterproof air intake - a custom CamVane will be installed to capture large amounts of water.

About CamVane
The CamVane is made of specially designed profiles which effectively capture the water droplets from the air stream along with corrosion protection.

INSIDE THE BOAT

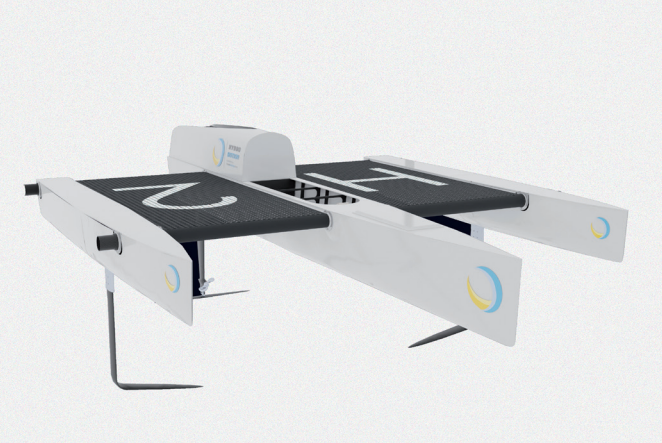
Ventilation filter - a custom CamClose and custom CamGT filter will be installed to capture moisture, salt, and particles and to blow in absolutely clean air.

About CamClose
The CamClose panel filter is primarily used as a pre-filter to extend the service life of final filters by offering low initial pressure drop and high dust capacity. The filter is specially suitable for applications in humid conditions, like tropical and coastal installations.

"Custom-made CamClose here will act as a coalescer – to catch and drain out any small water droplets that pass by the CamVane. This minimizes the amount of water that reaches the final filter and thereby also the risk that any water will get pushed through the final filter or the final filter sealing to the duct in the long run."

- Kenny Hedlund, Director R&D Europe, Camfil

About CamGT
CamGT is a high efficiency, incinerable compact filter with heavy-duty design, guarantees optimum protection under the most demanding operating conditions.



"Camfil's technology and product design specifically befits with our project. The filters are custom-made for the solar boat and fit down to every millimeter that allows us to protect our fuel cell from salt and seawater while sailing. As a partner, Camfil is very considerate, innovative in terms of solutions and exceptional with speedy delivery."

- Gerard Wiegersma, Engineer,
Technical University Delft Solar Boat Team

"Camfil appreciates the collaboration with TU Delft, a leading university within the Netherlands that values innovation. On many levels, there were similarities in visions between Camfil and TU Delft which made this collaboration a successful one. TU Delft's ambitious Hydro Motion project was a good challenge for Camfil which we were more than happy to support. Our custom-developed air intake filters will hopefully help bring success to the Solar Boat Team."

- Pascal Raaijmaakers, Sales Manager,
The Netherlands, Camfil