April 2020

MARITIME REPORTER AND ENGINEERING NEWS

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Number 4 Volume 82

OFFSHORE WIND
DOUBLING DOWN
ON U.S. PROSPECTS

INTERVIEW
DR. DIRK JÜRGENS
HEAD OF R&D, VOITH TURBO

TRAINING TIPS FOR SHIPS
COVID-19, MARITIME
& YOUR LMS

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Wind Power

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Photo: Senesco Marine

Features

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REMOTE MONITORING INNOVATION ENABLES SUBSEA SYSTEMS COMMAND AND CONTROL

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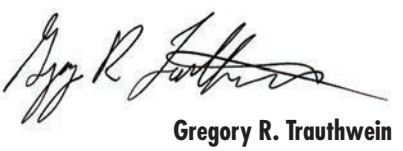
Last month COVID-19 prompted the world and its commerce to grind to a 'socially distanced' halt, a reality that hit the crew here at *Maritime Reporter & Engineering News* squarely in the jaw as our headquarters is in the middle of New York City, a city which has morphed into a surreal ghost town and a 'hot spot' for this pandemic. Personally, I consider myself and our staff very fortunate. Our business has always been 'global and mobile,' so when the decision was made in early March to stop the daily trek into Manhattan, the work-from-home model kicked in seamlessly thanks to our IT crew, and to date all are healthy, accounted for and operating at 120% capacity.

> "If you truly want world commerce to go on, you need to take care of the workers. If the workers stop, world commerce will stop."
>
> **Frank Coles**
> CEO, Wallem Group

As of this writing in early April, the situation was still fluid, rapidly changing, generating a great deal of uncertainty regarding how long it will last, as well as the breadth and depth of its cut. While there are many uncertainties, this much is clear: There is no longer a 'business as usual' in most traditional industries, and long-range planning is redefined to 'the next 24 hours' for many. Another thing that has not, and will not change: the maritime industry; the ship and boats and the people that operate them from shore and at sea; the people that design them, fix them and build them; the people the supply them with products, services and support are the literal heart and soul to maintaining the flow of commerce globally. That's why, in this incredible jumbled mess of infinite story thread to follow, that the treatment of seafarers has been shameful.

I had the opportunity recently to speak with **Frank Coles**, CEO of the Wallem Group, an organization which manages approximately 7,000 seafarers globally. Coles is a familiar face in maritime circles, and more so he's a familiar voice known for speaking his mind. He has taken to social media with a vengeance during this crisis to expose the plight of the seafarer, many who have been stuck on ships for extended periods as countries have systematically closed their doors and/or limited or forbidden crew changes. There is no comparison to be found in the transport sector, particularly when compared to the freedom of movement of airline crews. And while the current situation is untenable, there is a looming crisis in crewing ships once commerce returns in earnest. Our interview with Coles will publish shortly on **MarineLink.com** and in full in the May 2020 edition.



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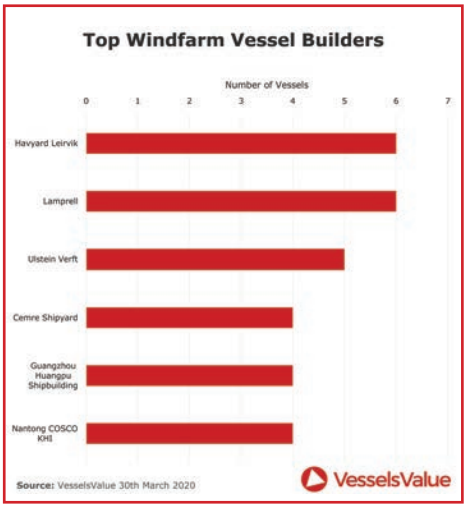
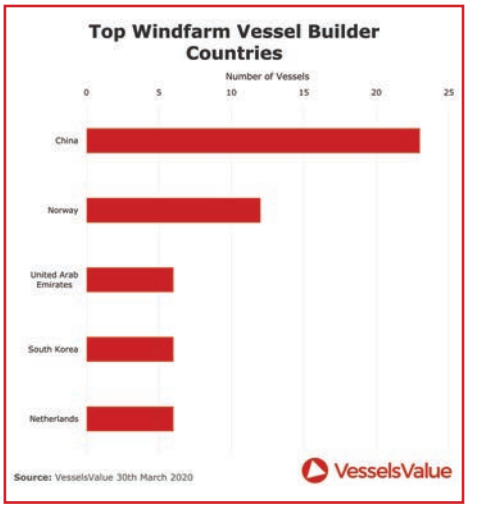
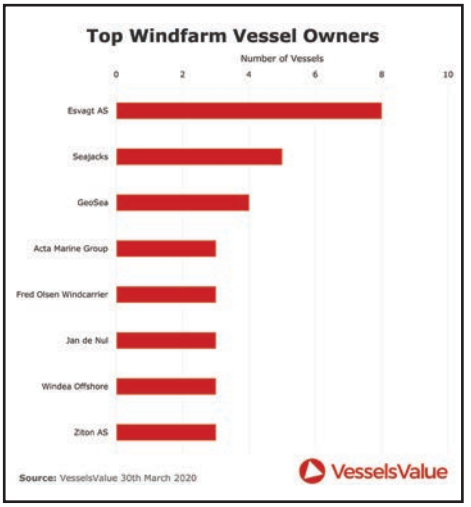
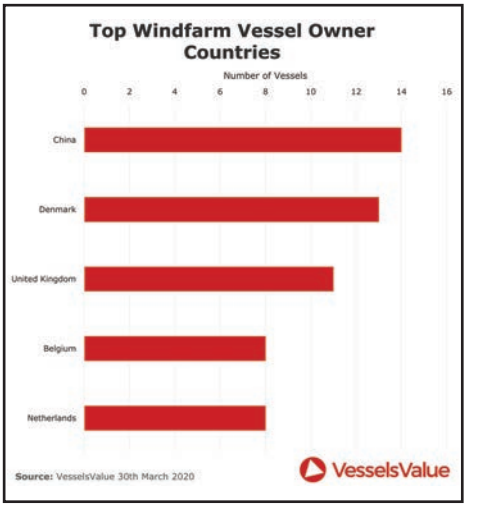




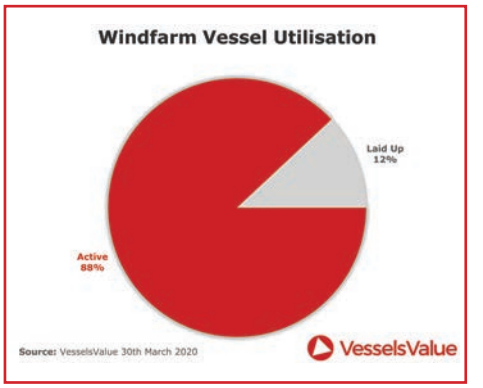


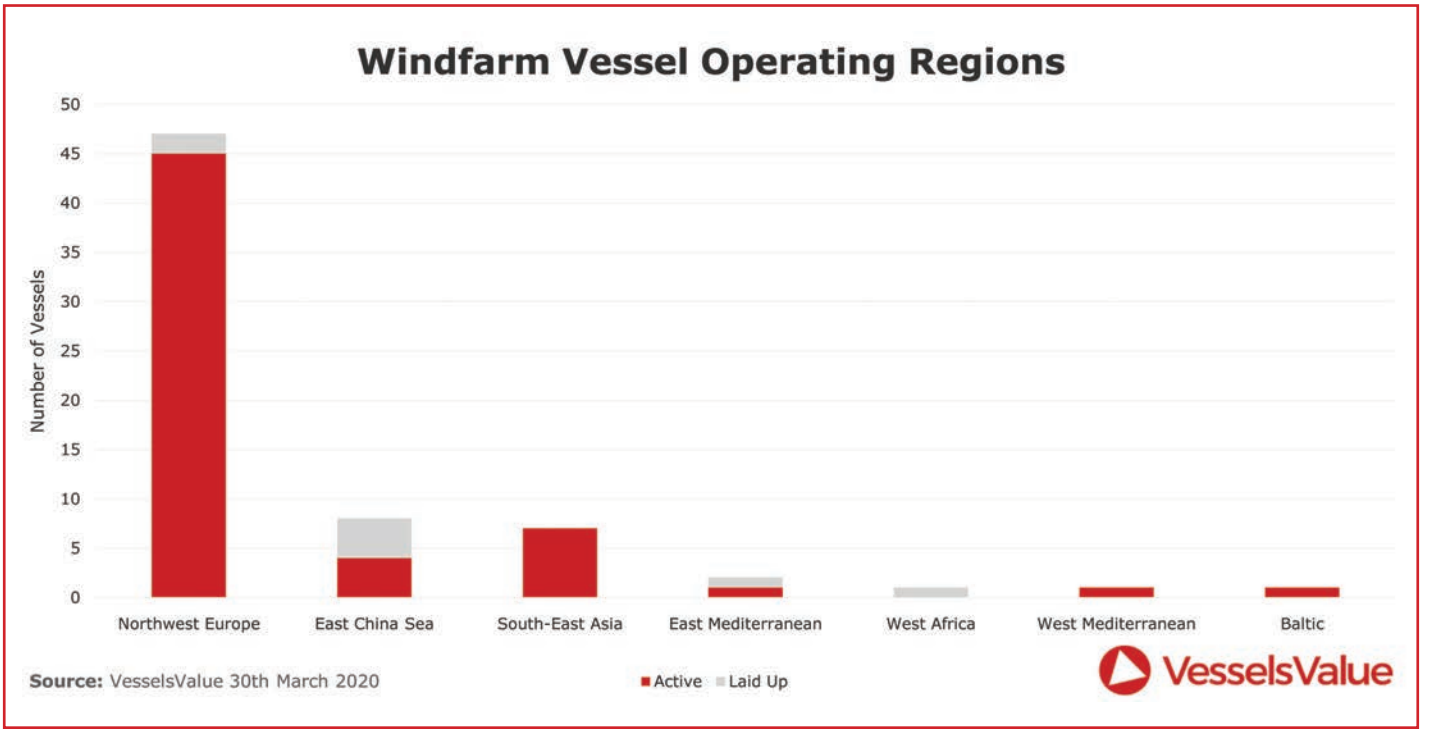


VesselsValue

Go with the (Wind) Flow

As a global pandemic has flipped the business world on its head in a matter of weeks, and the proverbial 'light at the end of the tunnel' may be nowhere to be found, bear in mind that this, too, shall pass. For the companies left standing, opportunities will abound, including offshore wind. Coverage in this edition is voluminous, as the offshore wind market holds promise to transform the U.S. maritime market. Here find some key points from our friends at VesselsValue, with feture coverage throughout this April 2020 edition.





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"Shipowners should take responsibility and not compete but collaborate in the area of carbon footprint reduction to meet the 2050 zero-carbon target."

Henrik O. Madsen,
Chairman, decarbonICE

NOIA

Island Offshore

Tommy Walaunet, MD, Island Offshore

Voith Turbo Marine

" ... onerous regulations and short-sighted litigation can end the hopes of any ascendant industry as fast as any market miscalculation."

Erik Milito
President, NOIA

Tip #11

Your LMS Can Help You Now ... More Than Ever

It is clear that we are living in unprecedented times. Equally clear is that we will get through this pandemic, but that it is going to take some strength, stamina and especially some innovation to come through as unscathed as possible. It is the innovation part that I wish to address here with some tips that go beyond training; tips I am observing our customers innovate and implement. Tips that help us solve some of the problems created by the impacts of this pandemic. My hat is off to these customers for their can-do spirit in these difficult times, using the tools at hand to solve new problems.

With that, here are three different initiatives undertaken by our innovative customers to use their LMS to help them get through these times. If you have an LMS (or want to implement one quickly), one or more of these may help you as well.

The LMS as a Communication Tool

One of our largest customers has a fleet of more than 100 vessels and tens of thousands of employees on land and at sea. With such a fleet and with so many employees, communication is one of the most challenging issues. Getting regular and timely updates to all employees is critical in these times to share needed information, reduce fears, quell rumors and reassure everyone. And ideally, these updates come from the very top. There is nothing like hearing directly from the company president in times like these.

In order to achieve this, our customer is creating regular video podcasts where the president addresses all employees. These videos are simple, direct to the point, reassuring, and contain useful information that the employees need. Although these particular videos happen to be very well done, it is not necessary that they have a high production quality. Instead, honest, timely and authentic will win the day every time.

Each time a video is created, it is immediately placed on the LMS which in turn automatically synchronizes it to all vessels in the fleet. Statistics are automatically generated both from shore and all vessels, so the company knows when, and how much they are being watched. This helps gauge the impact of the videos.

The LMS to Create Safe Training Spaces

One obvious opportunity to safely maintain training is to move existing in-person training on-line so that it can be done safely. Rather than describe this myself, here is a note I received from a large ferry operator just a few days ago about their response to the pandemic:

> *"But here is the good news. The LMS has been working wonderfully. ... I'm having all my new terminal employees do all of their required training at home which aligns with the CDC guidance. Given that we have a world pandemic going on this system is providing both our students and instructors a safer environment. That is going to be the plan for all of our deck new hires as well. I've been able to cancel approximately 32 instructor-led trainings and utilize the LMS instead".*

The LMS to Deliver COVID-19 Related Training

I'll close with the most obvious. We have been hearing from a number of customers that they have deployed "just in time" training about COVID-related issues. These include topics such as physical distancing, food handling, customer interactions, surface cleaning, and many more tips on limiting the spread of the disease. There are many good, free learning resources in PowerPoint or video format that can immediately be loaded into your LMS (and depending on your LMS - immediately synchronized out to your vessels). Adding a short exam to track the training and ensure the key points are learned takes only minutes in most LMSs, and helps you sleep at night knowing your employees have the knowledge they need to keep safe and healthy, and to keep those around them safe and healthy as well.

