Green development priorities in shipping

Much attention is being placed on the adoption of environmental-friendly practices to address adverse impacts from shipping activities on the marine environment. However, any discussion on green development relating to the shipping sector would not be complete without a description of developments at the Marine Environment Protection Committee (MEPC). Cheryl Rita Kaur, of the Maritime Institute of Malaysia, discusses some of the more recent developments at MEPC and priorities for 2014.

Although it is one of the most environmentally friendly transport forms, increasing emphasis is being placed on the shipping industry to continue its safe, secure, efficient and clean methods of operations. Spearheading these initiatives is the International Maritime Organisation (IMO) which provides the machinery for co-operation among governments in establishing regulations and practices on technical matters affecting shipping engaged in international trade, as well as facilitating the general adoption of the highest practicable standards in maritime safety, efficiency of navigation, and prevention and control of vessel marine pollution. For this purpose, the IMO is also empowered to deal with administrative and legal matters that have contributed to the development of comprehensive regulatory frameworks for achieving these objectives.

The Marine Environment Protection Committee (MEPC) which consists of all IMO member states, can consider any matter within the scope of the IMO concerned with prevention and control of pollution from ships. Of particular relevance is the adoption and amendment of conventions, regulations and measures to ensure their enforcement. Although focus on green development was initially towards newbuildings, its focus is now increasingly also on retrofitting on existing ships, and the MEPC contributes to the shaping of the industry besides responding to any emerging needs. On average the MEPC meets biannually. The 65th session of the MEPC (MEPC 65) was held at the IMO headquarters in London in May 2013 and its 66th session (MEPC 66) is scheduled for March 2014.

MEPC 65 addressed issues such as the adoption and implementation of ‘green’ conventions and relevant conference resolutions, amendments to related instruments, noise from commercial shipping and its adverse impacts on marine life, inadequacy of reception facilities, and forging technical co-operation activities for the protection of the marine environment. Overall discussions and major outcomes from MEPC 65 were focused on the implementation of energy-efficiency regulations, ballast water management and ship-recycling.

Notable progress was achieved in terms of developing energy-efficiency regulations, promoting technical co-operation and transfer of technology for the improvement of energy efficiency of ships, furthering work on updating estimates of greenhouse gas emissions from international shipping, approving new ballast water treatment systems, and establishing a correspondence group on ship recycling. Some of these are further discussed in the following section.
Major outcomes from MEPC 65 and plans for MEPC 66

(i) Air Pollution from Ships

A study carried out in 2009 estimated international shipping emitted 870m tonnes or about 2.7% of the global man-made emissions of carbon dioxide in 2007. Although this figure seems modest, a global approach to further improve energy efficiency and effective emission control from international shipping is needed as sea transport continues to grow apace with global trade activities. Discussions relating to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78 were thus among the main focus areas of MEPC 65.

The recent adoption of the resolution on technical co-operation for energy efficiency measures will ensure that the IMO, through various programmes, will provide technical assistance to enable co-operation for the transfer of energy efficient technologies to developing countries. MEPC 65 also recommended a phased approach to enhance energy efficiency and reduce fuel consumption by international shipping, with initial focus on data collection as a basis for future technical work. Along this line, the Committee agreed that a study should be carried out to estimate greenhouse gas emissions by international shipping by focusing on updating key figures from the previous study in 2009.

In addition, efforts are underway towards fully implementing the mandatory requirements on energy efficiency for ships as a follow up to the adoption of requirements mandating Energy Efficiency Design Index (EEDI) for new ships and the Ship Energy Efficiency Management Plan (SEEMP) for all ships by the IMO in July 2011. The EEDI aims to promote the use of more energy efficient equipments and engines through application of non-prescriptive, performance-based mechanism. The choice of technologies to use in a specific ship design is left to the industry meaning that as long as the required energy efficiency level is attained, ship designers and builders are free to use the most cost-efficient solutions for the ship to comply with the regulations. The SEEMP on the other hand, is an operational measure that establishes a mechanism to improve the energy efficiency of a ship in a cost-effective manner. It urges ship owners and operators at each stage of the plan to consider new technologies and practices when seeking to optimise the performance of a ship.

MEPC 65 also agreed to amend the date for the implementation of Tier III standards for MARPOL Annex VI regulation on Nitrogen Oxides (NOx) within emission control areas (ECAs) from the current effective date of 1 January 2016 to 1 January 2021. NOx control requirements generally apply to the installation of marine diesel engines exceeding 130 kW output in accordance to different levels (Tiers) of control and based on the ship construction date. Tier III controls apply only to specified ships while operating in ECAs designated to limit NOx emissions. Outside these areas, Tier II controls apply. In addition, the draft amendments to the NOx Technical Code 2008 concerning use of dual-fuel engines will be circulated for consideration at MEPC 66 with a view to adoption.

