Sustainability in shipping

Vijay Arora, of the Indian Register of Shipping, discusses the importance of sustainability in a shipping context and says more can be done but welcomes the changes already underway

Defining sustainability is not straightforward but it is important to establish a shared understanding of what is meant by the term. In 1987 the World Commission on Environment and Development developed a definition of sustainability that was subsequently incorporated into the Brundtland report (1987) which stated that: "Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs".

Although this definition is widely accepted, the term sustainability is not limited to one concise definition.

Sustainable shipping is a holistic management concept for sustainable development, applied to the shipping sector, incorporating environmental and social responsibility. Sustainability includes three main pillars: environment; society; and economy; and the development of sustainable shipping is the result of the strengthening of these three pillars.

Different factors affect the development of sustainability in shipping, from regulatory to socio-economic issues, market-related aspects and human factors, which together contribute in different ways to the development of these three pillars. Since many different stakeholders are involved in the process, it follows that one of the critical factors in supporting sustainable shipping is understanding the concerns, needs and expectations of all stakeholders. Constructive dialogues, partnerships, synergies, joint research and development, are some the key instruments in developing sustainable shipping.

In the maritime sector sustainability acts both as a challenge and an opportunity. The IMO has proposed several ambitious targets for the shipping sector starting with the sulphur cap by 2020, the targets for improvement in ship design efficiency for various ship types by 2030 and the target for 50 per cent reduction in CO_2 emissions by 2050.

With these historic resolutions, the maritime industry is making it clear to the world that it is working towards global climate control and aiding the efforts towards mitigating the disastrous effects of climate change.

The drive for sustainability is rewriting the rules for all industries – and shipping is no exception. The longevity and profitability of the operators depends on their proactive approach to sustainability. Business as usual is not an option: there is a need to change to meet new regulations and technology.

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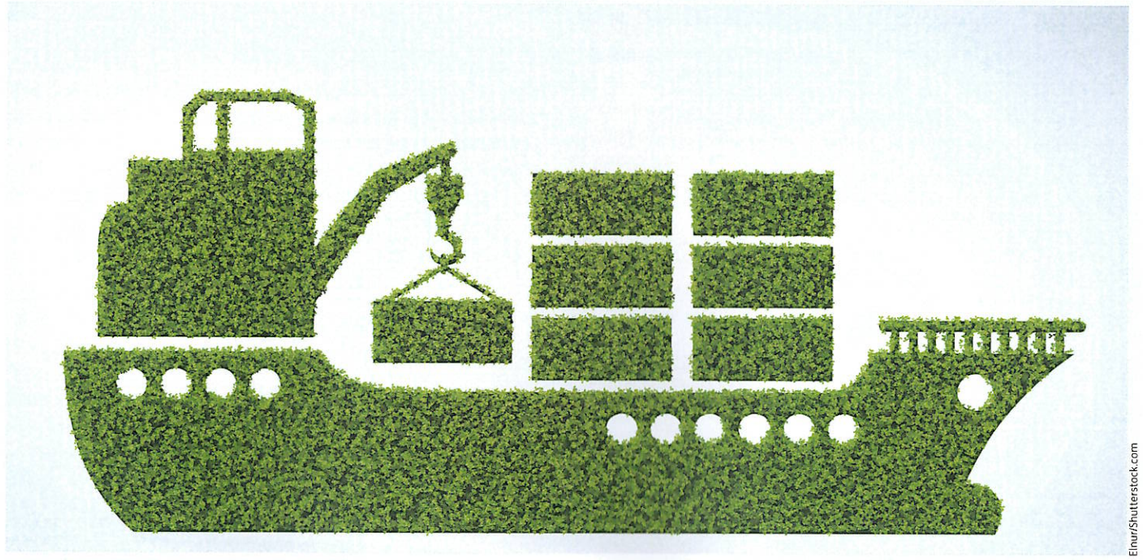
Today consumers are increasingly understanding the impact of pollution on human health and the environment and are demanding more transparency in everyday products and services. This societal trend will continue as the world population grows, communication technology develops and with it there is a need for all actors in the supply chain to meet consumer needs.