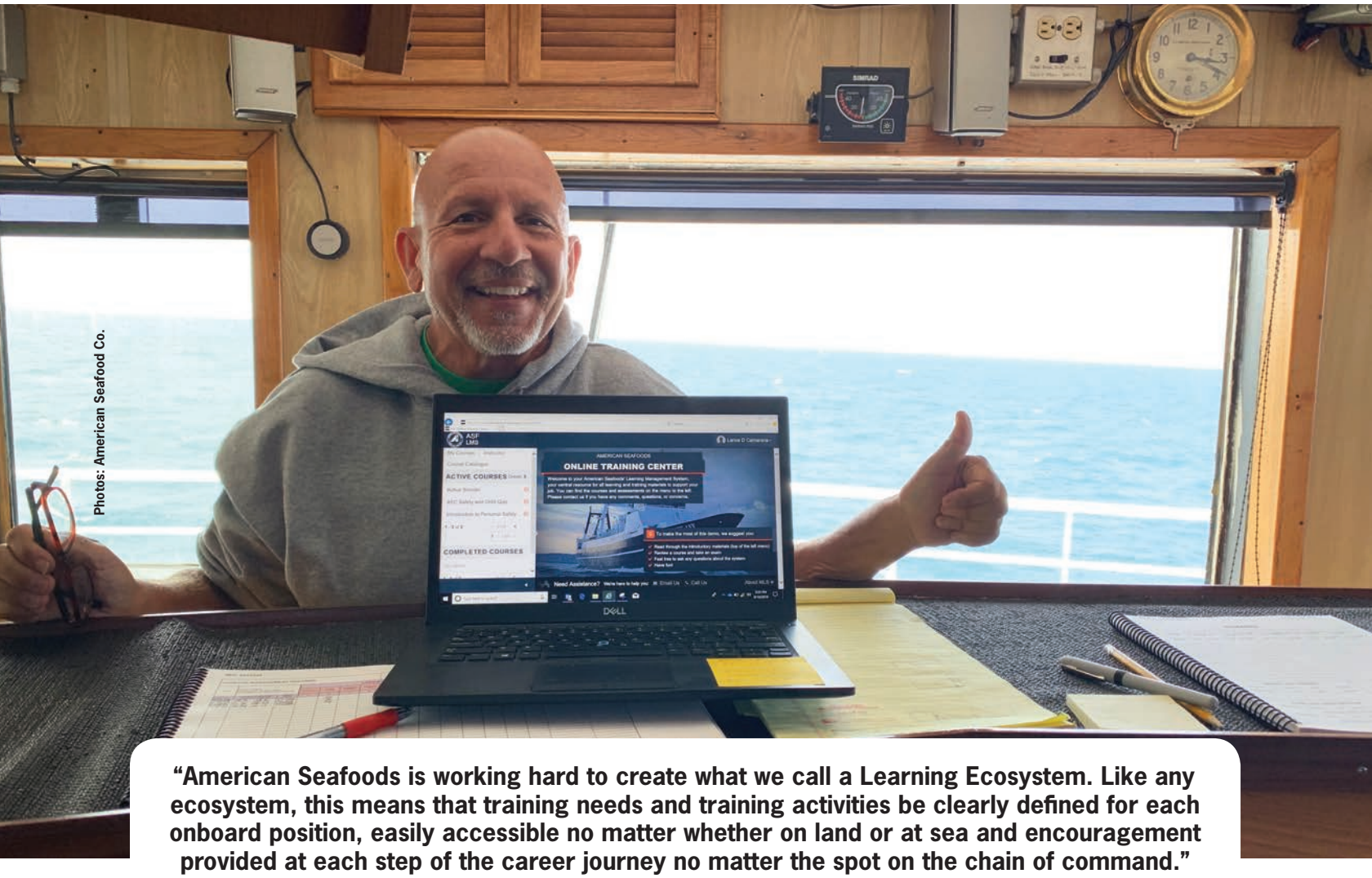
Let's continue to share best practice to ensure that we all get through this intact and as quickly as possible. Until next time, sail safely and please stay healthy!

The Author

Goldberg

Murray Goldberg is CEO of Marine Learning Systems which provides software and services to optimize knowledge, skills and behavior in maritime operators.

Contact Murray @ Murray@MarineLS.com



Photos: American Seafood Co.

"American Seafoods is working hard to create what we call a Learning Ecosystem. Like any ecosystem, this means that training needs and training activities be clearly defined for each onboard position, easily accessible no matter whether on land or at sea and encouragement provided at each step of the career journey no matter the spot on the chain of command."

Lance Camarena, Director Training & Organizational Development for American Seafoods Company.
Read the full story at: **https://www.marinelink.com/news/profiles-training-american-seafoods-477241**

Protecting the Future of Offshore Wind

Hurdles ahead are lowering ... slowly

Photos: © Federico Rostagno/AdobeStock

The American offshore wind outlook is bright. Regulatory and technological questions regarding offshore wind are clearing up. Atlantic states are offering to purchase more and more gigawatts of wind-produced energy. Wind producers have demonstrated that they are willing to make substantial financial commitments to the industry. With all this progress, however, one cloud stubbornly remans: the Vineyard Wind permitting delay.

Offshore Massachusetts, the 800-megawatt Vineyard Wind is supposed to be the first offshore, utility-scale wind project. In August 2019, the Bureau of Ocean Energy Management (BOEM) announced a delay of the Final Environmental Impact Statement (FEIS). In February 2020, BOEM updated the permitting timeline for Vineyard Wind, saying the FEIS will be out by mid-December 2020.

Delays, especially regulatory delays, are disappointing and worrisome for supporters of any type of project. But for offshore wind supporters, the Vineyard Wind delay doesn't just impact one project or one company. The Vineyard Wind delay could have a ripple effect throughout the entire America offshore wind sector and impact the ability of wind producers to provide a new energy source of millions of onshore consumers.

The Vineyard Wind delay could create bottlenecks at the East Coasts ports that are tasked with building the offshore wind industry. While companies are spending millions of dollars upgrading and expanding existing East Coast port facilities, there is no one single port that can handle every type of project needed to build an entire offshore wind industry. Wind developers, and their vendors, will utilize a network of East Coast ports to meet their various needs. The complexity of orchestrating such a logistical network, means that if there is a "stacking effect" at one port, there could be ripples of delays at virtually every other East Coast port.

The Bureau of Ocean Energy Management (BOEM), the federal regulator with authority over offshore wind leasing, understands these risks. BOEM delaying Vineyard Wind, shows, almost counterintuitively, how invested the government is in the success of offshore wind. Getting it right is more important than getting it first. This means finalizing an environmental analysis that can be used to support and streamline approvals for vast offshore wind projects that are being planned throughout the Atlantic.

Cape Wind is a warning of what can happen to a new industry. Vineyard Wind was not always supposed to be the first offshore American wind project. Cape Wind owned that distinction. The $2.6 billion project with 130 turbines would eventually power 200,000 along Cape Cod. But onerous regulations and short-

sighted litigation can end the hopes of any ascendant industry as fast as any market miscalculation. In 2017, Cape Wind had to pull the plug on its project of Cape Cod after years of, as the New York Times described it, "endless litigation." Round after round of lawsuits drove up costs and established delays and prevented Massachusetts residents from being able to access a new energy source.

Even with the delay, East Coast states are moving ahead with their plans for offshore wind. Six states announced more than 16 gigawatts of new offshore wind targets in 2019 alone. In total, more than 25 gigawatts of offshore wind projects are targeted by Atlantic states.

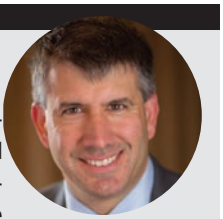
Furthermore, states are not just theorizing about wind, they are actively awarding wind contacts. In the past year, New York awarded 1.7 gigawatts of offshore wind contracts to two projects; New Jersey gave the green light for a 1.1-gigawatt project; Connecticut signed a 804-megawatt deal; and offshore Virginia, construction began on the first wind farm in federal waters.

States are pushing offshore wind forward, to the benefit of millions of Americans. Close to $70 billion in capital expenditures by 2030 will be needed, and more than 160,000 direct, indirect or induced jobs could be created by 2050. The most recent offshore wind lease auction generated $405 million in Federal revenues. Clearly, there is more hinging on the success of Vineyard Wind and other permits than ever before.

The Trump administration is checking every box to make sure that offshore wind is a success story, and the U.S. Department of the Interior is making sure history does not repeat itself. Realigning the interpretation of the Migratory Bird Treaty Act (MBTA) to meet its statutory intent and reforming the National Environmental Policy Act (NEPA) allow common-sense to prevail and limit the ability of litigation to derail massively important projects that benefit energy consumers while protecting the environment.

But without a firm regulatory foundation to build upon, all the benefits of offshore wind will vanish overnight. The final stroke – getting past the Vineyard Wind permitting hurdles by getting it right – will open the door to an offshore wind industry that will be here for a long, long time.

The Author



Milito

Erik Milito is the President of the National Ocean Industries Association (NOIA), the national trade association representing all segments of the offshore energy industry.

Legal Beat

Challenges Finding Qualified Crew
to Power Future Offshore Wind Growth

We are continuing to witness an incredible amount of interest and investment in the offshore wind (OSW) market. The United States now has a pipeline of OSW projects in development stages off the Atlantic Coast that will prompt the need for new skilled workers, including in the maritime space. The projected megawatts for these projects is 22,000 MW by 2030 and 86,000 MW by 2050. The projected number of new jobs, according to the Department of Energy is 43,000 by 2030.

While European developers are bringing money and expertise to the United States, the United States needs to match their investment with its own skilled workers. The types of workers range from civil engineers – to construction workers – to certified and trained seafarers with the requisite skillsets. In addition, as part of this developing interest we are starting to witness real and substantial investment in new and modified Jones Act vessels to perform the necessary work offshore to make these wind farms operational. However, one of the key issues that has not been adequately discussed and assessed is how the OSW industry is going to identify and train the crew and other mariners needed to crew these vessels under U.S. manning laws. Let's survey the situation.

Studies on Vessel Needs and Investments in Training

While there have been several notable efforts with regard to State Workforce training programs, including leading developer investment workforce training programs such as the National Workforce Training Center https://us.orsted.com/News-Archive/2019/04/Sunrise-Wind-Announces-Plan, there does not seem to be a focus on making sure this training ensures that U.S. citizens are trained to perform all of the necessary work aboard Jones Act vessels. For example, a recent comprehensive technical report published by the National Renewal Energy Lab in July 2019 entitled "The Wind Energy Workforce in the U.S.: Training, Hiring, and Future Needs" did not really address the needs on Jones Act vessels.

One noteworthy development in this area was Section 3518 of the National Defense Authorization Act for Fiscal Year 2020 (2020 NDAA) (P.L 116-92) which was enacted on December 20, 2019. Section 3518, sponsored by Senator Ed Markey (D-MA), requires the Government Accountability Office to provide a report within six months of enactment of the 2020 NDAA on the need for U.S.-flag vessels to install, operate, and maintain emerging offshore energy infrastructure, including offshore wind energy. The report must include: (1) an inventory of existing vessels (or that can be modified) that can already be utilized in the wind sector, (2) a projection of vessels that will be needed over the next ten years, (3) a summary of actions taken or proposed by offshore energy developers and producers, the domestic shipbuilding industry, and coastwise qualified operators to ensure sufficient vessel capacity in compliance with U.S. coastwise laws, and (4) a description of the potential benefits to the United States. This report, when published, could be a good starting point in identifying critical manpower needs.

U.S.-Flag Manning Laws and Restrictions

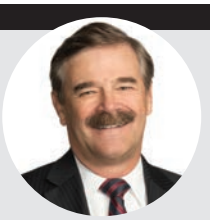
The essence of the problem is two-fold. First, there is a U.S. citizen requirement and, second, there is a Merchant Mariner Credential (MMC) requirement.

- **U.S. Citizen Crew Requirement:** Absent some exceptions, the officers and unlicensed seamen crew aboard a U.S.-flag vessel must be U.S. citizens. The Coast Guard may waive the U.S. citizenship requirement, other than for the master, under certain circumstances. One of these circumstances is if the Coast Guard determines, that qualified seamen who are citizens of the United States are not available. Unfortunately, the Coast Guard has not promulgated regulations to implement this provision and has refused to use this authority absent a regulation. Accordingly, there is no waiver provision available.
- **MMC Requirement:** In addition to this citizenship requirement, any person "engaged or employed" aboard a U.S. flag vessel of at least 100 GT must have an MMC with certain exceptions. The term "engaged or employed" is very broad. With limited exceptions not applicable to vessels engaged in wind farm work, foreign citizens may not obtain an MMC under Coast Guard regulations.
- **Using Foreign Citizen Specialty Personnel aboard a U.S. Flag Vessel:** Historically, it has not been uncommon in the past for companies to place persons aboard a U.S.-flag ves-

sel to perform special operations that U.S. citizens could not perform. However, the Coast Guard updated its Marine Safety Manual (MSM) in 2017 discussing its interpretation of the term "seaman." Under this policy guidance, the term "seaman" is interpreted broadly by the Coast Guard to mean any individual engaged or employed in the business of a vessel or a person whose efforts contribute to accomplishing the vessel's business, whether that person is involved with operation of the vessel.

Under this policy guidance, the Coast Guard does not consider a person who is briefly visiting the vessel in a consulting capacity (e.g., a vendor's technical representative), or shoreside personnel who come on board vessels while they are not underway to load or unload cargo or to perform services such as maintenance of shipboard equipment to be a crewmember. However, in general, individuals being compensated for performing their jobs while the vessel is underway are considered seamen for the purpose of applying citizenship requirements. For example, waiters, entertainers, industrial personnel, oil recovery workers, riding, maintenance crews, and others employed in the business of the vessel are considered seamen. In summary, in the Coast Guard's view only a foreign citizen that fits the description of a "consultant" can be used aboard a U.S.-flag vessel. This consultant test will make it challenging for foreign citizens to work aboard a U.S.-flag vessel. U.S. OSW market developers, owners and operators of coastwise qualified vessels, investors in the U.S. OSW market, and other stakeholders should establish as one of the top priorities for this market, programs to attract and equip mariners and other maritime workers with the skills needed to support the steady growth of the OSW industry, taking into account the U.S. citizen crewing requirements aboard U.S.-flag vessels as discussed above. In addition, the Maritime Administration, Department of Labor, and other relevant federal agencies should make this issue a top priority and focus on providing training opportunities geared to this growth sector for this new market place.

The Author



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The American Bureau of Shipping

AIP for Jones Act-Compliant SOV

ABS has granted 'approval in principle' (AIP) to the global marine engineering firm VARD Marine (VARD) for its design of the first Jones Act-compliant service operations vessel (SOV) dedicated for use in the U.S. offshore wind sector.

The design, a version of VARD's 4-Series (07) SOVs customized for use in U.S. territorial waters, offers innovative new features for accommodation, with a focus on safety in the transfer of personnel to platforms, and storage facilities for the components and tools used during operations.

VARD says the design incorporates a state-of-the-art hull form created for all weather conditions, which, when combined with the vessel's efficient propulsion configuration, improves steaming economics, and enhances sea-keeping and station-keeping performances.

"With our track record in SOV and offshore-vessel designs, and ABS' record in the off-shore sector, working together to deliver this project seemed like a natural fit," Darren Truelock, Vice President, for VARD Marine (Houston) said in a release announcing the AIP. "We already have experience supporting yards worldwide to construct our offshore vessel designs, so it is with great enthusiasm that we now start on this exciting journey with ABS in the U.S."

The vessel is designed to have comparatively low fuel consumption and ease of construction; it also has been optimized to

reduce the affects of motion and acceleration on its crew.

"ABS is supporting innovation in the development of alternative-energy systems all over the world and it is a real pleasure to be helping to deliver such an important vessel here in the U.S.," said Matthew Tremblay, Senior Vice President, ABS Global Offshore.

SOVs are unique vessels, purpose-built for the deployment of heavy-duty components and the accommodation of offshore support and maintenance engineers. As such, they need to be highly adaptable, capable of offering transport, a hotel, a warehouse and a workshop.

A purpose-built SOV typically requires a higher level of comfort so that turbine and other technicians can stay onboard and work efficiently for up to a month at sea. The vessel may need to stay on station for several weeks at a time, using dynamic positioning systems.

