GREEN SHIPPING

TO THE FORE

Nazery Khalid, Honorary Secretary of the Association of Marine Industries of Malaysia (AMIM), Kuala Lumpur, Malaysia

Shipping is the unsung hero and loyal servant of world trade and plays a pivotal role in facilitating many economic activities. Few industries, businesses and consumers are not touched, influenced or affected by shipping, by virtue of the fact that 95% of global trade is carried through seaborne means. Ships of all types and sizes carry a stunning range of cargoes across great distances, and facilitate a slew of economic activities, such as offshore energy exploration and production, marine tourism, and fisheries and port operations, to name but a few.

The shipping industry is undergoing turbulence arising from low demand for new vessels, overcapacity of new ships, low freight rates and tight financing. This situation – which has characterized the industry for almost a decade since the global financial crisis began – is against the backdrop of slow growth in world trade and a sharp cutback of activities by offshore oil and gas companies amid low oil prices. Ship owners, shipyards and a host of support service providers are facing a torrid time from low demand for shipping services and thin orders for new ships.

REDUCING SHIPPING'S CARBON FOOTPRINT

This however has not stopped the momentum of the shipping industry in its effort to reduce emissions and carbon footprint. Although shipping is the lowest contributor of emissions compared to the other modes of transport – namely road, air and rail – it has not been complacent with its emissions level. Over the years, stakeholders in shipping – including ship owners, shipbuilders, cargo owners, port operators, governments, classification societies, marine equipment manufacturers and logistics service providers – have put in a lot effort to curb emissions of greenhouse gasses (GHG) and wastes from ships, and to ensure shipping activities do minimal damage to the marine environment.

These 'green shipping' efforts are led by the International Maritime Organization (IMO), the specialized United Nations agency responsible for clean, safe and secure shipping. The IMO formulates international conventions, protocols and optimal management practices related to how ships are built, operated and even decommissioned to ensure they don't cause harm to the environment.

These conventions and regulations cover areas such as ballast water management, marine pollution, as well as the use of anti-fouling paint on ships, GHG and noise emissions, green ship recycling and environmentally safe operations of vessels. These are formulated and enforced to reduce the risk to the environment throughout the life of ships, from their design and construction to its operation and eventual decommissioning.

As the offshore energy industry and port operations continue to rely on shipping, pressure is growing on shipping to further clean up its act and reduce its carbon footprint. Although shipping's share of emissions from transport activities is low, a mere 2.2% of total global emissions, efforts are required to ensure its carbon footprint does not increase manifold in the years ahead.

To this end, it is encouraging to see serious attention being given to enhancing maritime environmental and energy efficiency features of ships. The

IMO, through its Marine Environmental Protection Committee (MEPC), has stepped up its efforts to introduce new and tighter regulations to lessen and minimize the harmful effects of ships to the environment over recent years. These are not only in line with the concepts of sustainability and good custodianship of the environment but also help ship owners reduce costs by adhering to environmental rules and regulations, and operating new environmentally friendly and energy efficient ships.

Despite the fact that the shipping industry has made significant progress in these areas, there is always more to be done in many areas to clean up shipping's act from an environmental perspective. The pace of technological advancement, innovation and the introduction of new elements such as big data analytics and the Internet of Things to shipping will continue to reshape, influence and make its mark on the industry. Existing and upcoming regulations introduced by the IMO and regional governments, as well as standards recommended by industry players and NGOs, will steer shipping's development in the years ahead.

FORTHCOMING GREEN SHIPPING INITIATIVES

In addition to areas such as ballast water management, anti-fouling and marine pollution which are already governed by well-established conventions, rules and protocols, there are several areas that can help reduce shipping's carbon footprint that can be further developed.

Impressive innovation and advancements can already be seen in the industry such as in the use of alternative fuels like LNG, biofuel and fuel cells aboard ships. With pressure mounting on transport providers to reduce emissions, one can expect further developments in this area in the coming years. In this regard, it is encouraging to see that the IMO has developed a mandatory code known as the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code) which entered into force on January 1, 2017. The IGF Code – which stands testimony to IMO's intent to reduce shipping's carbon footprint – aims to minimize the risk to ships, their crews and the environment from the use of cleaner fuels than bunker fuel.

