【欧州】【海事】

Maritime Issues - Contribution toward sustainable development goals (SDGs): IMO's Sustainable development goals, AP Moller Maersk's decarbonisation plan and the "Getting to Zero Coalition"

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【概要：Summary】

In the past decades, the International Maritime Organisation (IMO) and the shipping industry have been postponing measures to deal with the problem of GHG emissions in maritime transport. However, in April 2018, the IMO's Maritime Environment Protection Committee (MEPC) decided to set the target to reduce the CO2 emissions for international shipping by 50% by 2050, based on 2008 levels. The IMO has also considered sustainable development goals on a general basis. The mandatory data collection system, which was introduced on 1 January 2019 and the adoption of the strategy to reduce GHG emissions from shipping at the MEPC 72 are important steps to halve the shipping industry's GHG emissions by 2050, based on 2008 levels. Furthermore, the IMO actively works towards the UN's 2030 Agenda for Sustainable Development and the associated Sustainable Development Goals (SDGs). The IMO's Technical Cooperation Committee has formally approved the connection between the IMO's technical assistance work and the SDGs, with the SDG 14 "Below water" being directly connected to the IMO's work. Since the SDG 14 aims at conserving and sustainably using the oceans, seas and marine resources for sustainable development, the IMO is basically involved in all of the SDG 14 targets regarding international shipping. While AP Moller-Maersk is leading the shipping industry with its net-zero emissions target by 2050 towards a carbon-free future for the transport, it also supports the SDG targets. Moreover, at the UN Climate Action Summit, many of the major international corporations have committed to developing commercially viable, zero-GHG emissions vessels by 2030. The "Getting to Zero Coalition" is aiming at introducing zero- emissions vessels operating along deep-sea trade routes by 2030. This needs to be supported by the setting up of infrastructure for zero-carbon energy sources, its production, distribution, storage and bunkering. Considering the about 25-year life-span of vessels, the international shipping industry needs the support of shipbuilders and engineers to provide zero emission vessels, zero-carbon fuels and new propulsion systems to achieve the necessary technological transition.

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1. The IMO's CO2 emission reduction target

The IMO will introduce a new global limit for sulphur in fuel oil used on board ships of 0.50% m/m (mass by mass) for all regions outside Emission Control Areas (ECAs) from 1 January 2020. However, the shipping sector shares also a collective responsibility to transform its operations towards decarbonisation. Since maritime transport is exempted from international agreements to reduce GHG emissions, the IMO has to regulate the maritime transport's GHG emissions. According to the IMO's third GHG study,

maritime transport emits around 940 million tonnes of CO2 annually and is thereby responsible for about 2.5% of global GHG emissions. Also most other emissions increase in parallel with CO2 emissions and fuel, with the important exception, that methane emissions are projected to increase more rapidly, as the share of LNG in the fuel mix increases. Meanwhile, in April 2018, the IMO agreed on an initial GHG strategy to reduce the maritime transport's GHG emissions by 50% by 2050, based on 2008 levels for international shipping and guiding principles. The IMO's Initial Strategy on the Reduction of GHG Emissions from Ships supports a three-step approach towards addressing CO2 emission from international shipping. It will be followed by decision-making on what further measures, if any, are required. As of 1 January 2019, the new mandatory data collection system for reporting the ship fuel oil consumption data was introduced as the first in the three-step approach under the roadmap towards 2023. The Fuel Oil Data Collection System is important for collecting consistent, reliable and robust data on the international maritime transport. However, the IMO's initial GHG strategy does not give a schedule for the set up of legal restrictions on CO2 emissions. It is a framework for IMO member states to set levels of ambition to reduce GHG emissions. The EU is waiting for the IMO's presentation of GHG emissions reduction measures for the period after 2023, in order to eventually decide on the introduction of unilateral measures within the EU.