During the AIP process, ABS assessed the Vessel General Arrangement, the midship section and the ship's prospective outline specifications for the class notations that were requested by VARD, and to ensure the design was compliant with ABS Rules, including U.S. supplements to those rules. The VARD design calls for the vessel to be built to the following ABS class notations:

- + A1
- Offshore Support Vessel (WIND-SC)
- + AMS
- + ACCU
- DPS-2
- HAB(WB.)

In particular, part of the assessment criteria from ABS's Guide for Crew Habitability on Workboats focuses on five categories that can affect performance of the crew in the challenging SOV workplace; each can be controlled, measured and assessed in work, rest and recreation areas of workboats. The categories cover the design of the accommodation area, whole-body vibration (there are separate criteria for accommodation areas and work spaces), noise, indoor climate and lighting.

From talking to the developers, VARD recognizes that the technician is at the heart of wind-farm operations, and that their ability to remain sharp at work can depend on the sea-keeping performance of the SOV.

The offshore wind sector has recently come of age in the U.S., especially on the east coast, where the developer community seems increasingly committed to creating a successful market. VARD says that market holds several promising opportunities for U.S. designers and shipbuilders, but also some challenges.

For one, the SOVs and larger jack-up construction vessels needed to build and service the offshore wind fields will need to begin rolling off the slipways at U.S. shipbuilding yards very soon.

In the interim, a number of existing Jones Act offshore support vessels (OSV) may be candidates for conversion to serve the wind industry; VARD plans to support owners and shipbuilders with these modifications, which in turn will help developers to fill the gaps until bespoke vessels are built. However, as the size of wind turbines continues to grow, only so much can be achieved through conversion; extra-large, purpose-built vessels will need to be built as soon as practicable, or brought over from abroad to support the wind-farm construction. Like ABS, VARD is an international company with the global experience to bring the lessons learned overseas from the growing pains of the offshore wind markets to bear in the U.S.

Both have extensive SOV experience and can leverage their knowledge of the Jones Act, the OSV market and relationships with shipbuilders to support the safe expansion of this fast-growing energy sector.

Creating a Pathway to Carbon-Negative Shipping

By Tom Mulligan

Shipping emits close to 1 billion tons of CO2 each year and the shipping industry needs carbon-free solutions to achieve the IMO's 2050 target of a 50 percent reduction, compared to the 2008 level, in these massive emissions. However, according to Denmark's Maritime Development Center, while better technical and operational solutions must continue to be pursued, they will only bring the industry part of the way: "Low- or zero-carbon fuel solutions must be introduced and scaled by 2050 to reach the target," the organization has stated. Thus, while a large number of initiatives and pilot projects with zero-carbon or carbon-neutral fuels are currently being undertaken, a more practical approach may be the use of on-board carbon capture with subsequent storage at appropriate sites and, in this context, the use of conventional fossil fuels may become carbon free.

MDC sees analogies between the IMO's 2020 sulfur regulations and the 2050 zero-carbon target: "The expected energy penalties in adopting a zero-carbon strategy are low – it's a 'no-brainer'," said Henrik O. Madsen, former DNV GL President and CEO. "Shipowners should take responsibility and not compete but collaborate in the area of carbon footprint reduction to meet the 2050 zero-carbon target. In my opinion, this is an area that is far too important to become the victim of competition – this is a problem for the industry at large that will not go away, and the industry must collaborate to satisfy society's expectations."

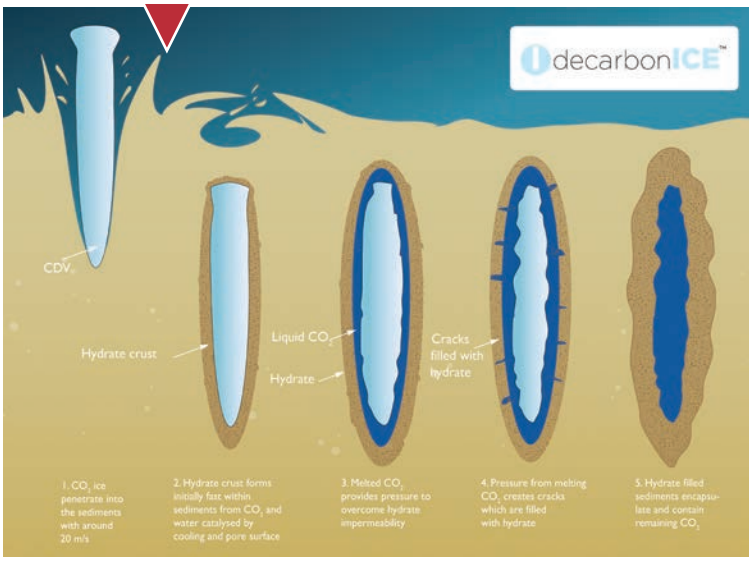
decarbonICE CO2 Capture & Storage

Madsen is chairman of the decarbonICE CO2 capture and storage project being run by MDC, in which international shipping carriers act as project sponsors, supporting the platform financially, while producers of maritime equipment and services act as in-kind contributors, supporting the platform with non-monetary services and assets, such as knowledge, experiments, working hours and equipment. The decarbonICE technology is based on two new main ideas, one for CO2 capture and one for its storage. CO2 and other greenhouse gases (GHGs) in a ship's exhaust are captured on board by cooling exhaust gasses to about -120°C, creating dry ice. Some of the NOx, and in particular those that have a GHG effect, will also freeze and become part of the dry ice, while others will be vented to the atmosphere. There are several options for dealing with SO2, including the introduction of scrubbers. Water vapor is removed early in the cooling process.

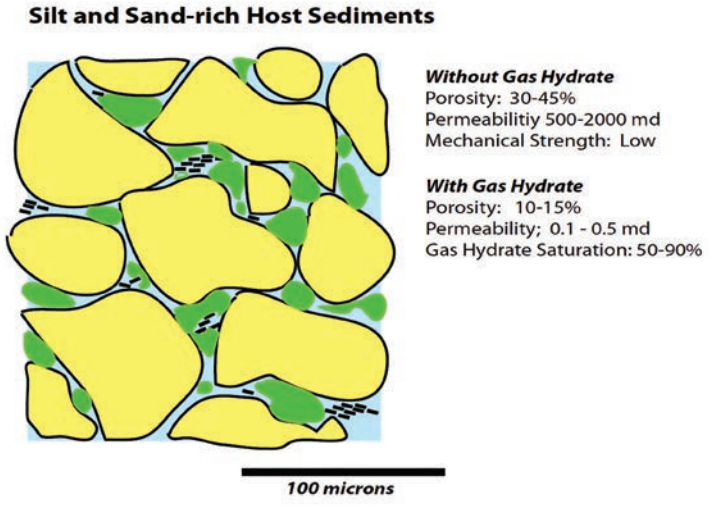
Using well-established offshore technology, the dry ice is shaped into Carbon Descent Vehicles ('torpedoes') that are sent down to the ocean floor, sinking to depths of 500 meters at speeds of about 25 meters per second, where they bury themselves in seabed sediments, storing the carbon dioxide safely and permanently as liquid CO2 and CO2 hydrate. Each CDV will be launched to the sea and not lose any or at most 1 percent of its CO2 to the water during its descent to the sea floor. During this descent phase, it is furthermore ensured that no large mammals like whales are affected.

Started in October 2019, the decarbonICE project will run

Dry ice formed by cooling exhaust gasses to -120°C is formed into Carbon Descent Vehicles that sink to depths of about 500 meters, where they penetrate the seabed, storing CO2 safely as liquid CO2 and CO2 hydrate.



Silt- and sand-rich host sediments on the seabed in regions such as the Gulf of Mexico are the best locations in which to store CO2 in liquid or hydrate form, providing an environmentally-friendly, safe and permanent 'home' for captured greenhouse gas emissions.



All images MDC

"Shipowners should take responsibility and not compete but collaborate in the area of carbon footprint reduction to meet the 2050 zero-carbon target."

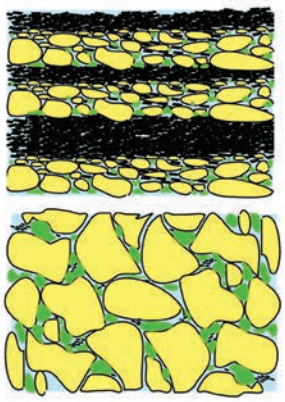
Henrik O. Madsen,
chairman of decarbonICE

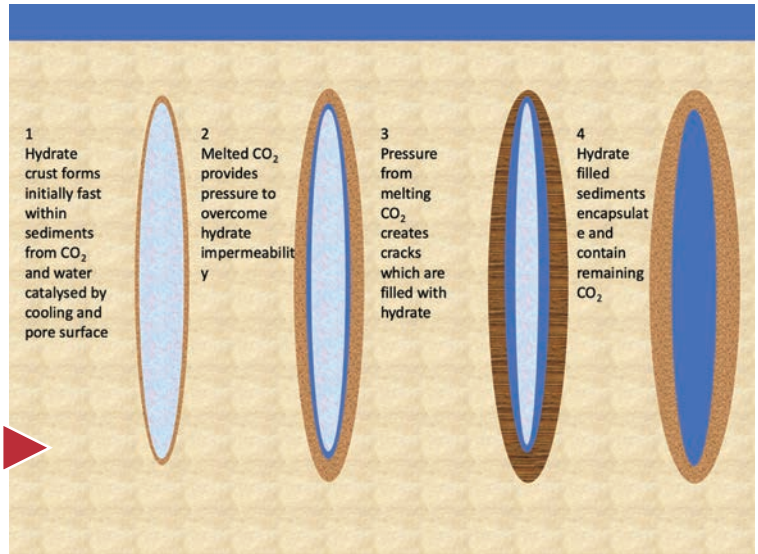
throughout 2020, initially with feasibility studies being conducted in the laboratory and the initiation of IMO approval for the technology. "Shipping companies will need to demonstrate the practicality and any operational issues or problems associated with the technology," said Madsen, "and full-scale operation will take place later on, however, the members of the project are already discussing the possibility of starting the first projects demonstrating parts of a decarbonICE technology on board a vessel."

A Solution for Newbuilds & Retrofits

The decarbonICE concept is intended to be applied not only on newbuilds, but also to be retrofitted onto existing ships, thereby adding extra impetus to efforts to achieve the IMO 2050 CO2 target. MDC said that in combination with future carbon-neutral fuels such as biofuels and electro fuels, the technology could create carbon-negative shipping and thus contribute to atmospheric carbon reduction at a significantly lower cost than shore-based carbon capture. "While we support a goal of availability of zero-carbon or carbon-neutral fuels, we believe that a bridging carbon-free solution is needed, utilizing existing assets in terms of ships, propulsion systems and fuels," said Madsen. "The decarbonICE project is intended to offer exactly that at a predicted low energy penalty well below 10 percent. However, we have no illusion that we can provide a 100 percent emissions reduction solution – even a 70-80 percent solution for deep-sea shipping would be very attractive."

As well as being developed for use with existing fuels such as HFO, MGO and LNG, the decarbonICE project also intends to develop a concept that will work in a future where neutral-carbon fuels such as biofuels or synthetic fuels ('e-fuels') become available. MDC said the combination of such fuels and decarbonICE would lead to carbon-negative shipping, in other words that shipping would in future reduce the amounts of CO2 in the atmosphere. MDC added that it may be possible that the first system could be installed on board a newbuild some three years after IMO approval of the technology and that retrofitting on an existing vessel could be achieved even more quickly.





Hydrate crusts formed within ocean floor sediments ensure the encapsulation and safe and effective containment of captured CO2.

United States Coast Guard

The USCG Polar Security Cutter

The good news is that work has commenced on the first new heavy polar icebreaker for the United States Coast Guard in 43 years. The bad news is that when it enters service, projected to occur in FY2024, it will be the first new heavy polar icebreaker for the USCG in 47 years.

Meanwhile, Russia has approximately 30 active polar icebreakers, including four that are nuclear powered. Arktika, the first of a new class of three heavy polar icebreakers, has commenced sea trials in the Gulf of Finland, with the other two under construction. Recently plans were approved for a new super-icebreaker larger and more powerful than any in existence.

At the end of World War II, the United States had seven Wind-class icebreakers, the most technologically advanced icebreakers in the world. These were gradually retired from service. The icebreaker Glacier was commissioned as a US Navy icebreaker in 1955, transferred to the Coast Guard in 1966, and decommissioned in 1988. The two icebreakers of the Polar-class, USCGC Polar Star and USCGC Polar Sea were commissioned in 1976 and 1977 respectively. Polar Sea has been out of service since 2010, when it suffered a major engine failure. Polar Star underwent an overhaul in 2013 and has returned to service. The Coast Guard also operates the medium polar icebreaker USCGC Healy, commissioned in 1999, which serves in the Arctic primarily on research projects, although capable of performing a wide variety of other Coast Guard missions.

USCG missions in polar waters

Coast Guard polar icebreakers are tasked with the following missions during extended voyages with minimal external support:

1. Defending US sovereignty in the Arctic by helping to maintain a US presence in US territorial waters in the region;

2. Defending other US interests in polar regions, including economic interests in waters that are within the US exclusive economic zone (EEZ) north of the Bering Strait;

3. Conducting and supporting scientific research in the Arctic and Antarctic;

4. Monitoring sea traffic in the Arctic, including ships bound for the United States or transiting through US waters;

5. Conducting other typical Coast Guard missions (such as search and rescue, law enforcement, protection of marine resources, and protection of the marine environment) in Arctic waters, including US territorial waters north of the Bering Strait; and

6. Supporting other federal agencies in performance of their missions in polar waters.

PSC design

The design of the PSC is based on that of the German polar research and supply icebreaker Polarstern II. The vessels have an overall length of 460 feet and an overall beam of 88 feet. Each will have a full load displacement of approximately 22,000 long tons. The propulsion will be diesel electric at over 45,200 horsepower, making it capable of breaking ice between six and eight feet thick. The icebreaker will accommodate 186 personnel comfortably for an extended endurance of 90 days.

The design 45,200 horsepower for the PSC is less than that of Polar Star., But with twice its tonnage and with design and propulsion improvements, the PSC's icebreaking capability is projected to be comparable.

Required numbers of PSCs

In 2011, the DHS Office of Inspector General reported that due to a lack of sufficient assets the Coast Guard was unable to meet a variety of its own mission requirements in polar regions, as well as missions requested by the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), the Department of State (DOS), and the Department of Defense (DOD). The report also stated:

Should the Coast Guard not obtain funding for new icebreakers or major service life extensions for its exiting icebreakers with sufficient lead-time, the United States will have no heavy icebreaking capability beyond 2020 and no polar icebreaking capability of any kind by 2029. Without the continued use of icebreakers, the United States will lose its ability to maintain a presence in the Polar Regions, the Coast Guard's expertise to perform ice operations will diminish, and missions will continue to go unmet. In 2013 the Department of Homeland Security (DHS) approved a Mission Needs Statement (MNS) for the polar icebreaker recapitalization project. It stated that the Coast Guard will need to expand its icebreaking capacity, potentially requiring a fleet of up to six icebreakers (3 heavy and 3 medium) to adequately meet mission demands in the high latitudes. The analysis took into account both the Coast Guard statutory mission requirements and additional requirements for year-round presence in both polar regions detailed in the Naval Operations Concept (NOC) 2010. In 2017, the National Academies of Science, Engineering, and Medicine (NASEM) issued a report stating that the United States has insufficient assets to protect its interests, implement US policy, execute its laws, and meet obligations in the Arctic and Antarctic because it lacks adequate icebreaking capability. The report recommended that Congress fund the construction of four polar icebreakers of common design to be owned and operated by the Coast Guard. The report

noted that the fourth heavy polar icebreaker could be built for a lower cost than the lead ship of a medium polar icebreaker.

