

## Focus

### ON THE WAY TO GREEN SHIPPING



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AIDAnova is the name of the first ship of the new Helios-Class that can run on LNG.

MAN, MTU and WinGD, is fully committed to the resolutions of the World Climate Summit held in Paris in 2015. Consequently, global warming is to be limited to less than 2 °C compared to preindustrial levels. Net global greenhouse gas emissions should be reduced to zero in the second half of this century.

#### The aim: Climate-neutral shipping

“Through the climate summit, the global community has set a clear course for a carbon-neutral world. In this context, the engine industry in the VDMA is focusing on the maritime energy transition towards climate-neutral and clean shipping,” says Müller-Baum, summarizing the core demand of the “Maritime Energy Transition” dialog paper.

#### International regulations

It is important to the authors that CO<sub>2</sub> emissions are reduced worldwide. In order to achieve this, market-based instruments for shipping should be introduced, for example. Regarded per ton of transported goods, a ship’s CO<sub>2</sub> emissions are significantly lower than those of a truck or aircraft for example, Müller-Baum explains. “But,” he adds, “emissions from air pollutants such as soot particles, nitrogen oxides and sulfur oxides are partially higher in the shipping sector.” And this has to be changed: VDMA and large-engine manufacturers are therefore striving to reduce the impacts on the climate and the level of pollutants caused by the shipping industry. Here, the maritime economy is also dependent on international politics. Therefore, the engine manufacturers would like for improved state of the art technology to be implemented through internationally binding regulations.

According to the dialog paper, it is fundamental that the political provisions are focused on the desired goals and do not propagate certain technologies. Although electric drives are gaining ground, it is unrealistic that large tankers could be driven across oceans by electric motors alone. Accordingly, the shipping industry is imposing its own technological requirements and limits, which must be taken into account by politics, emphasize the authors of the paper.

#### Replacing fossil fuels step by step

Whether gaseous or liquid, synthetic fuels are needed in order to achieve climate goals: experts like Lars Mönch from the Umweltbundesamt (Germany’s environmental protection agency) and the VDMA are sure of this. “The set climate goals can only be achieved with power-to-x,” says Mönch, who is responsible for pollution reduction and energy saving in the transport department at the Umweltbundesamt. To this end, the

**The complete electrification of shipping is not an option with today’s state of the art technology. However, this is not a reason to continue to rely on heavy fuel oil, emphasizes VDMA expert Peter Müller-Baum. The “Maritime Energy Transition” dialog paper published by VDMA guides the way to more sustainable shipping.**

By Katrin Pudenz

VDMA and large-engine manufacturers formulate ten theses for the best way to greener shipping in the “Maritime Energy Transition” dialog paper.

With the paper, the VDMA engine sector, above all the manufacturers of marine engines including Caterpillar,

experts see “Liquefied Natural Gas” (LNG), an environmental and climate-friendly substitute for the currently used heavy fuel oil, as a medium-term solution, since LNG is much cleaner than heavy oil. Furthermore, the reinforced use of LNG leads on to further steps: As a long-term goal, large-engine manufacturers call for the substitution of fossil fuels with liquid or gaseous synthetic e-fuels. These fuels are produced with regenerative electricity, which means they are CO<sub>2</sub>-neutral and burn more cleanly than fossil fuels. It is now necessary to head in the right direction. “LNG already helps us to reduce soot, nitrogen oxides and CO<sub>2</sub>,” explains Dr. Uwe Lauber, Chairman of the Board of Management of MAN Diesel & Turbo SE and Member of the Board of the VDMA Engines and Systems Association. “In the long term, a sector coupling between the energy industry and transport industry is needed. Therefore, the sector needs a clear and globally binding development trajectory.”

Another point that the experts agree on is that the regulations for the reduction of harmful and CO<sub>2</sub> emissions have to be enforced internationally. And with the appropriate controls and sanctions. They also propose global CO<sub>2</sub> pricing since low fuel costs represent a significant obstacle to investments in efficient and clean drives. With one price for CO<sub>2</sub> emissions, investments in climate-friendly fuels and efficient drives would pay off.

### **Making ship drives more efficient**

Engine manufacturers consider themselves as system providers for drive technologies. From their point of view, efficiency can also be increased with hybrid solutions, an optimized overall system and the intelligent use of data from shipping and engine operation. “The further development of the combustion engine, especially in combination with battery-electric components, and the consideration of the entire system instead of individual components harbor enormous potential to increase the efficiency of ship drives,” explains Andreas Schell, Chair of the Board of Rolls-Royce Power Systems AG and Member of the Board of VDMA Engines and Systems. This will also contribute to the reduction of harmful and greenhouse gas emissions. Each liter of fuel saved directly reduces emissions.

After showing political commitment in Paris at the climate summit, it is now necessary to act: Accordingly, large-engine manufacturers want to push forward the rough technology roadmap together with policy makers. ■

### **Further Information**

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