



## WHAT CRUISE AND FERRY OPERATORS DO TO LOWER THEIR CARBON FOOTPRINT

Although cruise and ferry operators make up only 1% of the total global fleet, they are hugely visible. With increasingly eco-conscious passengers and more and more demands of regulators to respond to, the shipowners put a lot of effort into making their fleet more sustainable and environmentally friendly. On the final day of Europort 2019, some of them presented their plans and solutions at a well-attended Masterclass moderated by Jane Jenkins of Lloyd's Register.

Viking Line is counting down the months to the delivery of its second LNG-fuelled vessel, Viking Glory, currently under construction in China. Viking collaborated with Deltamarin, Wärtsilä and ABB Marine to come up with a 'climate-smart' design. "Despite having extra vehicle capacity and being larger overall than Viking Grace, our first LNG ship, it will burn 10% less fuel," the cruise-ferry operator's Johanna Boijer-Svahnström told the public. Holland America Line (HAL)'s director fleet operations for Europe Sibrand Hassing outlined the challenges facing cruise lines. "Cruise ships make up only 1% of the total global fleet, but we are hugely visible."

### KEEN ADOPTERS

Cruise lines are keen adopters of LNG. Ten of the 21 ships HAL has on order will sail on gas. "The technology has matured and is well-understood, but bunkering availability remains an issue on itineraries featuring more remote destinations," Hassing noted. However, none of the emerging zero-emissions technologies so far proposed for meeting IMO's decarbonisation goals are currently available at the scale needed for large passenger ships. Even if they can be scaled up, Hassing doubts retrofitting to existing tonnage would be straightforward, if possible at all. For now, HAL is looking to enhance vessel efficiency as best it can with existing technologies such as air-lubrication, better hull coatings, fuel-cells and batteries, and implementing a raft of measures aimed at cutting hotel load. Viking Line has achieved a fleet-wide 20% reduction in fuel consumption and associated emissions over the past decade. But efforts to lessen environmental impact go

beyond fuel, said Boijer-Svahnström. "Little changes can add up. Switching to buffets in our restaurants has helped cut food waste by 40%," said Boijer-Svahnström. "On our larger ships, the remainder is then taken and processed into biofuel for taxis. Overall, 97% of waste generated onboard is now recycled ashore." And it has also responded to heightened awareness about plastic pollution. "Plastic bags in our onboard duty-free shops are made from onboard plastic waste. We've phased out single-use drinks bottles in favour of glass that can be washed and reused."

### INCREASING PRESSURE

Delving deeper into the challenges of future alternative fuels, Niels de Vries of C-Job Naval Architects gave a detailed technical appraisal of ammonia. "It offers attractive volumetric energy density and can be synthetically produced using renewable energy sources," he said. By mixing with hydrogen, ammonia's combustion properties can be improved and made similar to methane, de Vries explained. He added: "The necessary hydrogen can be obtained from ammonia itself, by cracking it onboard." Daniel Sahren, a researcher from the German shipyard Meyer Werft, was faced with pulling together the threads of earlier presenters. "The newbuilds being planned and designed today will still be in service in 2050," he cautioned. "On top of that, there is increasing pressure from passengers for operators to be transparent about their environmental performance." Evaluating the whole energy chain from 'well-to-propeller' will, he stressed, be vital to finding climate-neutral solutions. "LNG is cleaner burning in terms of pollutants like SOx, NOx and PM. It's the best option on the table today but makes limited impact regarding climate." Measures to reduce hotel load and improve efficiency are helpful: "Less demand means less effort, but energy saving alone won't be enough. Only renewable fuels will have paramount impact", he said, pointing out methanol, methane or FT-Diesel as most practicable options. These are drop-in able and can fuel both, existing ships and those being built today."