The Coast Guard favors the DHS recommended approach of three heavy polar icebreakers and three medium polar icebreakers. I suggest that it consider the alternative of three heavy polar icebreakers utilizing the current design and then have three other heavy polar icebreakers constructed on the same hull and propulsion design, but with greater emphasis on oceanographic and atmospheric research in polar waters. Utilizing the same hull and propulsion design will save time and money in the construction phase.

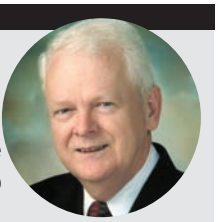
Procurement cost

The Coast Guard estimates the total procurement costs of its three planned heavy polar icebreakers as $1,039 million for the first cutter, $792 million for the second, and $788 million for the third. On 23 April 2019, the Coast Guard-Navy Integrated Program Office awarded a $745.9 million fixed-price, incentive-firm contract for detail design and construction of the first Polar Security Cutter (PSC) to VT Halter Marine of Pascagoula, Mississippi. Construction is scheduled to begin in 2021, although the contract includes financial incentives for earlier delivery. The contract includes options for the second and third PSCs. The Coast Guard plans to extend the service life of Polar Star until delivery of the second PSC, projected for FY2025. Congress is considering whether to fund the program as planned, whether to engage in a block buy of all three PSCs, and whether to procure three heavy and three medium polar icebreakers to a common basic design.

The PSC program has received a total of $1,169.6 million funding through FY2020. Planned budget requests for the PSC program for FY2021 and FY2022 are $555 million and $345 million respectively. If approved by Congress, the FY2021 appropriation would fully fund construction of the first PSC and allow initial work to commence on the second if the option is exercised. After a long (too long) hiatus, rebuilding of the Coast Guard's icebreaker fleet is finally moving ahead with all deliberate speed. The service with a long and storied history in polar waters will be back in force. Efforts must be taken to ensure that another gap in needed funding does not recur.

As Admiral Karl Schultz, Commandant, US Coast Guard recently said: "The mission has evolved so that you need to break ice to get to the mission, and just being there and accessing the Arctic is a projection of national sovereignty. It is a national security mission."

The Author



Bryant

Dennis Bryant is with Bryant's Maritime Consulting, and a regular contributor to *Maritime Reporter & Engineering News.*

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Contracts are Overrated in Maritime

My company has been around since 1875, and today we actually still do things that were being done in 1875. We still get calls from underwriters to attend on disasters all over the place, and we are still asked to provide values on ships on a moment's notice.

Moreover, some of the companies that ask us to attend to those issues, in some form or another, also have been around since 1875.

That results in a very smooth operational routine, where we get a call from one of those clients in the middle of the night, we pull our pants on, step into the car and go out to see what is going on. There is no discussion about compensation, there is no discussion about contracts, and there is no discussion about retainers. We simply go out.

We do this not with one or two or three trusted clients; we do this with dozens, if not hundreds, of clients, some of whom may only call once every decade or so. We have no contractual arrangements with any of them. We do the job, send the bill and get paid.

Occasionally somebody calls for the first time and wants us to go on a job and timidly asks if we need a purchase order, or a contract, or a retainer before we can start to move. Today we say: "Send us a quick email that has the various contact info and that simply says you want us to go out to do this thing." (We used to say send us a telex, and, for a decade or two, we used to tell them to send us a fax.) That email is very helpful because I generally cannot find a pen that works in the middle of the night, and to spell out a foreign sounding name on a bad telephone connection is even more frustrating.

If there is a little more time, I sometimes ask the new client a question first. I ask them if they know where we are based. Sometimes they know and sometimes they don't, but my answer is effectively the same: "We are located in New Jersey, therefore there is no need for a written contract. We always get paid." Whether the new client is from Oman, or Virginia, that response always invokes images of the *Sopranos*, and they chuckle and they send the email and we are on our way.

To the rest of the world this lack of contract may seem scary as hell, and sometimes people ask me if we lose a lot of money to people who do not pay. Weirdly, we rarely encounter a client who does not pay. It is truly rare and those who do not pay end up in a special category within our company. Remember, we are based in New Jersey.

Regardless, many years ago, after a number of those exchanges, I started to ponder the weirdness of the lack of contracts in my company's operations.

It turns out there is something about contracts that led me to develop this little graph. To me it provided some personal clarity, but it actually has very wide implication and application.

The little graph is shown in figure 1 to the right.

In effect there are four quadrants.

Quadrant 1 is a project that has predictability, but you do not know the client. This is where a standard contract may be of help. Hull and Machinery insurance and its associated contract (the policy) is a good example of that. A client in this quadrant may be a midnight call for me, and I may pass on the contract, but our mention of New Jersey actually is a form of a contract. Both parties know what to abstractly expect when the New Jersey Soprano clause is invoked.

Quadrant 2 is a client you know and a project that has high predictability. It is the call in the night where the client knows you will spend a certain number of days that will cost a certain amount of money, but then there will be a communication that

further increases project predictability. (In my business that is called a survey.)

Quadrant 3 is a project that has very little predictability with a known client. We occasionally get involved in those projects and then we warn our client that we may be doing a ton of work before we can even figure out if it was worth doing the work. We never have had serious problems with getting paid on those projects. We did not use a contract, but we did have a frank discussion with our client that it may be far from a pleasant financial experience. In those situations, you have to have faith that when the project does not work out the client does not lay the blame on your doorstep. These types of projects are not uncommon in the rest of the world and some very big projects have been accomplished under this approach.

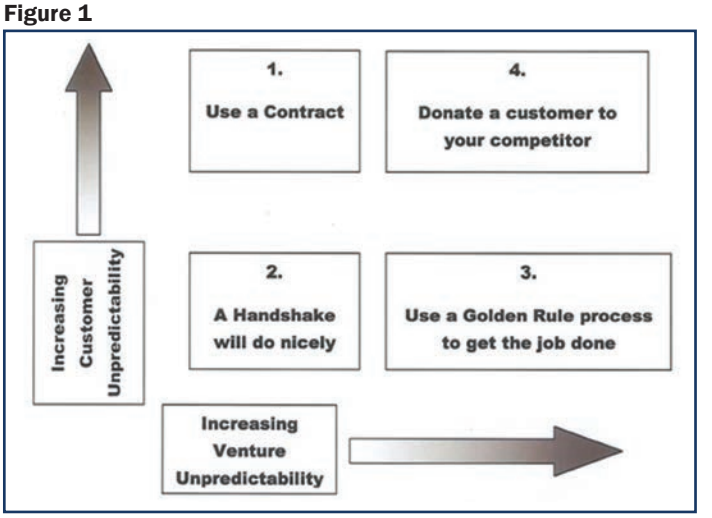
I have never done a deep study of the Nuclear Submarine Nautilus contracting structure, but I am almost certain that there were very many moments where the customer (Hyman Rickover) said to any number of contractors: "Just go give it a shot, we will pay whether it works or not, I just want to get it done." The pace of the Nautilus Project was so high that it is highly unlikely that there was a lot of contract development for each little step. The project simply ran on faith.

Another example was the agreement between George Washington and the Continental Congress, that he would work without a salary as the leader of the Continental Army, but would have his expenses reimbursed. (I can't help but try to imagine that negotiation.)

Quadrant 4 is where wisdom really comes into play. This is the type of project where you don't know the client and don't know where the project is going to end up. This is where the real risk comes in. A new company may have to take on such clients to grow, and some companies may have to take on such clients to simply survive. I had a business school instructor who defined these customers as the ones you want to send to your competitors.

I am not totally sure that is the optimal approach, but it is a simple answer to a complex issue. However, there are businesses where you have to deal with unknown clients on uncertain projects. Salvage is my favorite example, and the salvage industry has developed a solution that is called a No Cure, No Pay or Lloyd's Open Form contract, where it simply defers the cost resolution to a later stage and relies on an arbitrator. It is not a perfect solution, but it helps both parties at the moment when decisions need to be made.

Figure 1



The really neat part about the graph is that it can also show optimization movement. The trick is to get every one of your projects out of Quadrant 4 and to keep them out of Quadrant 4. The best way to do that is to build faith between you and your client. It is called business reputation, both for you and your client. Faith and reputation do not build in leaps; they build in small steps, many small steps.

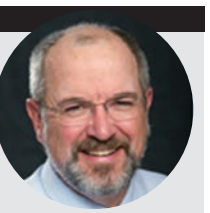
This explains why my company uses few contracts. Most of our new client contacts relate to relatively small projects as compared to our company size, and it allows us to test the waters before we get in deeper and allows us to take a risk on new friends we have not yet met. It also has a very important effect on efficiency. Not having to deal with contracts is a significant cost saver and benefits both the service provider and the client. I am not arguing for a world without contracts; what I am arguing is that there are many situations where contracts are not cost effective.

Remarkably, the whole marine industry is based on this type of cost effectiveness, and this is why we live with concepts such as Utmost Good Faith and the burden to provide assistance in time of emergency at sea, and also admire great Captains and Chief Engineers who run great ships and use the concept of "Trust your crew, but don't forget to verify."

We have contracts in the marine industry, but the best contracts are deeply standardized (BIMCOs) or are purposely quite simple (LOF). The mark of a novice in the marine industry is a player who insists on novel or complicated contracts and too often we are asked to help them sort things out after things go wrong; on those projects we do occasionally ask for a retainer.

For each column I write, MREN has agreed to make a small donation to an organization of my choice. For this column I nominate the American Salvage Association Educational Committee, which provides awards to young people who do research in marine science and engineering. Salvage is an almost incredible act of good faith on unpredictable projects. **http://www.americansalvage.org/education-committee.php**

The Author



van Hemmen

Rik van Hemmen is the President of Martin & Ottaway, a marine consulting firm that specializes in the resolution of technical, operational and financial issues in maritime.

Photos: Voith Turbo Marine

"The Voith Schneider Propeller is ideal for autonomous and remote-controlled vessels because on the one hand the forces can be managed very logically (according to X/Y logic) and on the other hand it can allocate desired forces so quickly. Together with partners, we have advanced the technology development to such an extent that remote-controlled tractors with VSP can be realized."

Thrust *& Control*

Dr. Dirk Jürgens heads R&D at Voith Turbo Marine, a part of the family owned Voith conglomerate which employs more than 19,000 people in 60 countries. Voith Rudderpropellers were chosen as the propulsion system for the three new Staten Island Ferry vessels, and Dr. Jürgens discusses the evolution of the system.

By Greg Trauthwein

The 'Voith' name is a well-known one in the maritime industry, but to start please provide an overview of the product and service you offer to the maritime industry.

The Voith Schneider Propeller (VSP) is a unique propulsion system that enables thrust adjustment extremely quickly and accurately. VSPs are built with up to 4 MW input power. The Voith Inline Thruster (VIT) is a very low-noise bow thruster and the Voith Inline Propulsor (VIP) – based on the same principle as the VIT – is an azimuth retractable thruster. Since the permanent magnet motor is directly integrated into the VIT and VIP, they are easy to install and require the smallest possible installation space in the ship. Voith is also the market leader and pioneer for this rim technology where the VIT and VIP are representatives.

The Voith Linear Jet (VLJ) is the latest product of our company and has proven itself as a propeller for fast vessels in the speed range of approx. 25 to 40 knots. The drive is compact, therefore the draft of the vessel can be reduced; provided that the propeller is the limit. The main features of the VLJ are high efficiency and quiet running. Our products differ significantly from competitive solutions and have clear unique selling points. They require a high level of hydrodynamic and engineering knowledge.

In the grand scheme of Voith overall, how big is the maritime business? What advantages come with being a part of a large, multi-faceted conglomerate?

Voith is a relatively large company and the marine's share of total sales is small. But our marine products are a good ambassador for the Voith company - as a manufacturer of engineering products with a very high customer benefit and a high degree of differentiation from competitive products. As a marine company, we benefited greatly from the know-how from other Voith areas, such as transmission technology, knowledge from hydro power technology and automation technology.

Photos: Voith Turbo Marine

Broadly speaking, what are the main types of vessels where we would find the Voith propulsion solution?

You will find Voith Propellers primarily in tugs, ferries, yachts, mine countermeasures vessels and, of course, offshore support vessels for many years.

What are the primary performance benefits?

Voith propellers can be found wherever the demands on maneuverability, efficiency, ship safety and comfort are high. The decisive feature of the Voith Schneider Propeller (VSP) is its fast and accurate thrust adjustment; no other type of propeller comes close. The fast thrust adjustment and a different type of thrust adjustment (according to an X/Y logic and no turning of a thrust vector) bring immense advantages for maneuvering vessels or dynamically positioning (DP) vessels. These lead to more safety, operations in higher seas and lower fuel consumption.

The Voith Inline Thruster (VIT) is characterized by very quiet running. It is very easy to install, since the electric motor is integrated on the outer ring (at the rim), only power supply cables have to be connected. As a result, it also requires very little installation space.

The Voith Linear Jet (VLJ) is a propulsion system for fast vessels with high demands on efficiency and comfort. The efficiency of the VLJ is very high especially at speeds that are a challenge for the screw propeller. It is the best solution where screw propellers get problems (speeds higher than approx. 25 kn) and water jets are very inefficient (speeds lower than approx. 35 kn).

The Voith propulsion solution has obviously been in the market for many years. How has the company invested to further improve the system?

In the last five years we have successfully launched numerous R&D projects and practice-relevant results are available. For example, we have improved the dynamic stabilization capability of Voith propelled vessels, based on model tests and complex numerical optimizations.

We have installed the Voith Condition Monitoring Technology (CMS) on numerous ships and evaluate the data intelligently. We use this data on the one hand to further reduce the service costs for our propellers and also to find the optimal setting of the propellers to minimize fuel consumption and emissions.

One research focus that is very important to us is the development of the technology for remote-controlled tugs. The Voith Schneider Propeller is ideal for autonomous and remote-controlled vessels because on the one hand the forces can be managed very logically (according to X/Y logic) and on the other hand it can allocate desired forces so quickly. Any sensor errors or errors in data processing can therefore

Photos: Voith Turbo Marine

best be compensated by the VSP. Together with partners, we have advanced the technology development to such an extent that remote-controlled tractors with VSP can be realized.

In summer 2020, we are planning a practical test in Rotterdam with the Carrousel Rave Tug (CRT) of the Mutraship shipping company.

At the same time, a major research project is underway in which we are working on a Voith ferry on the river Rhine which will sail autonomously.

