

Sustainable Shipping award winners celebrated

With increasing focus being placed on shipping's impact on the environment, the Sustainable Shipping awards highlighted the efforts of those who are helping to make shipping greener.

As industry and public awareness over the environmental impact of shipping grows, Sustainable Shipping wanted to commend those whose continuing efforts were making a significant difference in helping to reduce the carbon footprint of shipping.

Response to the awards was tremendous with a very high calibre of nominations. After much deliberation by the judges, a shortlist for the six award categories was finally decided upon.

The Sustainable Shipping's inaugural environmental awards were held at the Tower Hotel in London in July and attracted over 150 industry experts from across the globe. The event, opened by MP Paul Clark, Parliament Under Secretary of State for Transport and compered by BBC environmental analyst Roger Harrabin, also attracted mass media coverage.

"Since 1990 global shipping emissions have risen by 85 percent and international shipping now emits 870 million tonnes of CO₂ each year - more than the UK's entire economy," Harrabin said in his opening speech. He added that the Sustainable Shipping awards, however, highlighted the efforts of those who were helping make a difference.

The awards were divided into six categories: Ocean Environmental Protection, Clean Air, Environmental Awareness in Shipping, Environmental Technology of the Year, Sustainable Shipping Operator

of the Year, and Green Shipping Initiative of the Year.

"The global shipping community has reached a tipping point and the commitment to change is beginning to gather pace," said Matthew Cape, CEO of Petromedia Group. "Green initiatives provide a wealth of opportunity for the maritime industry and have the potential to make shipping operations leaner, more efficient and more robust. I hope that these awards offer compelling recognition of the outstanding progress already being made, while serving as a reminder of the hard work that still has to be done."

The winners were decided by a group of internationally respected industry figures including Niels Bjørn Mortensen, Head of Marine Department, BIMCO, John Vidal, Environmental Editor, Guardian Newspaper, Jean Otto de Kat, Head of Innovation, A.P. Moller-Maersk (did not judge the categories in which AP Moller-Maersk was shortlisted), Vaughan Pomeroy, Technical Director, Lloyds Register, Dr Simon Walmsley, Head of Marine, WWF UK, and Natalie Bruckner-Menchelli, Senior Editor, Sustainable Shipping.

Winner profiles

Winner of Ocean Environmental Protection Award sponsored by Searights: Alfa Laval and Wallenius Water (Pureballast). Wallenius Water was

founded in 1996. It is a Swedish environmental technology company that has developed the chemical-free method of purifying water known as AOT (Advanced Oxidation Technology). Alfa Laval provides specialised products and engineered solutions that help companies in a large number of industries become more competitive.

Pureballast was jointly developed by Wallenius Water and Alfa Laval. It is a chemical free technology that can save whole eco-systems and local industries as well as prevent ocean-spread diseases in a sustainable way.

Up to five billion tonnes of ballast water is discharged by ships every year. This water contains microscopic organisms and planktonic larvae of larger organisms small enough to pass through the ballast water intakes and pumps. In a new environment with no natural enemies, some of these species can become invasive. IMO classifies this as one of the largest environmental threats to our oceans. Invasive species can alter the entire local ecology, leading to a collapse of fisheries and threatening endangered species.

Pureballast offers 100 percent chemical free ballast water treatment and is the first chemical free ballast water treatment system approved by the IMO. Pureballast is based on the AOT water purification technology that copies nature. The patented technology works like a natural microbio-

logical barrier. Pureballast features a 50-micron filter that prevents the intake of larger organisms and reduces the build-up of sediment in the ballast water tanks.

To date about 60 systems have been sold to shipowners and shipyards across the globe. More than 25 systems have been delivered and a number of these are already in operation.

Winner of Clean Air Award sponsored by Petromedia: Ports of Long Beach and Los Angeles

The Port of Long Beach and the Port of Los Angeles have a history of environmental stewardship spanning over 20 years and are committed to improving the environment in a sustainable manner. This commitment is demonstrated by the Port of Long Beach's guiding Green Port Policy and environmental programs, Port of Los Angeles' environmental programs and the two ports joint San Pedro Bay Ports Clean Air Action Plan (CAAP).

