

Ballast Water Management (BWM) Convention: Late Implementation, Huge Impact

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Ballast water is used to stabilize the ships and is essential for the hydrodynamic safety of the ship. Ships fill in ballast water in their tanks after unloading the cargo at the destination port and then discharge it prior to reaching the source port. During this process, a large number of marine organisms such as bacteria, microbes, small invertebrates, eggs and larvae are transferred from their native location to a foreign environment. In the process, there is a persistent danger that these organisms may become invasive species and could wipe out local biodiversity, thereby permanently changing the native marine environment. The problem of invasive species has been observed across the world and is expected to grow further due to the expansion in seaborne trade and new routes taken by ships. It is estimated that up to 5 billion tonnes of ballast water is transferred annually throughout the world and approximately 10,000 unwanted species are carried in ships ballast tanks daily. Ballast water is hence widely recognised as a major environmental threat as it endangers the sensitive marine ecosystems and may lead to irreversible damage to marine life.

In order to prevent the unhindered flow of marine organisms across the oceans, standards and procedures for management of ballast water have to be implemented so as to minimize the transfer of harmful aquatic organisms. Article 196 of the UN Convention on the Law of the Sea, 1982 relates to 'use of technologies or introduction of alien or new species' and there is a provision for introducing a legally binding mechanism to coordinate a global response to this issue. Under this article, "States shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto." In accordance with this clause, the IMO adopted the 'International convention for the control and management of ships' ballast water and sediments', known as the BWM

Convention by consensus in 2004. However, it took more than 11 years for countries to ratify this convention. Finland was the latest signatory to this convention in September 2016, bringing the overall country count to 52. With its accession, the combined tonnage of contracting parties crossed 35 percent threshold (tonnage of world merchant shipping) and the convention will enter into force from 08 September 2017.

Once the BWM convention is enforced, all ships of 400 GRT and above will be required to fit an approved ballast water treatment system onboard the ship. Ships would need to have a ship specific BWM plan approved by the maritime administration and this will be verified by issue of an international BWM certificate. The BWM plan includes a detailed description of the actions which need to be taken to implement the ballast water exchange standard and the ballast water performance standard for ships. Under the regulation for ballast water exchange, all ships should conduct ballast water exchange at least 200 nm from the nearest land and in water at least 200 metres in depth. Further, all ships shall remove and dispose off sediments from spaces designated to carry ballast water in accordance with the provisions of the ships' ballast water management plan. The ship will also have to maintain a ballast water record book which would record the time and location of taking or discharging the ballast water and the type of treatment which is undertaken on-board a ship.

According to the existing guidelines, BWM systems onboard ships shall discharge less than 10 viable organisms per cubic metre (greater than or equal to 50 micrometres in size) and less than 10 viable organisms per millilitre (less than 50 micrometres and greater than or equal to 10 micrometres in size). Further, to ensure that there is minimal health impact, standards have been adopted to ensure that the discharge of the indicator microbes shall not exceed the pre-defined concentrations. More than 50 BWM systems manufactured by various companies have received type final approval certification for installation on-board ships. There are three types of ballast water treatment systems: mechanical, physical and chemical. The mechanical treatment methods include filtration and separation while physical treatment methods involve sterilisation of the ballast water by use of ozone, ultra-violet light, electric currents and heat treatment. Chemical treatment methods include addition of biocides to ballast water to kill organisms.

The IMO Secretary General has termed the BWM convention as a significant step towards preservation of the marine environment but complying with the convention would pose a huge challenge for the shipping industry. The convention will impact ship-owners as they will have to retrofit the ballast water treatment systems at an additional cost. It is

estimated that around 60-70,000 ships would have to be fitted with approved ballast water treatment system. It will also lead to an increase in the sales of ballast water treatment systems and the time spent to retrofit the system on operational ships will lead to loss of productivity for shipping companies. Ship operators will have to train seafarers to take various measures to comply with the new regulations when the ship is underway. Ship designers and ship builders will have to modify the existing design for optimising the fitment and for system integration of the ballast water treatment equipment and systems onboard ships. Ports where cleaning and repair of ballast tanks are undertaken will need additional facilities for reception of sediments from ballast water tanks. Maritime administrations of flag states will have to make extra arrangements for inspection of vessels including sampling of ballast water and for verification of documents. Port state control would have to train their staff for detecting the violation of regulations and for collecting evidence apart from having to issue additional documents in a routine manner.

The BWM convention does not apply to warships and hence there are no implications for the navies. India acceded to the BWM convention in 2015 and the Union Cabinet approved the introduction of the Merchant Shipping (Amendment) Bill, 2015 in May 2015. The bill provides for penalty on the violation/non-compliance to the regulations contained in the convention and there is a provision for the ports to charge the visiting ships for the use of additional facilities. Further, Indian ships below 400 GT plying within the territorial waters of India shall be issued an Indian Ballast Water Management Certificate instead of an international certificate and have to follow all regulations under the convention in Indian waters.

The BWM convention is likely to significantly lower the negative environmental impact from shipping and is an important step in environmentally safe shipping. It directly contributes to Sustainable Development Goal (SDG) 14 on sustainably using the oceans. However, there are many implications for the shipping industry and maritime actors will have to cooperate to overcome the challenges for implementing the convention seamlessly across the globe.

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