We are making serious improvements to the Voith Schneider Propeller itself. Our biggest step: we are building a high-quality permanent-magnet electric motor directly into the VSP. The fully electrical VSP is then called eVSP. It will be a gearless VSP with a significant improvement in efficiency and many advantages for ship owners in terms of economical electric drive solutions.

Of course, we have made the VSP suitable for biodegradable oils and tested them very successfully.

We have developed improved seals and thus extended service intervals by more than 50%.

To improve the design of our propellers for ice loads, we have manufactured a very large VSP model propeller and fitted it with numerous sensors. We then took very detailed measurements of this propeller in the ice tank at the Hamburg Model Basin (HSVA).

As our propellers are quite different from classic azimuth thrusters, we are motivated to be strongly involved in the optimization of ship hulls through our CFD activities and have developed modern optimization technologies. We see ourselves as partners of designers and shipyards for the integration of our propellers and are happy to support them in designing the hull so that it is optimal for Voith Propellers.

How is Voith investing today, to ensure that its propulsion solutions are viable for the coming years.

We are known for investing considerable resources in R&D. As one of the few propeller manufacturers, we actively operate a relatively large circulating tank, which we constantly use to improve our propellers.

We have a powerful CFD department and our own ship handling simulator. Our tools are used to improve our propellers and especially the ships with our propellers.

The current focus is on the development of autonomous Voith vessels, remote-controlled Voith tugs, modern CMS technologies coupled with artificial intelligence and of course the electrification of our propellers. With the VIT, we have been using electric propulsion for more than a decade.

Much talk today in the maritime and maritime propulsion world focuses on Emission reductions. How, specifically, has this international push to significantly reduce greenhouse gas emissions impacted your work, your systems?

We are committed to reducing emissions through various measures. The new ferries of the Kiel Canal, for example, were designed by us in close cooperation with the state-owned operator. The aim was to reduce emissions and to enable largely fully electric operation.

Our new eVSP enables easy operation using batteries, fuel cells or any hybrid solution. With the VIT, we have been involved in electrification for a long time. But efficiency improvements and hull optimizations as well as better DP performance also contribute significantly to reducing emissions. The reduction of emissions is a central point of our R&D activities.

What do you consider to be the greatest challenge in your job?

As an R&D manager it is a privilege to be in a position to develop technologies for the future. Our team has developed and launched numerous technical innovations, such as the Voith Roll Stabilization, the Voith Inline Thruster, the application of the VSP on offshore support vessels; currently we are working on autonomous vessels and remote-controlled tugs.

The biggest challenge for me is to make the step from technology development to practical implementation. Shipbuilding is

conservative for good reason. Therefore it is a Herculean task to realize the first application of a new technology. For us this means convincing the ship-owner that our innovative development works.

We recently featured the new Staten Island ferries in our pages. When I spoke to Jim DeSimone and his team they had high praise for the Voith solution, as maneuverability and safety are paramount to their operations. Please describe in detail this project, and specifically the Voith units that will be featured on this high-profile ferry build program.

The Staten Island Ferry has always been one of the most important applications for our propellers. We have been very committed to ensuring that Voith Schneider Propellers are allowed to drive the new three ferries. We have done a lot to achieve this, such as carrying out numerous CFD calculations and actively supporting a gigantic model test program in the renowned Dutch research institute "MARIN". The state-owned ship-owner then decided together with us that the ferry should be equipped with two large VSPs (the type VSP 36RV6); the alternative would be four smaller VSPs (e.g. the type VSP28). In this way the optimum in terms of robustness and power efficiency could be achieved.

We are always in close contact with the state ship-owner and then also with the shipyard. Also the electronic control of the VSPs and the switching of the gas engines (two on each VSP) is realized by us. This is done via two very powerful fluid couplings (Voith Turbo couplings).

The challenges for the Staten Island ferry are extremely high, because a large number of passengers have to be carried, the ferry can also be exposed to extreme wind and currents and ice also creates special loads on the propellers. It is precisely because of these challenges that the VSP is the right propeller.

Meet Dr. Dirk Jürgens

Dirk Jürgens studied Naval Architecture at the University of Rostock from 1983 till 1988. From 1988 until 1993, he worked as a research assistant at the University of Rostock and at the University of Hamburg. In 1994 he finished his PhD theses about the hydrodynamics of Voith Schneider Propellers. From 1993 unti 1999 he worked at the Ship Yard Blohm & Voss in Hamburg as manager of a R&D group for the development of propulsion and maneuvering devices. Since 1999 Dirk Jürgens has been the Manager of Research and Development of Voith Turbo Marine.

Photo: Voith Turbo Marine

Building Momentum

The promise of a vibrant U.S. offshore wind business has been long in the making. While questions remain on timing and pace, there is renewed confidence in the offshore wind sector, particularly in the northeast United States (global pandemic notwithstanding). Investment in the sector had escalated to start 2020, embodied best by Reinauer Group and its WindServe Marine unit, which when combined with its Senesco Marine boatbuilding and logistics hub give its an ' A-to-Z, soup-to-nuts' enviable position to build, own, operate boats, as well as stage logistics, for offshore wind operators.

By Greg Trauthwein

"We want to be known as local experts in the local offshore region," is how Josh Diedrich, Business Development, WindServe, neatly summarizes his companies value proposition. "We've specialized in the Northeast (U.S.) for a number of years, we know the local ports, the local infrastructure and the local waterways. We are taking that local knowledge and coupling it with this emerging offshore wind market."

That local knowledge could be particularly important, as the New York/New Jersey area, by early estimates, look to be the clear leaders in terms of total power produced. While Massachusetts should be first out of the gate with a large scale project – Vineyard Wind, pending final permitting – states all the way through Virginia are poised to contribute. "New York and New Jersey will be the biggest markets for sure," said Diedrich, noting that they have the most solicitations out. "For example New York wants 9000+ MW, whereas Massachusetts is looking at 1500 to 2000 MW."

While WindServe is positioned to be the local expert, it's also positioned to be a one-stop-shop, with its breadth of operation, manufacture and service. "WindServe is a turnkey solution for offshore wind," said Diedrich, with fabrication, lay down and storage (26 acres of lay down and storage in RI); vessel ownership and operation.

Something Old, Something New

While a depression in oil pricing has sent a number of vessels

The new Crew Transfer Vessel being built at Senesco for WindServe highlights Senesco's recent investment in aluminum construction capability. The new CTV will be powered by four Scania DI16 082M 800 hp (588kW) @ 2,100 rpm,for a total installed power of 3,200 hp, driving quad HM461 HamiltonJet waterjets.

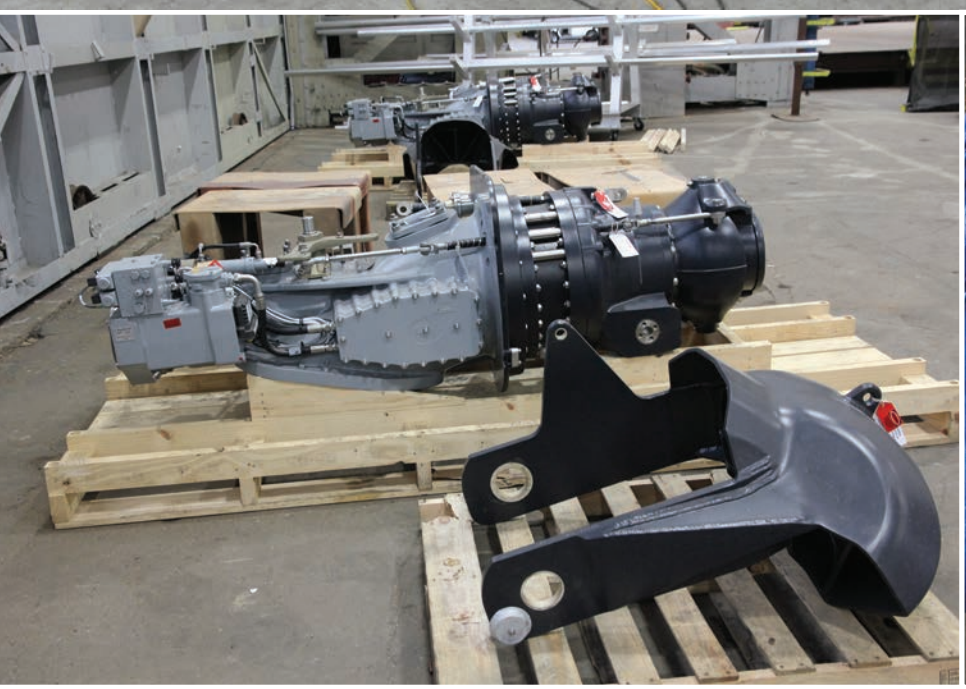


Photo: Senesco & Greg Trauthwein

Photo: Greg Trauthwein

serving the traditional offshore market into lay-up, there does not appear to be a tremendous demand for converting oil patch tonnage into vessels capable of working in offshore wind, as offshore wind, premised on more than a generation of experience operating in European markets, has many particulars in terms of safety and performance.

"This is a newbuild market," said Diedrich. "Most of the developers want newbuild vessels, they don't want to pay the price for it, but they want it purpose-built for a specific windfarm. You can retrofit something, but you won't be able to operate in the same sea conditions or operate as efficiently as if you had a purpose-built vessel."

For example, the preferred Crew Transfer Vessel design is a catamaran with crew transfer at the bow. "It's bow-in at the ladder, with a flat bow so they can have a flat bow fender pushing on the tower with full thrust," said Diedrich. "The captain can look down to see what's going on. It has been one of the safest modes of operating in Europe for the past 10-15 years, and the statistics tell the story. It's going to be catamarans, SOVs and helicopters for crew transfer."

Looking at the SOV, which as Diedrich described as an "OSV on steroids", in a newbuild versus retrofit scenario, the central area of focus is on the vessels stability as it relates to lift capacity and crew transfer gangways. A new purpose-built vessel (Diedrich estimates there will be two ordered in U.S. shipyards this year to be ready for work in 2023) allows for ideal placement of these critical elements – particularly the gangway – while a refit would likely require compromise. Once the technicians are on the tower, it's all about ergonomics: getting them in position to do their job safely and efficiently. "They want to make sure that the technicians don't have to carry any heavy loads, they want to make sure that everything can be rolled easily to get their tools and parts where they need them, when they need them."

The Time is (almost) Now

With the arrival of offshore wind in significant scale in the U.S. comes the promise of a revitalized marine industry, much as was the case for the evolution of vessels serving the traditional offshore energy markets. The big question: When will it start in earnest?

"We see 2022 will be the begin stages of heavy construction, that's when you'll see the first phase of vessels being needed for the northeast," said Diedrich. (*Note: this interview took place simultaneously with the COVID-19 outbreak in the U.S.; significant information is not yet available to determine its impact on the offshore wind industry.) "Projects will start to go off, with four or five years with multiple projects."

"The assets needed to do the job will be limited and very valu-

"What I see is complete difference in the types of things we build, from tugs and barges to offshore wind support vessels and structures. The market has changed, and we have a great opportunity to go after this new market."

Mike Foster
Vice President and General Manager at Senesco Marine

Photo: Greg Trauthwein

able," he said, noting that scheduling the high-value installation vessels would be "particularly tricky" as projects start to overlap, and in tandem with the simultaneous offshore wind expansion in Europe.

"If we don't have purpose built heavy lift vessels that are Jones Act (compliant), we'll have to use European vessels, and there's only a handful that can install a 12MW turbine, which is what we're looking at here in America," said Diedrich. Overall, he sees a 10-year period through 2033 where there will be a lot of heavy construction. "What we see on the radar now could be only a fraction of what's to come, as other states see the development of clean energy, the employment numbers, and they'll want to jump onboard."

Senesco Marine Prepares for Offshore Wind Push

While COVID-19 continues to dominate the business conversation globally, when the virus clears all eyes will be on the burgeoning offshore wind market on the east coast of the U.S. Mike Foster, Vice President and General Manager at Senesco Marine, was eager to showcase his yard's new aluminum building capabilities and check in on the new Crew Transfer Vessel (CTV) being built for WindServe.

Since 1999 Senesco Marine has been building steel vessels to regulatory standards, occupying 26 acres of Narragansett Bay waterfront property in Rhode Island. It is a small but efficient shipyard which literally sits in the shadow of one of the world's preeminent navy shipyards, General Dynamics Electric Boat, the builder of nuclear submarines for the U.S. Navy.

Senesco has traditionally built tugs and barges for the energy transportation industry, including its parent company Reinauer, but Foster sees this changing.

"What I see is complete difference in the types of things we build, from tugs and barges to offshore wind support vessels and structures. The market has changed, and we have a great opportunity to go after this new market," said Foster.

'Going after this new market' required investment for the yard, which meant bringing in the equipment and the know-how to build aluminum boats. With the new capability it won the contract to build a new aluminum crew transfer vessel (CTV) for sister-company WindServe Marine, which has the contract to build and operate the vessel for Orsted.

The 64.7 ft. (19.7m) CTV is currently under construction, being built to a BMT design.

The aluminum high-speed catamaran will be powered by four Scania DI16 082M 800 hp (588kW) @ 2,100 rpm – for a total installed power of 3,200 hp – driving four Hamilton waterjets. HamiltonJet – an 80+ year old family owned company with 400 employees and a long history supplying the offshore wind sector, supplied the four HM461 waterjets integrated with its AVX controls and the JETanchor positioning system onboard. AVX is HamiltonJet's next generation of vessel controls, its platform for an increasingly connected future in the maritime sector. The AVX JETanchor provides a range of new capabilities with three automatic operational modes: 'station keeping', 'virtual anchor' and 'precision maneuvering' modes. At press time the Senesco was working at full capacity, and the CTV is projected for delivery this spring.

Senesco Marine: ISO 9001 Certified

Perhaps most significantly, Senesco earned its ISO 9001:2015 Certificate in late February 2020, a development that directly driven by the growing interest in offshore wind vessel work. While Foster admits that the yard already had about "99% of the processes" in place, he said the quality stamp and certificate was necessary because when then yard meets with any of the European companies regarding building for the offshore wind market, invariably the first question they as is "are you ISO 9001 certified?". While many of the processes were already in place, Foster sees true value in the exercise to acquire and keep the certificate. "It's helpful to us as a company, and managers on how we manage the various processes under ISO9001 and to maintain it. It's a roadmap to follow."

Traditional Shipbuilding Business

While aluminum vessels and offshore wind are the future for Senesco, it still maintains its traditional steel newbuild and repair work for the workboat industry, and a big driver has been, and will be, the fitting of Ballast Water Management Systems for the Reinauer fleet. According to Foster, Senesco recently completed its fourth BWMS installation, with the fifth in the works aiming for a May 2020 completion.

"Repair work has been strong of late," said Foster, "with a big log book looking forward, particularly with the Reinauer BWMS work."

While the yard has completed a significant number of BWMS jobs, Foster said each posed a unique challenge as none of the boats were exactly the same, with the different ATB connection systems in particular posing interesting challenges. But with the latest completion, Foster said that a corner has been turned and the jobs are no longer unique engineering jobs. "We've gotten to a place where we can repeat the process, same class and series. We have the engineering knowledge and the installs are becoming easier … we have the experience, knowledge and the drawings."