The CAAP was developed in co-operation with the Federal, State and local air regulatory agencies in 2006 to reduce air emissions from port related mobile sources, including ocean-going vessels, by at least 50 percent in five years.

Through their environmental programs the Ports have applied creative approaches to reduce the air quality impacts from ocean-going vessels. The voluntary Vessel Speed Reduction (VSR) program was established in 2001 by the two ports and now requests vessel operators to voluntarily reduce their speed to 12 knots within 40 nautical miles of Point Fermin in the Los Angeles Harbor.

In January 2006, the Port of Long Beach implemented the Green Flag Program which applied a creative approach to reducing air emissions from ocean-going vessels serving the port by providing incentives. The approximately \$3 million a year programs offer reduced dockage rates and environmental awards for vessels that help to improve air quality by voluntarily reducing their speeds when approaching or departing the ports. Carriers that achieve a 90 percent compliance rate to 20nm receive a 15 percent discount on dockage rates at the port.

In 2008, 91 percent of vessels calling at POLB and 89 percent of vessels calling at POLA reduced their speed within 20nm of Point Fermin. From January to March 2009, 71 percent of vessels calling at POLB were compliant with the reduced speed to 40nm of Point Fermin. Due to these efforts in 2008 particulate matter (PM) was reduced by over 120 tonnes, nitrogen oxides (NO_x) by over 1,500 tonnes and sulphur oxides (SO_x) by over 1,000 tonnes.



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In March 2008, the ports' Boards of Harbor Commissioners also approved the Low Sulfur Fuel Incentive Program - a one-year voluntary program to encourage vessel operators to switch from bunker fuel to <0.2 percent sulphur distillate fuel in main engines within 20 or 40 nm of Point Fermin.

As of January 2009, program has resulted in the reduction of 566 tonnes of SOx, 459 tonnes of NOx and 80 tonnes of PM from vessels serving the ports.

The ports are currently undergoing electrical infrastructure improvement programs to supply shorepower infrastructure to cargo and cruise terminals.

Winner of Environmental Awareness in Shipping sponsored by Wartsila: Dr Andre Stochniol

In 2006 Dr Andre Stochniol dedicated his 28 years of business and academic expertise to tackling climate change.

During 2007 and 2008 he designed and secured significant multi-lateral support for an innovative International Maritime Emission Reduction Scheme (IMERS). The self-funded non-profit initiative aims to obtain agreement for a technically sound and politically acceptable scheme to reduce emissions from international maritime transport and to raise additional financing for climate change action, aimed at helping the world's poor deal with the consequences of global warming.

Stochniol has worked with 30 national delegations on shaping the IMERS proposals. He has also initiated informal discussions with stakeholders from major developing countries to identify a market-based scheme that is acceptable to them. The scheme is based on a market-driven levy on emissions from international maritime transport. It will apply initially to ships carrying goods to developed countries. IMERS has been recommended in a number of reports including the Global Leadership for Climate Action.

Stochniol's activities galvanised discus-

sions on market-based schemes and significantly increased awareness that emissions reductions in shipping are not only achievable but affordable, and good for the environment and for business. IMERS also increases awareness about the importance of directing funds from a shipping emission scheme to climate change adaptation - not only mitigation. Stochniol's calculations have demonstrated that the impact on end customers from IMERS would be as little as 0.1 percent increase in import prices.

The objective and ultimate goal of IMERS is to become fully operation in 2013, which would secure significant additional funding for climate change mitigation and adaptation in a few years. This would therefore deliver substantial benefits to the climate and to developing countries.

Winner of Environmental Technology of the Year sponsored by EGCSA: Skysails

Skysails offers a wind propulsion system that meets the requirements of today's maritime shipping industry for high performance, short amortisation period and high practicability.

In 2008, Skysails took the last major step in developing the technology into a production-ready product with the first-time use of the system aboard the cargo ships Beluga Skysails and Michael A, followed by a long-term pilot testing phase during regular shipping operations.

The Skysails system consists of a towing kite with rope, a launch and recovery system and a control system for automatic operations. Skysails uses a large towing kite for the propulsion of the ship that is made of high-strength and weatherproof textiles and their shape is comparable to that of a paraglider.