MEPC 65 also:

- Consented to draft amendments to MARPOL Annex VI to extend the application of EEDI to ro-ro cargo ships, LNG carriers, cruise passenger ships having non-conventional propulsion, ro-ro cargo ships and ro-ro passenger ships, but to exempt ships not propelled by mechanical means, and platforms including FPSOs and FSUs and drilling rigs; as well as cargo ships having ice-breaking capability. This however is with a view to being adopted at MEPC 66.
- Noted the finalised amendments to the 2012 Guidelines on the method of calculation of the attained EEDI for new ships with the view to adoption at MEPC 66.
- Adopted the 2013 Guidelines for calculation of reference lines for use with the EEDI for cruise passenger ships having non-conventional propulsion.
- Approved amendments to update the circular with regards to requirements for SEEMP, to exclude platforms (including FPSOs and FSUs), drilling rigs, regardless of their propulsion, and any other ship without means of propulsion.
- Endorsed a work plan to continue the work on development of the EEDI framework for ship types and sizes, and propulsion systems not covered by the current EEDI requirements and to consider guidelines on propulsion power needed to maintain the manoeuvrability of the ship under adverse conditions.
- Adopted the 2013 Interim Guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions.

“Notable progress was achieved in terms of developing energy-efficiency regulations”

(ii) Ballast water management

The IMO International Convention for the Control and Management of Ships’ Ballast Water and Sediments (BWM Convention) aims to prevent, reduce and ultimately eliminate the risks to the environment, human health, property and resources caused by the transfer of aquatic organisms and pathogens by ships. Since its adoption in 2004, the convention has come a long way with 37 contracting States representing 30.32% of the world merchant shipping tonnage (status up to July 2013). This convention will enter into force 12 months after ratification by 30 states, representing at least 35% of the world merchant shipping tonnage.

MEPC 65 approved a draft IMO Assembly resolution on the application of regulation B-3 (management and control requirements for ships) of the BWM Convention to ease and facilitate its smooth implementation. This generally proposes that ships constructed before the entry into force of the convention will not be required to comply with regulation D-2 (ballast water performance standard) until their first renewal survey following the date of entry into force of the convention. The aim of the draft resolution is to clarify uncertainty in relation to the enforcement of regulation D-1 (ballast water exchange standard) and regulation D-2, upon entry into force of the convention. Further, the Committee granted Basic Approval to three, and Final Approval to three, ballast water management systems using Active Substances. MEPC 65 approved also BWM-related guidance, including Guidance concerning ballast systems.
The international community through the MEPC are critical to addressing shipping impacts on the environment. Increasing concerns among the stakeholders on adverse environmental impacts such as pollution and waste brought by shipping activities, and the threats on the environment and resources act as the main drivers to the adoption of greener practices. In the face of intensifying global trade and shipping activities, the international community envisages that green practices would help to lessen environmental damage from shipping operations while enhancing performance and efficiency.

Commensurate efforts by all members of the ocean business along with the shipping industry are crucial to achieve the desired protection of the marine environment. The leadership shown by the international community must be linked with leadership from all relevant stakeholders if the oceans are to be truly kept safe, secure, efficient and clean. Governments, along with the shipping and maritime industries and the world community, should collaborate to make the necessary investments and take actions to bolster the future of the maritime transportation system and ensure that shipping continues to be environmentally friendly.

Malaysia’s strategic location along the Straits of Malacca (SOM) used for international navigation and global trade makes it all the more significant for green shipping practices to be developed and adopted. Through the years Malaysia has become more green-conscious as apparent from the ratification of a number of IMO green shipping conventions and subsequent measures adopted at the national level. Malaysia signed three conventions in September 2010 alone ie, the Ballast Water Convention, Annex VI of MARPOL as well as the Antifouling Convention, and followed up with various actions at the national level which included managerial measures, capacity building, as well as research and monitoring.

The national shipping line, Malaysia International Shipping Corporation Berhad (MISC), has also been committed in reducing their carbon footprints through the implementation of Green Technology initiatives (GT initiatives). MISC has also been working together with the academia to conduct studies on determining the energy efficiency of their ships, besides evaluating the performance of their fleet with regards to carbon dioxide emissions, and enabling monitoring of the effects of their emission reduction measures. Results have shown that MISC ships in operation are generally efficient as compared to their emission reduction measures. Results have shown that MISC ships in operation are generally efficient as compared to similar studies by IMO and other worldwide fleets. These initiatives not only reinstate MISC’s commitment to the MEPC, but also towards ensuring their ships comply with the global environmental requirements of the industry. In addition, several of the MISC ships have also been credited with Green Awards, which amongst others, enables them to reap various financial and non-financial benefits including a considerable reduction on port tariffs at ports in Belgium, Canada, Netherlands, New Zealand, Portugal, and South Africa, to name a few.

It is nevertheless important Malaysia continues to work on improving practices especially in terms of energy efficiency, technology development and innovation, capacity building, and the development of maritime infrastructure. These must be underpinned by the principle of global standards and strengthened regional co-operation. Additionally, there are also possibilities to look at new areas and ways and means to achieve improved management of the environment with regards to the shipping sector, for instance via the option of establishing protected areas in suitable sites in the SOM.