In addition to the CTV newbuild and the repair work, the shipyard is in the midst of building a 4,000 hp ATB tug (Hull 218) for Reinauer Transportation, currently setting the engines, equipment and the house with an estimated delivery of September 2020. In addition it is just starting a contract for an unnamed client to build a 450-ft. bulk barge, with comes with an option.

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Photos: Island Offshore

Powering up for deep water efficiency

Can more powerful offshore vessels be a benefit to the environment? Tommy Walaunet, Managing Director at Norwegian offshore ship owner Island Offshore is certain of it.

By Saul Trewern

While facing the same challenging market conditions as offshore vessel owners and service companies worldwide, Norway's Island Offshore recently broke free from the enforced conservatism of the E&P sector, by adding not just a new ship to its fleet, but one that re-writes the rulebook in capabilities, technology and despite its size and power, environmental credentials.

Simply put, Island Offshore's new deep water installation Vessel 'Island Victory' is the most powerful multi-purpose offshore vessel ever built; a point proven during bollard pull tests conducted by its builder VARD last November with a towing power of 477 tonnes recorded, smashing the existing record of 423 tonnes.

Such tests could be viewed as at least an irrelevance, when the world faces the effects of man-made climate change, but Tommy Walaunet, Managing Director at Island Offshore is quick to point out that Island Victory's extreme power and com-

Photos: Island Offshore/Droneinfo

bination of capabilities will help clients to reduce the environmental impact of their deep water operations.

"Island Victory's brute strength enables heavy duty, deep water mooring using a single vessel, when before, two or three would be needed to carry the loads and achieve the same outcome," explains Mr. Walaunet. "We need the power and deck space for mooring operations and transport of wires and chains, but when compared to using multiple vessels for the same job, Island Victory can do it using less fuel and with lower emissions."

A true multi-purpose behemoth, with a length of 123 metres and breadth of 25 metres, Island Victory boasts a 250-tonne offshore crane, accommodation and diverse client facilities for 110 people, and a working deck measuring 1200 m2. The market already seems to be taken by its extreme capabilities. Delivered to Island Offshore on February 7th this year, she started work immediately and is booked solid through to November already.

"We see a lot of interesting projects for Island Victory, but we are well aware that it's not a spot vessel in the traditional sense," says Mr Walaunet. "While perfectly capable, its scale and power could be excessive for standard anchor handling work, but there are a lot of interesting projects involving FPSOs and offshore windfarms internationally in the next few years and this is where we see some great opportunities."

Environmental progress

Island Victory is designed to offer a means to achieve more efficient deep water operations by being capable of doing jobs usually performed by multiple vessels, but Island Offshore is well aware of the challenges ahead for its whole fleet as regulations continue to pressurize the industry to reduce its environmental impact across the board.

"Environmental requirements, especially over the last year have come on really strong, both commercially and politically," says Mr. Walaunet. "It's a challenge for us all today and will be for decades to come, despite progress the industry has already made in the last 10 years to reduce fuel consumption and emissions."

Taking the measures needed to further cut greenhouse gas and CO2 requires ring-fenced Capex funding, which in a general downturn is not always easy to secure. According to Mr Walaunet however, while the sector might have been a bit behind on investment, more funds are becoming available.

Photos: Island Offshore

"We've done a lot over the years to reduce fuel usage. Working on hull designs, ship designs, optimising machinery and configuration of vessels has all provided environmental and financial efficiencies. We're now investing in and deploying hybrid solutions using battery packages and digital technology to optimize our operations. For most vessels we see tangible savings not just on fuel use, but also through reducing machine hours and therefore the cost of maintenance."

Diversity delivers sustainability

Island Victory joined the Island Offshore fleet as a three-year company restructuring plan enters its final phases and Mr Walaunet is confident that the decision to invest in such an extensive undertaking was the right one. "As a privately-owned company we are fortunate to have investors with an understanding of, and appetite for risk," he explains. "This gives us the ability to identify and drive new opportunities with concepts that bring something new to the market. It's a key strength especially when a general market downturn has forced restructuring throughout the industry."

The early stages of Island Offshore's own restructuring saw the sale of two smaller Platform Supply Vessels, but 46-year-old Mr. Walaunet, who became Island Offshore's MD in September last year after starting at the company in 2007, believes the 28-strong fleet is well placed for the future.

"The diversity in our fleet is a strength for us. We can't rely on all segments being profitable at the same time, so by offering a spread of vessel types we can reduce our market exposure and ensure we have the right capabilities for our clients when they are needed."

Developing opportunities

Island Offshore's fleet is made up of three mooring and installation, three light well intervention, three subsea support, three well stimulation and 12 platform supply vessels. It's completed by four walk-to-work (W2W) vessels, an important part of the business that has grown considerably for Island Offshore in recent years.

"We saw that the market was satisfied with standard OSV and PSV tonnage and we were looking for niches where we could add value to our vessels and find

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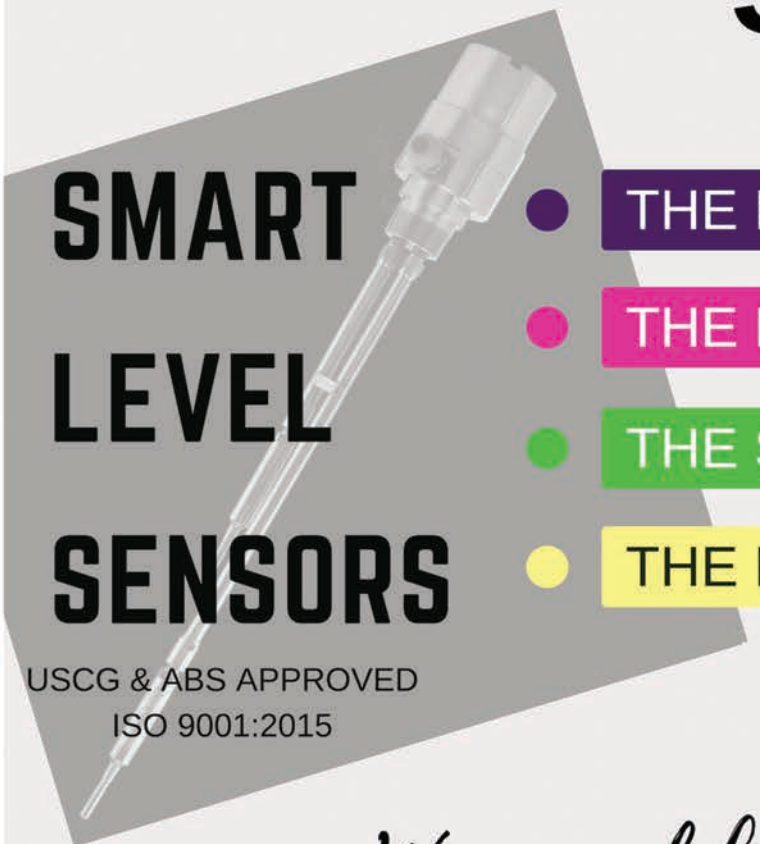

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work outside of the extremely competitive OSV market. We converted the first vessel to W2W in 2013 by adding a special crane and gangway, in addition to accommodation and a helideck."

The investment has delivered an impressive track record in the growing W2W sector and has so far led to three further vessel conversions. Island Offshore now has two W2W vessels working for offshore wind clients and two operating on oil & gas projects. While offshore wind vessels have developed in line with market growth, part of the decision to produce W2W vessels for oil & gas was based on a less immediate, but potentially significant need.

"We are really combining different uses for the oil companies. Our newest W2W vessel, Island Clipper retains most of its original PSV capacities, but we have expanded its capabilities with a flexible gangway that can be mobilised within 48 hours, making it an ideal solution for maintenance on unmanned installations – the number of which is growing in the North Sea. Looking ahead the safe passage and transfer these vessels provide could be a real alternative to helicopters for some projects."

Navigating a recovery

The introduction of Island Victory and Island Clipper shows that something is being done right at Island Offshore's HQ in the well-known offshore industry town of Ulsteinvik on Norway's west coast. And while the eagerly awaited 'recovery' or signs of a new offshore boom are certainly not on the near horizon, forward thinking fleet diversification is seeing some players return to a semblance of stability.

For Mr. Walaunet and Island Offshore, navigating the financial challenges of recent years and the environmental challenges ahead means taking calculated risks based on experience and an understanding of the industry. It helps when everybody is on the same page.

"Having owners that are very industrial with a lot of knowledge about vessels and industry needs allows us to identify opportunities outside of standard tonnage. I believe it's this that has enabled us to hit all of our restructuring targets and provide the new capabilities of Island Victory for complex deep-water projects that are contributing to re-shaping the offshore industry."

ISLAND VICTORY SPECIFICATIONS

Ship Name.....Island Victory
Owner.....Island Offshore Management AS
Type.....Deep Water Installation / .....Anchor handling – DP II
Design.....Kongsberg Maritime UT 797 CX
Ship Builder.....Vard
Material.....Steel
Delivery.....February 2020
Length, (o.a.).....123.4 m
Length, (b.p.).....112 m
Breadth, (molded).....25 m
Depth, (molded).....10 m
Draft, (designed).....8 m
Draft, (scantling).....8
DWT (at design draft).....5899
DWT (at scantling draft).....6264
Speed .....max 18,75
Fuel Type.....Fuel oil
Main engines.....
2x RR Bergen B32:40V16PCD 8000kW each + 4 RR Bergen C25:33 L9 2880 kW each + 2 x MTU 16V4000M34 1999 kw each

Total installed power.....42,880 HP
Bow Thrusters
2x RR TT2650 DPN CP 1600kW each | 1x RR Azimut Swing up TCNS092/62-220 2000kW - stern 2 x RR 2400 DPN 1200 kW

Propellers.....2 x RR CPP 1
Bearings.....Wartsila/Cedervall
Gears.....Scana Volda
Generators..4 x Marelli MJRM LB8 (gen set)
Engine controls.....Kongsberg RR Bergen
Radars.....Furuno
Depth Sounders.....Furuno
Auto Pilot.....Marine Technology
Radios.....Sailor
AIS.....Furuno
GPS.....Furuno
GMDSS.....Sailor
SatCom.....Marlink
Mooring equipment.....Konsgberg winches
Fire extinguishing systems..Danfoss Semco
Fire detection system.....Consilium
Heat exchangers.....Alfa Laval Nordic
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Lifeboats...Harding Safety/Palfinger Marine
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Coatings.....Akzo Nobel
BWMS.....Optimarin

Class.....DNV+1A1, Offshore Service Vessel+ AHTS, SPS, NAUTT-OSV (A), ICE 1A*, EO, DYNPOS AUTR, CLEAN DESIGN, DEICE, COMF-V(3), T-MON, BIS, DK(+), HL (p) OILREC, LFL*, COMF-C(3)
Cargo deck area.....1,200 sq. m.
Rig chain lockers (7 lockers)....2,765 cu. m.
Rig chain lockers
incl. moon pool lockers.....2,200 cu. m.
Moon pool capacity..... max 800 T
Accommodation 110
Bollard Pull .....477 T
Moon pool..... 8.0 x 7.2 m. (526 m3)

Work ROVs
2x Fully integrated WROV and LARS system permanently installed on board, for depths up to 4000 meter (1side/1moonpool)

1x Offshore AHC crane
250t/17m-20t/40m- wire length 3000m

1x Deck crane 6t/20m- 12t/10m

2x Cargo rail cranes
PS RR Capacity 2,8t/3,2m- 15,4m outreach 15t/3m / -SB RR Capacity 2,8t/3,2m- 15,4m outreach 15t/3m

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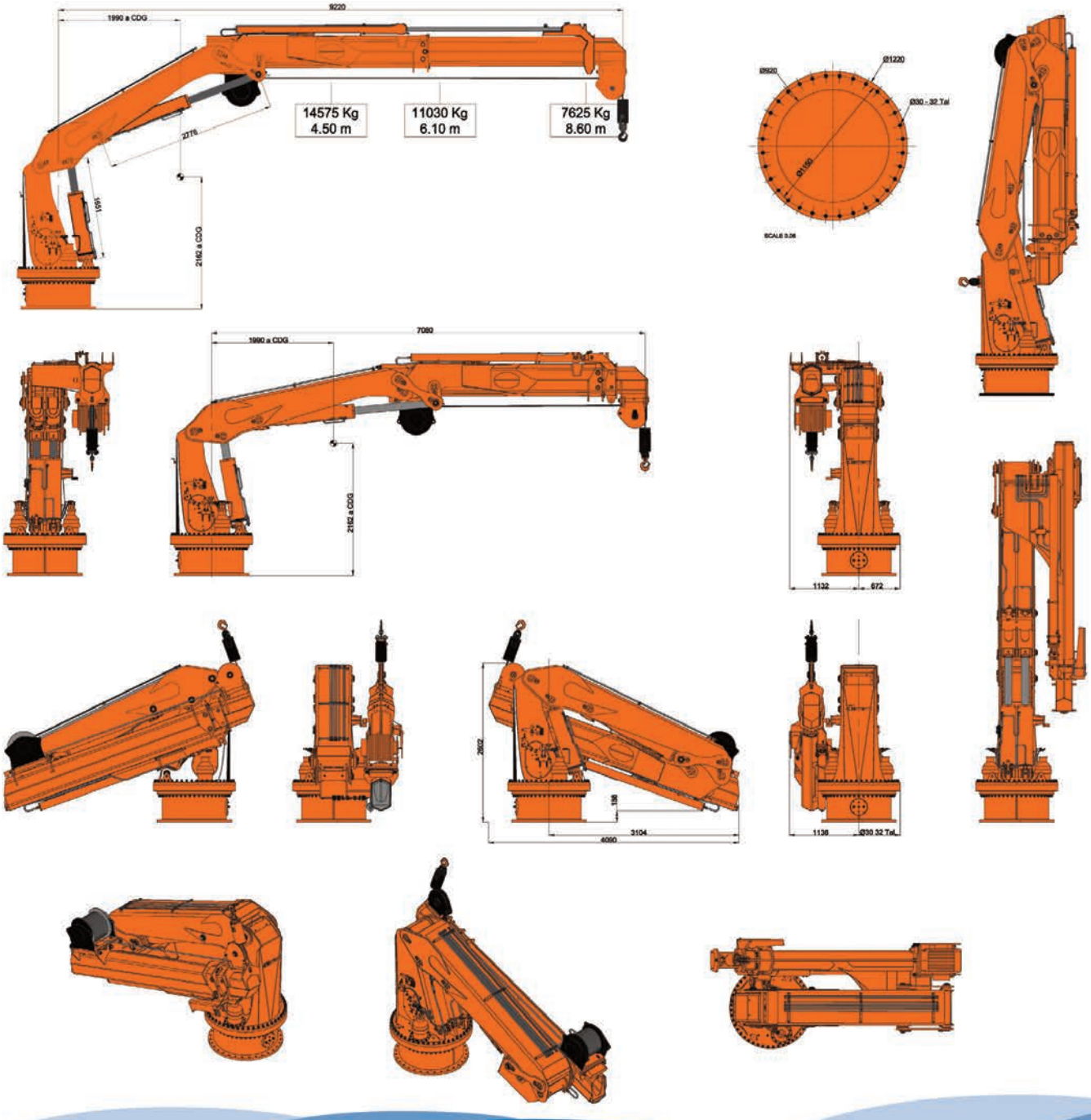

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Liebherr Celebrates “50” in U.S.