Skysails can operate at altitudes between 100 and 300 m where stronger and more stable winds prevail. By means of a dynamic flight manoeuvres, e.g. the figure of 8, Skysails generates five times more power per square meter sail area than conventional sails. It is therefore pos-

sible to gain significant savings by using comparatively small sail areas.

Depending on the prevailing wind conditions, a ship's average annual fuel costs and emissions can be reduced by 10 to 35 percent by using the system. Under optimal wind conditions, fuel consumption can temporarily be cut by up to 50 percent. This allows considerable amounts of expensive oil to be saved, conserves petroleum resources as they become scarcer and reduce climate damaging emissions.

Skysails has ambitious production goals over the next few years, planning to equip 1,500 ships by the year 2015. The worldwide use of Skysails would make it possible to save over 150 million tonnes of CO2 a year, the equivalent to about 15 percent of Germany's CO2 emissions.

Skysails says their objective is to show how working with nature, not against it, which makes business success possible.

Winner of Sustainable Shipping Operator of the Year sponsored by Lloyds Register: A.P. Moller-Maersk

Maersk Line has a fleet of more than 500 vessels and 1,900,000 containers. The company is represented in more than 125 countries, enabling a close local connection to the high-quality worldwide service.

The values of Maersk Line are reflected in what they describe as "constant care" through which respect for the environment is a natural and integral part of its business model, Maersk says. Constant care is applied in the way he company uses resources and in how it optimises operations.

"For us this entails a commitment to promote environmental protection standards amongst our employees, in the industry and world in general and innovating to developing environmentally friendly solution," it added.

Maersk Line is known for challenging industry standards to obtain fuel and emission savings. The company has shown a commitment to slow steaming within its fleet to reduce fuel consumption and

harmful air emissions, and plans to continue once the global economy recovers. By challenging the myth that vessel engines cannot operate safely on very low loads, A.P. Moller-Maersk proved that it is possible to efficiently run engines on loads down by 10 percent without compromising possibilities of going full speed.

This initiative ensures more flexibility in service speed and increases energy efficiency on vessels, reducing CO2 emissions by up to 20 percent. To prove the magnitude of the resulting savings, A.P. Moller-Maersk considered a medium range 6,200 TEU containership and analysed its operation profile with the average speed dropping from 22 knots to 20 knots and the fuel oil consumption dropping by 20 percent, if there were no lower limits on engine loads.

When the engine was operating at a minimum load limit of 60 percent, fuel consumption dropped by only 7 percent, and at a 40 percent limit load by 15 percent. Being able to operate the vessel at loads down to 10 percent brought fuel savings of nearly 20 percent. Going down to 10 percent minimum load results in a saving of 3,500 tonnes of fuel per vessel per year, in turn reducing the vessel's CO2 missions by 10,000 tonnes per year. The results were shared with engine manufacturers MAN Diesel and Wartsila. Maersk Line has implemented the solution across its entire fleet.

Winner of Green Shipping Initiative of the Year sponsored by ABS: Green Ship of the Future

Green Ship of the Future is a unique Danish Joint Industry project aimed at developing and demonstrating technologies and methods for reduction of air emissions from ships.

The project offers a framework for companies within which to cultivate and demonstrate technologies and operational means capable of obtaining 30 percent reduction in CO2 emissions and 90 percent reduction in SOx and NOx emissions for ships in the future. The areas of focus are machinery, propulsion, operation and logistics.

The project was initiated in 2008 and now has 15 partners working on 13 different projects, with the number of partners and projects still growing. The project is coordinated by Danish Centre for Maritime Technology, which is a joint R&D centre between FORCE Technology and DTU Mechanical Engineering.

Current projects include approaches using both existing and available technologies and entirely new and innovative developments. For each project the goal is to be able to present a demonstration model for the Climate Conference in Copenhagen in December 2009. Projects currently being worked on include waste heat recovery systems with the potential to reduce CO2 by 20 percent and a Exhaust Gas Recirculation (EGR) system that has the potential to reduce NOx by 50 percent. Other initiatives include a pump and cooling water system, automated engine monitoring and scrubber systems.

Results from the Green Ship of the Future will be presented at the Bright Green exhibition on December 12-13, 2009. ■

Natalie Bruckner-Menchelli