The spotlight will also be on the control of particulate matter (PM) as it includes small particles and liquid droplets as one of the by-products of shipping operations. Newer information will be generated on the risks posed by PM used by the shipping industry. These include areas such as the impact of PM on health of seafarers and on the marine environment and coastal areas.

Another area ripe for further research and development is environmental benchmarking. This field is gaining traction as ship owners become more active in monitoring environmental and fuel efficiency performance. To assess the impact of their ships on the environment and to measure their use of fuel, shippers need reliable, accurate, simple and easy-to-use data leading to reports. More research is expected to be carried out in this area to complement existing tools and systems to measure their environmental and fuel performance to support shippers in reducing emissions and optimizing operations. IT, telecommunications, data management and the Internet of Things will open up new frontiers in the development of methods in these areas to establish performance baselines for ships. Environmental and fuel benchmarking will gain traction as international pressure grows on shipping to reduce emissions of carbon dioxide (CO2), nitrogen oxide (NOx) and sulphur oxide (SOx) and as IMO and regulatory

bodies like the EU begin to introduce and enforce new and stricter emissions controls and limits.

As ship owners grapple to comply with requirements for SOx emissions, more investigation can be expected to be carried out on exhaust cleaning solutions and their pros and cons versus low sulphur fuels. Industry players, shipping and marine associations and the academic community will step up research to gauge the economic benefits of using sulphur scrubbers with regard to the unknown risks that this new technology may bring, and fine-tune a system that can work well in a multi-dimensional and multi-environmental realm.

Propulsion machinery systems are critical to the performance of ships. Well-designed systems lead to fuel savings, a reduction in risk of damage, greater efficiency and less fatigue in the performance of the propellers that move ships. As shipowners focus more on enhancing energy efficiency and reducing their fuel cost, one can foresee further research and development in this field to come up with the optimal propeller systems by enhancing the diameter and reducing blade surface of the propellers, among others.

There are other emerging areas which require deeper investigation to curb emissions from ships. These include using a DC power distribution system (as opposed to the traditional AC), improving the design of hybrid ships (for example, fuelled by LNG and electric power batteries) and the impact of shipping to sensitive marine areas such as the Arctic and waters rich in biodiversity. Research findings, collected data and innovation in these areas would go a long way towards contributing to lower emissions from ships and thereby greater protection for the marine environment.

TOWARDS CLEANER OCEANS

Despite the downturn in the shipping industry, ships will continue to be the preferred and most economical mode of transport for global trade and will continue to facilitate many offshore economic activities. As such, there will always be a requirement for ships, and shipping activities will remain firmly in the international spotlight. There will be a continued focus on the efforts, seriousness and commitment of its stakeholders to do their part to reduce the carbon footprint and to mitigate the harmful effects of shipping on the environment.

While it is encouraging to see initiatives and progress made in this area, a lot more needs to be done if the shipping industry is to ensure its emissions level does not grow too much. In this regard, it is important that regulations are put in place and strictly enforced, and investment, incentives and a supportive, facilitative environment is made available for research to be carried out in areas related to green shipping. Stakeholders in the industry must close ranks and work together to come up with viable solutions to curtail its carbon footprint for the sake of the increasingly distressed Planet Earth.

ABOUT THE AUTHOR

Nazery Khalid is the Honorary Secretary of the Association of Marine Industries of Malaysia (AMIM) and the Head of Planning & Development at Boustead Heavy Industries Corporation. He will be speaking at the Asia Pacific Maritime (APM) 2018, taking place in Singapore from 14-16 March 2018.

ABOUT THE ORGANIZATION

The AMIM association was established on March 14, 1984, and was initially known as the Association of Shipbuilders and Repairers of Malaysia (ASROM). The name was changed to the Association of Marine Industries of Malaysia (AMIM) on July 24, 1997 with a view to broaden its membership and representative spectrum to include all aspects of marine industry activities in Malaysia.

ENQUIRIES

Email: nazerykhalid@gmail.com