When it comes to heavy lifting in the maritime, offshore and port/logistics market, Liebherr is a name synonymous with quality and and progressive technology. The company, which was born in 1949 in post-war Germany, when Hans Liebherr, who was managing his parents’ building firm in South Germany, recognized the need for tools and machinery for the building industry and domestic construction. Together with design engineers and tradesmen, he develops the first mobile tower crane in 1949.

In 2020 Liebherr celebrates another significant milestone, its 50th anniversary operating in the United States with the tagline “United by Success.” Headquartered in Newport News, Va., Liebherr today offers a vast range of solutions including gear technology and automation systems, aerospace and transportations systems, domestic appliances, components, concrete technology, earthmoving equipment, tower cranes, mobile cranes, mining and, of course, maritime cranes.

The 50th anniversary milestone is not simply about taglines and parties, rather Liebherr solidifies its commitment to North America with the scheduled completion of its expanded Newport News campus in spring 2020, and also include the introduction of new technologies.

A Family Business

Since day one, Liebherr has been a family owned and independently operated company, enabling it to create a culture that fosters leading-edge thinking with unlimited possibilities. The direction the pioneer Hans Liebherr once started the business with is still inherent throughout the organization, and today the company is led by second and third generation family members. This includes company values, innovation and craftsmanship, and at the very heart of it: putting customers and employees at the center of all things.

Spanning more than 130 companies across all continents, with 46,000 employees worldwide including 1,300 in North America, the group’s independent corporate structure puts the company in a position to react flexibly to competition and transform ideas rapidly into impactful and lasting results.

Celebrating “50” in the USA

With its 50th anniversary theme “United by Success,” the manufacturer remains focused on its commitment to U.S. customers. Liebherr has been producing in the U.S. since 1970. The company is one of the leading North American suppliers of construction machinery and other technically advanced, user-oriented products and services. The manufacturer sells and distributes products throughout its own locations and through an independent distribution network. Throughout 2020, Liebherr will focus on 10 product divisions across the U.S. in addition to its commitment to the success of customers, business partners and employees. “The ‘United by Success’ campaign shows that our customers and our company are one through each other’s successes and are stronger together,” said Torben Reher, managing director of Liebherr USA, Co. The anniversary campaign will engage with customers on web, social media and industry events, including a dedicated U.S. anniversary landing page and video.

Expanding into the Future

To keep pace with its growth, a new $60 million state of the art expansion will be completed in spring 2020 in Newport News, which will be home to Liebherr USA, Co. The new site is adjacent to the company’s current facilities, where Liebherr has operated for its first 50 years. The new buildings will add more than 251,000 sq. ft. to the existing 560,000-sq.-ft. campus. Additionally, Liebherr has 13 other locations across the U.S.

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- Passes U.S. EPA Static Sheen Test 1617.
- Passes U.S. EPA Acute Toxicity Test LC-50.
- Ultimately Biodegradable (Pw1) Base Fluid – 75.2%.
- For Use On Articulated Tug Barge (ATB) Notch Interface, Coupler Ram and Drive Screws, Above Deck Equipment, Rudder Shafts, Wire Rope, Port Equipment and Cranes, Barges and Oil Platforms.

BIO-SYNXTREME HF SERIES HYDRAULIC FLUIDS

- Meets U.S. EPA Vessel General Permit (VGP) Requirements.
- Advanced Synthetic Polyalkylene Glycol (PAG)-based formulas.
- Non-Sheening – Does not cause a sheen or discoloration on the surface of the water or adjoining shorelines.
- Provides long service life and operating reliability, lower maintenance costs, and reduced overall downtime.
- Excellent Anti-Wear Performance - Rated as anti-wear (AW) fluids according to ASTM D7043 testing and FZG testing.
- High flash and fire points provide safety in high temperature applications.
- All Season Performance – High viscosity indices and low pour points.
- Biodegradability – Readily biodegradable according to OECD 301F.
- "Practically Non-Toxic" to fish and other aquatic wildlife according to the U.S. Fish and Wildlife Service hazard classification.

VGP COMPLIANCE STATEMENT LUBRIPLATE ATB BIOBASED EP-2 GREASE and BIO-SYNXTREME HF SERIES HYDRAULIC FLUIDS are Environmentally Acceptable Lubricants (EAL)s according to the definitions and requirements of the US EPA 2013 Vessel General Permit, as described in VGP Section 2.2.9

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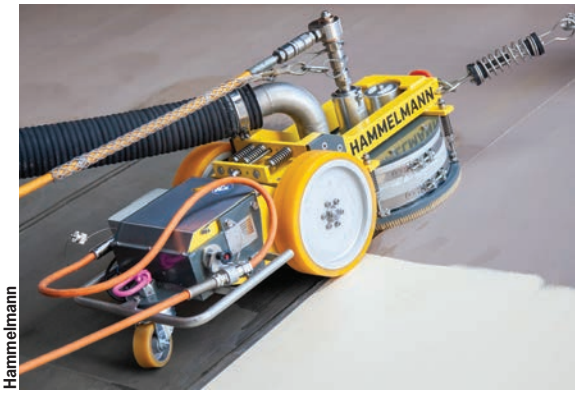
Jotun Debuts Hull Skater

Jotun

Jotun launched the Hull Skating Solutions (HSS), designed to give vessel owners a proactive hull cleaning solution. Technology partners in the project include Kongsberg, Semcon, DNV GL, Telenor, as well as shipping companies Wallenius Wilhelmsen, Berge Bulk and Maersk. HSS is designed to provide condition monitoring, inspection and cleaning, technical service and performance and service level guarantees. It is touted by Jotun as using a proprietary algorithm and big data to accurately predict fouling development and cleaning schedules. While there have been several robotic hull cleaning solutions used in the industry, Jotun is calling the HSS robotic tech unique in that it has been purposely designed for proactive cleaning, and in combination with the SeaQuantum Skate antifouling and a set of services, the HSS will help ship operators combat early stages of fouling. HullSkater stays on the hull via magnetic wheels, each equipped with electric motors for propulsion and steering. The vehicle has several cameras and sensors, supporting the operator with data for navigation and documenting fouling on the ship hull. The motorized brush are intended to keep the hull free from fouling without causing erosion or damage to the hull coating. The vehicle is connected to the operator's control center through an umbilical and can be operated remotely for vessels anywhere in the world with 4G coverage. Inspection and proactive cleaning of a hull will normally take around 2 to 8 hours depending on size and condition.

Surface Prep
Spiderjet M Edge

The Spiderjet M Edge is the newest addition to Hammelmann's family for semi-automatic surface preparation and paint removal. The unit is attached to the work surface with permanent magnets and is supported by the high-power vacuum system which immediately retrieves all waste water and removed solids and allows for further processing. The drive wheels are placed directly behind the Aquablast surface cleaner enabling a particularly narrow construction while using the full working width of 15 in. As a result, it is great for removing paint from intermediate surfaces or working around narrow contours and on edges. With an operating pressure of up to 43,500 psi and a flow rate of 13 gpm the Spiderjet M Edge delivers the required power for reliable and thorough paint removal with results that meet or supersede the quality requirements set by international paint manufacturers and standards authorities for the application of new coatings.



Hammelmann

Heavy Lifters

Deck Machinery, Winches & Cranes

Appleton FPSO Cranes
Appleton Marine recently shipped a large offshore knuckle and fixed boom crane to Singapore for installation on an FPSO headed for offshore Guyana, the second in the courtry utilizing Appleton Marine cranes.

JonRie InterTech
JonRie InterTech debuted its new "240" Escort Winch for 5,000-6,000 HP tugs last year. Currently under construction for McAllister Towing and Seabulk Towing. Line pulls from 50,000 lbs. to 100,000 lbs.; line speeds to 150 fpm.

Standard Duty Lifting Beam
Harrington Hoists introduced its HSDLB Standard Duty Lifting Beam which is designed for low headroom applications. Model HSDLB is available from ½ thru 40 Ton capacities with outside spreads from 3 to 30 feet.

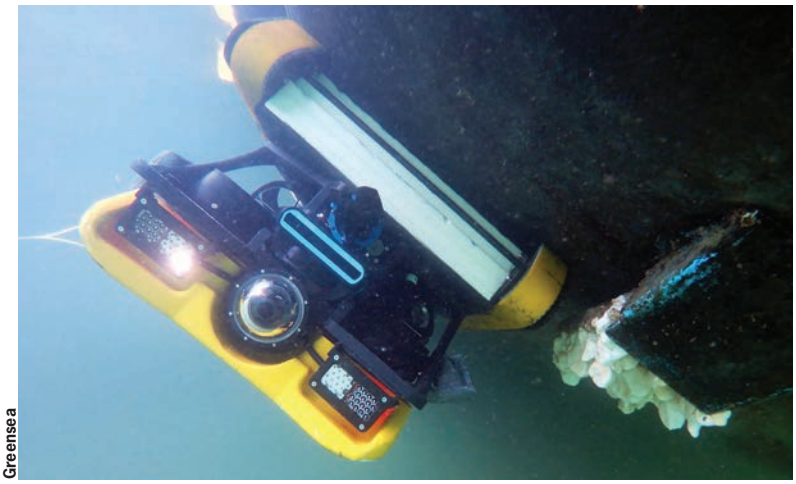
Rustibus

Rustibus Scalers

For more than 40 years Rustibus has been supplying deck scalers to the marine community. But the focus has broadened, as it added safety and the enivonmental aspects to the use of its rust removal produts, recently launching Safe Edge. This is a product that can be placed on an open manhole on a ship to secure the access point from falling and also be able to do maintenance and venting of the tank while in use. This allows the end user to better apply safety protocols when conducting tank inspections or maintenance. The Safe Edge protection device comes in several sizes and shapes, allowing for cables, air hoses or large ducts to be channeled while still securing fall prevention on deck. All Rustibus machines are recommended to be fitted with a vacuum system and there is also room for this hose to be channeled trough the Safe Edge if working in a confined space. Noise reduction, vibration, and dust-in-air are areas of continuous improvement on the Rustibus machines.

Greensea's New Ship Hull Crawler

Greensea introduces a new hull crawler that attaches a ROV to a ship hull without magnetics, allowing the operator to "drive" the ROV and payloads over the hull. Initial hull crawlers are designed to work exclusively with the VideoRay Mission Specialist Defender ROV. The hull crawler represents a milestone in Greensea's hull robotics program, which is advancing navigation and localization capabilities for a fully autonomous robotic hull inspection and proactive in-water cleaning solution. VideoRay and Greensea expect early adopters of the technology will use the Defender with the Greensea hull crawling attachment for hull inspection, surveying, non-destructive testing, and explosive ordnance disposal purposes. In 2019, Greensea was awarded a Phase 2 R&D program through the U.S. Navy to develop a highly accurate navigation and autonomy solution for ship hull robots for the purposes of supporting autonomous proactive in-water cleaning. This program will utilize several of Greensea's core navigation and autonomy technologies including their work with inertial navigation systems in ferrous environments and feature-based localization. The hull crawler technology will provide the delivery mechanism for the advanced software being developed in the Phase II program.



Greensea

SP Bluetooth Load Shackle
RSB Rigging Solutions (RSB) offers a Bluetooth-enabled wireless load shackle: a long range, 2.4Ghz version with a wireless range of 1,000m; and, a Bluetooth, smart phone product with ranges up to 100m.

DP World Orders 8 Cranes
Liebherr Container Cranes and DP World Berbera have signed a contract for the supply of eight RTGs for DP World's terminal in Berbera, Somaliland. The cranes are due to be ready for operation before the end of 2020.

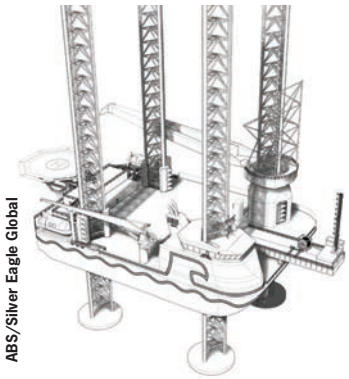
New Davit Cranes
Patterson Manufacturing is a supplier of winches, rigging, and fittings, inventing the first river ratchet in 1871, to patenting the YoYo winch in 2009. The Patterson Davit Cranes exhibit the company's hallmark safety, simplicity, and durability with:

- Low Maintenance
- Hot-Dipped Galvanized/Saltwater Ready
- No Plastic Sheaves or Pulleys

The cranes are available in 1/2-ton and 1-ton capacities.

In the Yard

New Ship & Boat designs, contracts & deliveries



ABS/Silver Eagle Global

Silver Eagle Orders SEDUs

The American Bureau of Shipping (ABS) will class a series of Self-Elevating Drilling Units (SEDU) for Silver Eagle Global of Manama, Bahrain. Construction will be based on the Levingston/ MiNO Enhanced 430WC-4 design, and the initial contract calls for two vessels with an option for an additional two vessels, with PetroVietnam Marine Shipyard (PVMS) winning the bid to build the vessels. PVMS will build the vessels in its Vung Tau, Vietnam shipyard, which is located about 100 km from Hoe Chi Minh City. The 400,000 sq. m. yard offers structural, piping mechanical, blasting/painting workshops along with a large open fabrication and assembly area. Silver Eagle Global is associated with Rawabi Holding of Saudi Arabia.

Swire Adds Newbuild MV Changsa

Swire

As COVID-19 coverage dominates the world's news cycle, it's a pleasure to report on a new ship delivery, Swire Shipping's first 2400TEU newbuild vessel, MV Changsha. The vessel was built at CSSC Huangpu Wenchong Shipbuilding Co. Ltd., and will be deployed on Swire Shipping's South East Asia to Papua New Guinea and Solomon Islands service. MV Changsha is part of a wider order book of eight feeder container vessels (four 2,400 TEU vessels and four 2,750 TEU vessels) scheduled for delivery in 2020, purpose designed to accommodate the needs of the region's customers. To that end, the modern-eco, 30,400DWT/ 2400TEU ships were designed and built with key features and benefits including:

- High capacity (1,860TEU @ 14t) on a ship measuring 186 x 32.2 m.
- 3 x 45 mt uprated cranes with the ability to complete 90t tandem lifts.
- Non-containerized cargo capability.
- Pontoon, weather tight hatch covers reinforced to uniform load of 5t/m2 to enable heavy loads on deck.

RoPax Ferry for Bruny Island

The double-ended Ro-Pax ferry Nairana has been launched for service to Bruny Island in Tasmania. Built to a Incat Crowther 44 design, the ferry was commissioned by Sealink Travel Group and built by Richardson Devine Marine in Hobart. The ferry is configured to carry 36 cars and 192 passengers. Three of the vehicle lanes are unrestricted in height, with the central two lanes carrying a total 90 lane meters of trucks. It is also certified to carry dangerous goods.

