

Boost for hybrid power module

Technology group Wärtsilä's hybrid power module, the innovative Wärtsilä HY, has been granted Approval in Principle (AIP) by global provider of classification and technical advisory services to the marine and offshore industries, ABS. The AIP follows another issued by ABS in 2017 for Wärtsilä's hybrid propulsion tug designs.

The Wärtsilä HY was developed by leveraging Wärtsilä's technical strengths in both engine design and electrical and automation systems. The fully integrated hybrid power module combines engines, an energy storage system, and power electronics optimised to work together through a newly

developed energy management system (EMS). It is the marine sector's first hybrid power module of this type produced, thereby establishing a new industry benchmark in marine hybrid propulsion.

Giulio Tirelli, director, sales and business intelligence, Wärtsilä Marine Solutions, said: "This AIP is an important step in the development of our eco-friendly hybrid propulsion system, which can be applied to a variety of vessel types.

"By working with ABS, we are demonstrating the viability of hybrid vessels in a range of applications and highlighting the capability to the US market and further afield."

Demetri Stroubakis, ABS equipment and materials director, said: "This is the latest example of how ABS is collaborating globally with innovative companies such as Wärtsilä to expand approval of hybrid designs for power and propulsion options.

"We recognise the significant economic and environmental benefits of hybrid powered vessels and are committed to supporting



▲ The Wärtsilä HY is available in different configurations

the development of alternative power applications that optimise efficiencies."

With the increased industry focus on environmental compliance and operational performance, many ship owners and operators are shifting their attention to electric propulsion and non-conventional sources of power.

The ABS Advisory on Hybrid Electric Power Systems has been published to provide guidance in the development of new concepts.

PSV in North Sea emissions survey

Vroon PSV *Pool Express* supported the Netherlands Oil & Gas Exploration and Production Association (NOGEP) on a project to measure and assess greenhouse gas and methane emissions in the North Sea.

NOGEP is acting on behalf of 13 companies during the transition to a future powered entirely by renewable energy. Under the Offshore CH₄ Campaign 2018, scientists from independent Dutch research organisation TNO joined representatives from Total Exploration and Production Netherlands and ECN (Dutch Energy Research Centre) on board *Pool Express*.

A sampling process, which took place over three days, will provide vital input for an analysis report on the atmospheric quality at specific Dutch oil & gas platform locations.

Pool Express is a 2008-built PSV, designed and purpose-built by Damen Shipyards and Vroon for Peterson's SNS Pool operations. The vessel, and its sister *VOS Base*, feature a diesel electric engine, 620m² clear deck and underdeck methanol capacity. Both *Pool Express* and *VOS Base* have been on charter to the SNS Pool since delivery to Vroon as newbuilds.



▲ Vroon's diesel electric PSV *Pool Express*

Time to tackle the problem of noise

Opinion: US-based HydroComp's technical director, Donald MacPherson, argues that harbour tug operators need to be more aware of underwater noise pollution and the likely impact of coming legislation



Unlike their open-ocean cousins, harbour and coastal tug operators may not be aware of the environmental pressure to keep ships quiet.

Port communities and marine mammals alike can be significantly affected by ship-generated underwater radiated noise (URN). The evidence that URN is harming certain marine mammal populations is compelling, so many coastal ports – and their local, regional and federal governments – are considering short-term regulation of URN.

A working group within the UN has also met to consider formally classifying noise as a pollutant.

The critical message is: What will tug operators, as active players in ports and harbours, do about it? Why should you care?

Is tug operation even a contributor to URN? Examining the 'excitation-transmission-response' physics of ship-generated noise, we find that propeller cavitation and impulses are principal sources of noise excitation.

As high-powered vessels operating under heavily-loaded towpull conditions, yes – tugs must be considered a source for URN.

Then, what is the likelihood of impending regulation? In my opinion, the writing is on

the wall, as voluntary "regulation" of URN has already become part of environmental protection activities.

Yes, we should care. And those companies that anticipate and plan for URN mitigation will have a competitive advantage with the least headaches.

Unfortunately, there is one big hurdle to broad and meaningful noise reduction – current engineering models for URN prediction are either woefully inadequate due to its simplicity or beyond the scope of naval architects due to its complexity.

The team at HydroComp has embarked on an initiative to resolve this hurdle with new research and development that will lead to a new engineering capability for naval architects to effectively assess and mitigate URN. This will leverage the 'vessel-propulsor-drive' simulation model inherent in our commercial design software, and allow designers to solve URN problems before the ship hits the water.

Please join us in our efforts to solve this problem while we still have whales to protect.