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Changing landscape

Various factors such as environmental issues and decarbonisation, combined with trends in technology, regulations and changing trading patterns will shape the maritime industry in the next decade. The anticipated, radical changes in the operating environment will create challenges and uncertainty for many operators. The industry needs to prepare itself to deal with the major issues which are likely to affect it during the next 10 years.

The scope of sustainability in an organisation is dependent on many socio-economic and market-related factors that together serve to define the sustainability goals of that particular institution. As the impact of these factors is different for every organisation, sustainability objectives differ from company to company. The nature of the industry is changing and there are many issues that could bring unwelcome disruption, but there are also opportunities for those companies that are well prepared. This makes it essential to look at the market, regulatory and technological challenges and opportunities of future scenarios to make shipping fit for the future.

The common areas of development which could be targeted towards sustainability are:

- Compliance with environmental regulations;
- Focusing on decarbonisation targets;
- Provision of education to mobilise action;
- Create innovation;
- Creating a sustainable work environment;
- Improving vessel design and increasing vessel efficiency;
- Use of sustainable alternatives by developing alternative and cost-effective fuel technologies for shipping;
- Cooperation among companies by creating partnerships;
- Public and private collaboration to provide new perspectives and shape industry's decision making; and
- Effective use of resources.

Efforts are already being made to reduce NOx (nitrogen oxide), SOx (sulphur oxide) emissions and CO_2 (carbon dioxide) emissions by compliance with MARPOL Regulations. The potential for reducing CO_2 emissions is still significant and can be done through more efficient operations and technologies such as:

- Reducing fuel consumption for existing ships and improving energy efficient of engines and hulls for new builds. These new global measures will improve the efficiency of ships, and at the same time reduce greenhouse gas emissions;
- Implementing the IMO mandatory measures for a global industry such as the Energy Efficiency Design Index for new ships by eco-efficient ship designs, better designed engines, propellers, hull forms and coatings;
- Implementing the IMO Ship Energy Efficiency Management Plan for all ships;
- Slow steaming, speed optimisation and weather routing systems;
- Developing hybrid solutions, battery systems and ship electrification;
- Change of fuel usage from heavy fuel oils to natural gas, biofuels and fuel cells;
- Improving infrastructure to enable faster turnaround times and increase port capacity;
- Maturing technologies within scrubber and exhaust gas recirculation;
- System integrations, smart maintenance, automation and remote operations;
- Use of sensors, big data, computational fluid dynamics, performance management systems; and
- Developing legislation to ensure ship-generated waste can be delivered to port waste reception facilities efficiently.

Many companies are already taking action and adopting both technological and operational measures to become more sustainable, including Nippon Yusen Kaisha (NYK), Royal Caribbean Cruises, Carnival, Maersk and Wilhelmsen to name a few. NYK is already in the process of transforming its business to meet market and societal demands and has established a strategy plan to 2022 that focuses on digitalisation and the environment, and also is aiming to go beyond compliance and work on all the UN Sustainability Development Goals.

Companies can benefit from sustainable practices, however, the full potential of sustainable business models will only be realised through a broad industry collaboration involving all stakeholders in the entire value chain. Even governments should support and take part in their efforts to unlock low-carbon growth in the maritime sector by bringing the public and private collaboration to provide new perspectives and shape the industry's decision-making to implement a new maritime strategy.

Regulations will actively drive greater sustainability. Steps have already been taken by the IMO and state actors that have introduced measures to limit and reduce emissions to air and sea. Such controls on the industry will only intensify in the coming years as public and regulatory scrutiny builds.

In addition to international regulations on emissions, it is likely that stakeholders such as bankers, charterers, insurance companies and investors will set stricter requirements for operators to improve energy efficiency and reduce greenhouse gas emissions.

While supporting international regulations to regulate pollutants, it is considered that regulators should be sensitive to the financial impact of these requirements and work with the industry to find solutions that encourage investment in sustainable practices.

More needs to be done

More needs to be done to make international shipping truly sustainable. Encouraging the industry to change has to go hand in hand with demonstrating what opportunities and solutions the changes offer and how they can help strengthen a company's position on the market and create value for society. Collectively we need to find answers to the challenges and be part of a much broader dialogue that will have to take place between operators, regulators and society at large. Together in the industry we must meet the challenges and work in a collaborative, strategic manner to deliver transformative technology and solutions that will lead to a more sustainable industry. *MRI*

Vijay Arora

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