Incat Crowther said it worked with Sealink to customize the vessel to the operator's docks, as part of a wholistic approach to the operation, including design and on-site fitment. Nairana is powered by four Scania DI13 070M main engines, each producing 200 kW. Positioned in each of the four corners of the vessel, these engines are directly coupled to Schottel SRP 100 azimuthing drives.

As well as offering maneuverability, the azimuthing drives provide propulsion efficiency with all four delivering thrust in the direction of vessel travel. If required, the vessel can operate on two pods during off peak periods. A second sister-vessel is under construction at Richardson Devine Marine.

RoPax Ferry Main Particulars

Length, o.a.	147.7 ft.
Beam Overall	44 ft.
Draft (hull)	5.2 ft.
Depth	11.5 ft.
Fuel Oil	2,642 gal.
Fresh Water	1,321 gal.
Sullage	
1,321 gal.	
Passengers	192
Cars	36
Main Engines	4 x Scania
Power	4 x 200kW @ 1800rpm
Propulsion	4 x Schottel SRP100 FP
Generators	2 x Izuzu 40 ekW
Flag	Australia

Allseas Ship for Deep-sea Polymetallic Nodule Collection

Allseas acquired the former ultra-deepwater drillship Vitoria 10000 for conversion to a polymetallic nodule collection vessel. She is 228m x 42m wide and can accommodate 200 people. In partnership with DeepGreen Metals Inc., Allseas is developing a deep-sea mineral collection system to recover polymetallic nodules from the ocean floor. The ship will be converted to accommodate the pilot nodule collection system currently being engineered by Allseas. Modifications will enable the deployment at sea of a 4.5-km-long riser currently being developed by Allseas. Allseas expects the vessel to be operational for pilot nodule collection tests by mid-2021.

Allseas

Incat Crowther

Sakashita takes the helm at ClassNK

ClassNK

Damen

Damen Names Van Heyningen COO

Hempel

Group VP Changes in Hempel

Sakashita takes the helm at ClassNK

Hiroaki Sakashita was appointed President & CEO as well as a Representative Director of ClassNK. Current Senior Executive Vice Presidents Tetsuya Kinoshita, Junichiro Iida, and Dr. Toshiyuki Shigemi will continue in their present roles on the team, joined by Hirofumi Takano and Taira Narisawa as Executive Vice President. Koichi Fujiwara has been appointed as Chairman of the Board of Directors, leaving the post of Representative Director, President & CEO. Michio Takagi will remain as Executive Auditor. Sakashita holds a bachelor's degree in Naval Architecture and Ocean Engineering, from Yokohama National University and started his career at Japan's Ministry of Transport (now Ministry of Land, Infrastructure, Transport and Tourism) in 1980. During his career with the government, he played vital roles in maritime administration including regulatory oversight and industry development.

Damen Names Van Heyningen COO

Marc van Heyningen will become the new Chief Operations Officer (COO) of Damen Shipyards Group effective April 1, 2020. He holds a MSc in Civil Structural Engineering at Delft University and has spent the majority of his career working for Fluor Corporation in various general and operations management positions. He succeeds Jan-Wim Dekker, who started as Chief Commercial Officer on January 1, 2020.

Group VP Changes in Hempel

Current Group Vice President for Hempel South & East Asia, Pernille Lind Olsen, becomes new Group Vice President for Hempel Europe & Africa starting on 1 July 2020. At the same time, current Finance Director for Hempel Middle East Jonathan Mercer will take over Pernille Lind Olsen's position as Group Vice President for Hempel South & East Asia.

HII Promotes Jones, Fuller

Huntington Ingalls Industries announced two executive changes. Julia Jones was promoted to vice president of manufac-

HII

HII Promotes Jones

HII

HII Promotes Fuller

turing and facilities, responsible for all manufacturing and facilities operations. She has more than 22 years of shipbuilding experience. Gary Fuller was promoted to vice president of fleet support programs. He brings 38 years of in-depth experience.

FSL Trust Appoints Wenker

FSL Trust Management appointed Markus Wenker as Chief Financial Officer Designate of FSLTM. Wenker will take over the role and responsibilities as Chief Financial Officer on May 4, 2020, following a thorough handover process with the current Chief Financial Officer, Mr Alan Mitchell, who is retiring.

Kuosa Named CEO of NAPA

NAPA appointed Mikko Kuosa as Chief Executive Officer. Kuosa assumes the position from Ilmo Kuutti, who served as CEO of NAPA Group for three years. Kuosa holds a master's degree in Naval Architecture from Helsinki University of Technology, Finland.

Yara Appoints Askeland as New CSO

Yara Marine Technologies has appointed Aleksander Askeland as Chief Sales Officer, effective March 1, 2020. Askeland has worked for the broader Yara group since 2016, starting in the Industrial segment for the Environmental Solutions business unit, then managing the Animal Nutrition Business unit.

Kitamura to Lead Yanmar Marine

Yanmar announced that Taro Kitamura has been appointed as the new President of Yanmar Marine International and head of YANMAR's Recreational Marine Business Unit, effective April 1, 2020. Marcel Borsboom has been named General Onboard System Business Director of YMI. As the Managing Director of VETUS since 2009, he will retain this position and will also oversee management of additional YANMAR companies Flexofold and Smartgyro.

C-Job Opens Athens Office

C-Job Naval Architects is set to open an office this spring in Athens, Greece, with C-Job veteran Nikos Papapanagiotou taking on the role of General Manager and will lead the new office in Athens.

Motor-Services Hugo Stamp Acquires TurboUSA, Inc.

Motor-Services Hugo Stamp, Inc. (MSHS) a premier provider of diesel engine products and services, entered into a definitive acquisition agreement with TurboUSA, Inc., a provider of maintenance and repair services for turbochargers. The acquisition became effective on February 20, 2020. Under the acquisition, leadership and staff of TurboUSA, Inc. will join the MSHS team and the TurboUSA brand will be retired.

FSL Trust

FSL Trust Appoints Wenker

NAPA

Kuosa Named CEO of NAPA

Yara

Yara Appoints Askeland as New CSO

Yanmar

Kitamura to Lead Yanmar Marine

C-Job

Nikos Papapanagiotou, C-Job

COVID-19, Climate Change & Changing the World, Together

Our planet is facing its greatest challenge, and it's not coronavirus. Asbjørn Halsebakke ponders how greater political action could help the maritime industry meet its most ambitious environmental goals.

Why hasn't the climate crisis elicited the same urgent response from global governments as the corona pandemic? When confronted with the terrible threat of viral spread, national leaders from Boris Johnson to Narendra Modi, and from Donald Trump to Xi Jingping, have rapidly introduced emergency measures, the like of which we've never before imagined, let alone experienced. Huge swathes of the economy have been shut down, public behavior and interaction have been transformed, literally overnight.

The world today is unrecognizable from just a few short weeks ago. There is much to lament about those changes, but also something to applaud in the speed and impact of international response. National leaders, politicians, businesses and consumers have listened to experts, understood the threat and moved to mitigate it in every way possible. Unthinkable policies have been passed without question, with enormous aid packages agreed on, while financial and trade concerns are simply sidelined as we collectively embrace survival mode.

It is, from a detached viewpoint, extraordinarily impressive.

An Existential Crisis

Let me stress now – I am not downplaying the danger of Covid-19 and have huge sympathy for everyone impacted, in any way, by this crisis.

But it does beg the question, why can't governments and the international community respond to the issue of climate change with a similar level of commitment? This is the world's number one emergency – an existential crisis for humanity, threatening our very survival. And it's not just about the long-term sustainability of society … the impacts now, today, are there for all to see.

For example, The World Health Organization estimates that seven million people die every year due to air pollution. Seven million. The same body reports that between 2030 and 2050 an additional 250,000 deaths will occur each year as a direct result of further global warming, relating to factors such as heat stress and malnutrition. And that's before we get on to rising sea levels, wildfires, extreme weather and, well, the list goes on.

Our world is dying. And we're the ones killing it. And what is the response from those in power?

Compare it, if you can even visualize it, in relation to the current health crisis.

It's clear, surely, that something needs to be done.

Supporting Our Industry

As the chief engine for global trade and the enabler that allows us to access the resources and wealth of our ocean space, shipping has a key role to play. We need to change our industry if we are to help change the world.

Work is underway. The IMO has set the ambitious, yet crucial, target of reducing GHG emissions by 50% (compared to 2008 levels) by 2050, with the overall aim of eliminating them entirely. This is to be applauded, but it also needs to be supported.

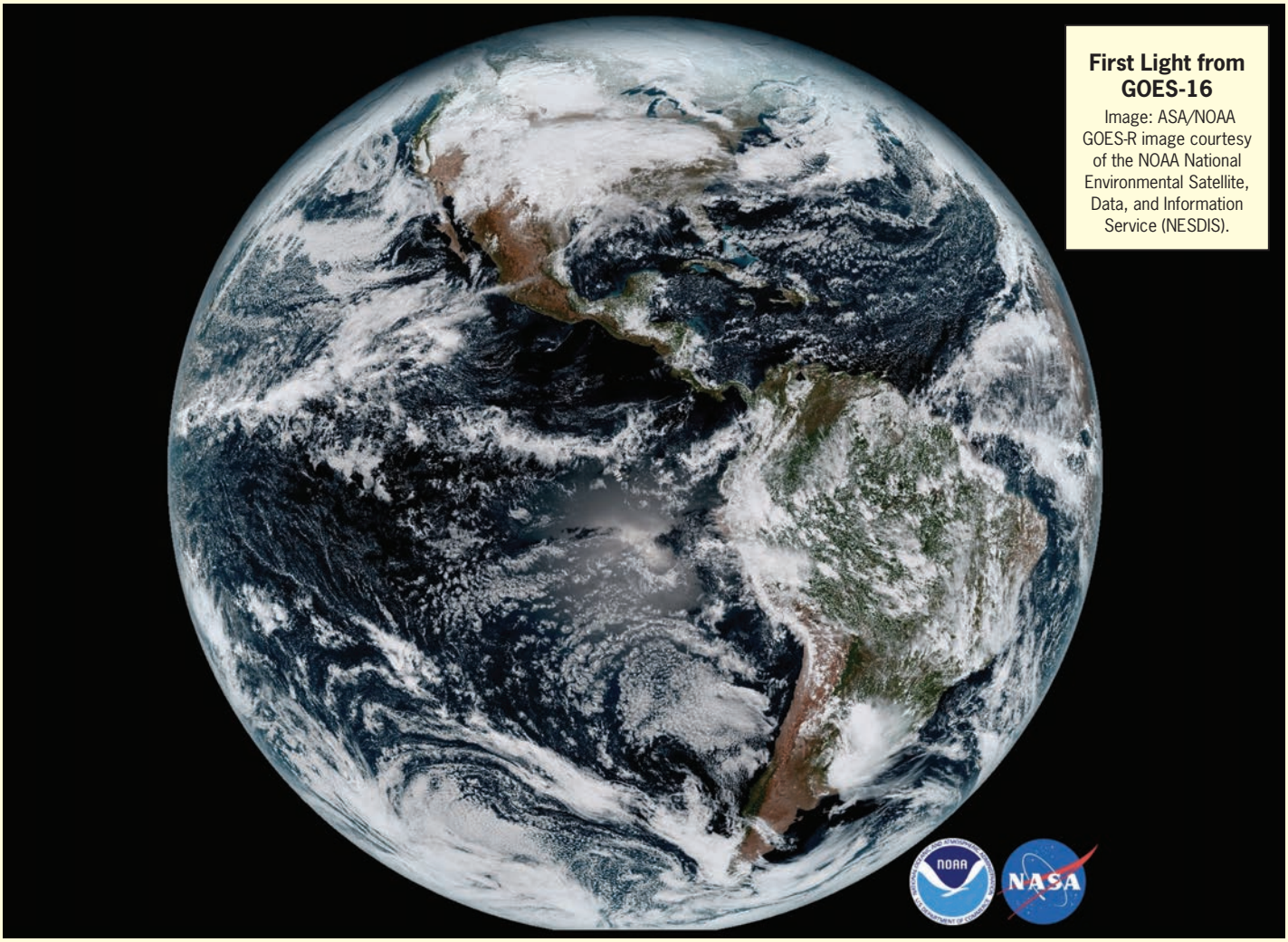
When I speak to shipowners, I usually find them eager to introduce green technology, help reduce emissions and work towards a more sustainable industry. But, quite frankly, they cannot make this transition alone. They need help.

Shipping is a tough and notoriously capital-intensive market. Retrofitting environmentally friendly solutions may not be the first priority when you're either struggling to stay afloat or edge ahead of the competition in a cut-throat market. At the same time, newbuilding yards generally won't fit the best environmental solution for a vessel unless the customer presses them – they'll fit the one that delivers the greatest margin. And who can blame them?

So, the industry requires clear, strategic and impactful assistance to meet its lofty goals. It needs governments and regulators to step in and deliver the policy and instruments that will facilitate the green shift now…because this is a matter that will not wait.

Enabling Change

What those measures should be are open to debate. Taxes on vessels with poor environmental performance would encour-



First Light from GOES-16

Image: ASA/NOAA GOES-R image courtesy of the NOAA National Environmental Satellite, Data, and Information Service (NESDIS).

age the uptake of better solutions, while the income from those taxes could be used to support the development and installation of new technology. Stricter regulations would require compliance, but perhaps the financial burden could be shifted to government – in the same way as they are providing aid right now – with green grants, or access to funding that is reliant on meeting stringent environmental criteria.

Research into green synthetic fuels – a vaccine against pollution – could be fast-tracked and centrally supported, while technology that is already available and proven today, such as batteries and hybrid systems, could be encouraged for immediate efficiency and emissions gains on today's world fleet.

Newbuilds with future-proof technology, capable of utilizing any fuel source, such as The Switch DC-Hub, could be incentivized for owners, ensuring that they have the capability to meet all future regulations and fuel mixes, for long-term compliance and efficient sailing.

These are relatively modest measures that could translate into huge environmental benefits – for our industry, society and the planet. We just need to get started.

Call to action

The environmental crisis is more abstract than its corona sibling, so it's harder to imagine the direct individual consequences for each and every one of us. Unfortunately, we may not be able to do that until it's too late – until we've passed the point where our actions can achieve meaningful change.

Despite this short-term crisis, we have to try to not lose sight of our long-term future. And to even have one, we need action from our industry, with the strong support of governments and regulators across the world. That will be the deal breaker.

We can do this if we work together. And, if the corona pandemic has proven anything, it's shown we are certainly capable of doing that, achieving extraordinary things in remarkably tight timescales.

The biggest challenges require the greatest responses, and there is no bigger threat than climate change. It's time for those in power to respond. The world demands it.

The Author

Halsebakke

Asbjørn Halsebakke is Product Manager, Yaskawa Environmental Energy/The Switch.

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David Clark Company (Wireless Headset Communication Systems), 360 Franklin Street, Worcester, MA 77060, USA , tel:(800) 298-6235 , www.davidclarkcompany.com/marine

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