



12th Environmental Symposium

23rd March 2023

Urging a more responsible yachting industry through alternative energy sources, innovation and collaboration

Thursday 23rd March 2023. *"Yachting is not like any other industry. There is a passion associated that is very strong and we must keep this in mind to find acceptable solutions. We need to build the future of yachting in a reasonable way. And that is the whole point of us all being here today,"* began **Bernard d'Alessandri, YCM General Secretary and President of Cluster Yachting Monaco** opening the **12th Environmental Symposium**. Organised under the collective Monaco, Capital of Advanced Yachting brand on **Yachting Day**, run by YCM during the 6th Monaco Ocean Week, the meeting focused on the upcoming 10th Monaco Energy Boat Challenge.

The over-arching objective is to open the debate by mixing industry players with students to highlight actions being taken. Alternative energy sources, innovation and efficiency anchored discussions on sustainability in the sector and need to involve not only new generation engineers but the whole industry.

Electric and hybrid power, a solution for the future?

If all new superyachts were to produce zero emissions, the 12,000 boats existing would still have to reduce their emissions by 65%. And all, including the new ones, would have to reduce their combined emissions by nearly 80%. But how to get there? In terms of environmental awareness, protecting natural resources and impact on the environment, the scenario has changed. Faced with all the possible combinations, it's not easy to work out which propulsion type or combination is the most effective for the shipping industry, particularly yachts which have their own specificities. Many electric and hybrid engines have been developed and appear to offer promising solutions, like Vita Yacht which is developing fully electric powertrains and boats. *"Our mission is to replace combustion engines in the maritime sector with electric power,"* says **Rory Trahair**, CEO of Vita Yacht.

The yacht as a whole

Paving the way to an innovative future was the leitmotif of all industry players who spoke, not just on energy but other aspects, the Diamond company being a prime example. Its submerged hulls and trochoidal thruster system increases a vessel's performance by 40% and reduces underwater noise pollution. **Eric Magré**, Technical Director & Associate Founder of the startup, explained how the company is working on a system combining propulsion and stability: *"This solution improves performance but also reduces seasickness as the boat is totally stable, regardless of the conditions. To achieve this objective, the main issue for us is how the yacht will be used in order to assess the best technology"*. It's not just about power sources but hulls, materials and a host of other elements that will turn today's boat into the yacht of tomorrow.

Among other solutions presented (Foil, Prao, catamaran...), of note is development of an ever-increasing number of more efficient catamarans, with foils no longer limited to small boats but which can be adapted to larger cats to provide "lift" and reduce drag, as naval architect Espen Oeino pointed out.

A future without concessions

Sailing Yacht Zero, presented by Marnix Hoekstra, Co-Creative Director at Vripack and Kees Jan Foster of the ZERO Foundation is a yacht under construction with no-concession specifications regards sustainability or disruption at the core of its design. This collaborative approach in open source has enabled them among other things to rethink the design and solutions used on this boat, such as heat recovery from solar panels.

New generation as guardian of sustainability

More aware and better informed, the new generation undeniably has the eco-bit between its teeth. Being at the forefront of global warming, engineers like **Thomas Grosjean** were born with this problem in mind and are not short of ideas. He was on the start of the 6th Monaco Energy Boat Challenge in 2019 and now works for Helion Hydrogen Power as the Marine Fuel Cell Engineering Manager: *"Our generation has a lot to change and need to modify everything and work on propulsion, hulls, structures, materials and power sources. We must take it step by step to develop technologies with manufacturers and owners among others"*.

Sustainability is the common denominator for these young professionals as **Mattia Valitutti**, Vice President Operations of Swiss Solar Boat - EPFL reminds us: *"As far as our school is concerned, it's the norm. We even have courses on the topic to teach us and give us essential information on climate change and the environmental approach we must adopt"*.

Evaluation tools for the maritime industry

There is a whole ecosystem of tools to work on data produced by the yachting sector, from design to usage. Launched in 2020 by Yacht Club de Monaco and Credit Suisse, the SEA Index® is a tool for yachts over 40m to assess their CO2 emissions, propulsion systems and generators. *"The idea is to move collectively forward in the same direction. Today is one of those moments when we can discuss ideas and innovations together and understand fully the choices that have to be made,"* says **Natalie Quévert**, Sea Index® Project Manager. The range and accuracy of this tool includes a typical operational profile of a yacht (cruising time, time spent in dock or at anchor), average speed and ability to assess hybrid and battery propulsion. Innovative auxiliary power features can also be taken into account.

"You really need to understand the data before making any design decision, is what we tell users," says **Ollie Taylor**, Associate Director, Anthesis Group, MarineShift360. *"Calculations are crucial. The industry is taking the situation very seriously but things are moving slowly. Some are ignoring the reality but that's useless. We face a massive transition and have a moral obligation to do something now"*. MarineShift360 uses pre-defined evaluation templates to capture data, so the tool can calculate the environmental impact in seven categories via a database.

Partnering for a more responsible yachting sector

The key to success is to gather skills from all sectors as **Scillard Czibere**, development engineer at Shipping Lab, explains: *"That's why our research and innovation network numbers 40 partners, 29 companies, five universities / naval academies, six associations and agencies plus a research cluster focused on digital ship operations"*.

A demo of this collaborative approach was presented to conclude the morning's debates by the Institut auf dem Rosenberg with the screening of the young generation nomadic boat of tomorrow. Working with industry they are developing a boat with innovative sustainable solutions which greatly inspired all those present.

The key therefore is to tackle the issue as a whole with a design that considers propulsion, structure, hull and materials in a way that enables industry players and beyond to get involved in a change that has already begun. New energy sources and innovations will again take centre stage at the **10th Monaco Energy Boat Challenge, 3-8 July 2023**.

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