Floating Future Seminar and BlueWeek success

Seminars and workshops spark innovation

‘Better Ships, Blue Oceans’ is our credo. To achieve this, we are starting up research projects together with the industry, research organisations and institutions.

We want to contribute towards a more sustainable use of our oceans. Oceans where energy will be harvested, oceans that will host sustainable activities, oceans that will carry zero emission transport and oceans that could inspire smarter engineering solutions.

This year we organised two events that were both attended by more than 150 people: the ‘*Floating Future Seminar*’ and *‘BlueWeek*’.

The Floating Future Seminar highlighted the potential of the multi-use application of floating islands, while BlueWeek dealt with renewable ocean energy, the multi-use of offshore assets, zero emission shipping and nature-inspired solutions. BlueWeek also hosted different workshops, which challenged the participants to identify promising technologies and to anticipate how these could be put into practice.

Both events saw open and lively discussions and several trends and upcoming challenges were identified.

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Floating islands The significant potential of combining activities on floating islands was broadly accepted, despite the technical challenges. For example, consider bringing production plants and the maintenance of wind turbines close to the wind parks, creating nearby settlements for personnel and an energy hub to store the energy produced and a facility to distribute it directly to ships or container terminals. The dilemma between land reclamation in shallow water areas offshore and floating islands was also discussed.

Multi-use in sustainable offshore activities
One of the most important trends in the ocean energy sector is the possibility for multi-use applications of wind parks, for example by combining them with aquaculture (mussels, seaweed) or floating solar farms. Concepts to rethink and optimise current wind turbine monopiles were proposed, whereby they should be designed for multi-use applications from the beginning. The risk management of wind park energy production, their impact on ecology and ecosystems, as well as the socio-cultural impacts were also brought forward. Moving traditional, land-based activities offshore and mixing them with sea-based activity would require understanding and consensus between all the parties. These themes were particularly highlighted within the North Energy Lab initiative and the Periscope Interreg project. Furthermore, installations of additional assets within the wind parks were discussed: consider offshore data centres, the local production and storage of hydrogen, charged battery packs’ containers or biomass production out of seaweed!

Zero emissions – nothing more The current focus now is not on reducing emissions but on not producing any emission. This is a massive game-changer that will impact the entire energy chain. The widely shared conclusion was that all the technical components exist today to transport goods without emissions, from prototypes to commercially available products. Electric power sources, originating from batteries or fuel cells/hydrogen combinations were the most promoted solutions. But despite the availability of all the necessary technology, new energy storage infrastructure and energy distribution is still the most challenging item to solve right now, and this will require a perfect cooperation between public institutions and private companies.

Onboard systems will also evolve and require different types of competences, which will be a challenge for the maritime sector. The route for the implementation of full electric propulsion, mostly by a fuel cells/H2 combination, was clearly identified: inland shipping and the development of combined bunkering on strategic spots where canals and highways cross each other, short-sea shipping within European waters, and ultimately ocean transport.

Maybe one of the most important milestones is the involvement of cargo owners to help the maritime sector realise this transition and consumers will also have to accept that they might be paying a slightly higher price for goods.

Winds of change The use of wind to fully or partially propel ships is at a tipping point of being accepted and implemented as a credible and reliable device to reduce energy use. The diversity of working prototypes and concepts developed for short-sea transport has reached a critical mass that marks the maturity of this sector.

Smart drones, high-tech controls and propulsion systems Inspired by the wonder of nature, exciting techniques used in flight control, sensoring and autonomy of marine drones were presented. Autonomous Underwater Vehicles will surely benefit from such techniques, as well as control techniques for course keeping or station keeping operations. Propulsion systems were also challenged by body deformation strategies used by marine mammals.

Both of these events highlight the importance of working together to stimulate innovation and smart solutions if we are going to achieve the ultimate goals of having sustainable oceans and zero emission transport. Visit BlueForum.org for presentations, sustainable projects and news on upcoming events.