2. The IMO's efforts for achieving the UN's sustainable development goals (SDGs)

In 2015, 193 countries adopted the UN's 2030 Agenda for Sustainable Development, which defines 17 Sustainable Development Goals (SDGs). The Agenda aims at introducing action to eradicate poverty and to achieve sustainable development by 2030 worldwide. As a United Nations organisation, the IMO is actively working towards achieving the 2030 Agenda's Sustainable Development Goals (SDGs). In fact, most of the 2030 Sustainable Development Agenda can only be realized with the support of a sustainable transport sector. Accordingly, the IMO underlines its connection and action towards achieving all the 17 SDGs. The IMO's work can actually be linked to all individual SDGs. However, considering the fact that international shipping takes place on the world's oceans, the SDG 14 "Below water", is directly connected to the IMO's work, including the improvement of international shipping's safety and security, prevention of pollution from ships, ship design, construction, equipment, manning, operation and disposal. Therefore, the IMO is directly related to all of the SDG 14 targets aiming at conserving and using the oceans, seas and marine resources for sustainable development. Accordingly, the IMO's Technical Cooperation Committee has formally approved the connection between the IMO's technical assistance work and the SDGs, with the SDG 14 being the central target.

The implementation and enforcement of the main conventions and regulations adopted by IMO Member States actively address marine pollution, mainly from sea-based sources but also, at least indirectly, from land-based sources. The IMO also supports the targets for managing and protecting marine and coastal ecosystems, including the establishment of Special Areas and Particularly Sensitive Sea Areas. The IMO is also aiming at the protection of marine biodiversity and the mitigation of the threat of invasive species distributed by ships. The IMO's work also includes measures to reduce underwater noise from ships and adopting measures to avoid collisions between ships and marine mammals.

Furthermore, the IMO Council endorsed the theme "Sustainable shipping for a sustainable planet" as the World Maritime theme for 2020, which will provide an opportunity to raise awareness of the United Nations' Sustainable Development Goals (SDGs). The SDG Summit, the Climate Action Summit and further meetings relating to the environmental aspect of international shipping are planned for 2020. The IMO supports the transition of the shipping industry toward a sustainable future, including measures to cut GHG emissions and reduce the sulphur content of ships' fuel

oil, among others. In this respect, the IMO is in line with the approach laid out in the SDGs Strategy. The IMO is ready to further raise awareness of the UN SDGs and to support its member states in their efforts to implement the 2030 Agenda.

3. The maritime transport's path to decarbonisation

The maritime transport industry supports the IMO's decarbonisation plans. A group of 34 maritime industry leaders and CEOs have joined the non-profit organisation Global Maritime Forum. The Global Maritime Forum has already started working with financial institutions, ship-owners, the University College London and others to develop a set of principles covering the inclusion of climate alignment and risk considerations in the decision making processes. The maritime industry should accelerate innovation in the technology and business and facilitate the transition to zero-carbon fuels and new propulsion systems in order to achieve the goal of decarbonisation. Regulations should provide long-term certainty for financiers, builders, owners and charterers to make the required investments in low-carbon technologies. Legally binding, enforceable actions set by the IMO and enforced by member countries are required.

Different solutions have different benefits for different types of ships and it is important that solutions are not only viable from a commercial perspective but are also technically feasible and can be safely adopted and operated. While in short-sea shipping, like ferries, electrification is a possibility and hybrid and electric ferries already exist in Norway, Denmark and Sweden, other alternatives are needed for deep-sea vessels.

The simplest solution identified so far for deep-sea vessels is a form of liquid fuel to replace heavy fuel oil. Currently, there are three options in consideration, including biomass-derived fuels, hydrogen and synthetic non-carbon fuels, like ammonia. Each of these three solutions has its challenges. Biomass-derived fuels are being tested as drop-in fuels on certain routes, but they are considered being only a transition solution. They have capacity constraints as production of biomass is in competition with food production and therefore, hydrogen and other synthetic non-carbon fuels seem to have the highest potential as a long-term solution.

4. AP Moller Maersk's target to reach net-zero CO2 emissions in its operations by 2050

The company A.P. Moller-Maersk, which comprises of container shipping, ports and terminals, supply chain management and other businesses has developed a sustainability strategy to contribute to the UN Sustainable Development Goals. 70% of Maersk's total GHG emissions are related to ocean transport, but the decarbonisation strategy will also address Maersk's land transport and inland assets. In 2018, Maersk established an ambitious goal for reducing CO2 emissions towards having net-zero CO2 emissions with its operations by 2050. Maersk is convinced that the climate change problem can only be solved by becoming carbon-neutral as efficiency will not be enough. With current technology proving insufficient, Maersk recognises the need for innovation and collaboration across the industry. So far A.P. Moller - Maersk has not decided how it will manage to reach this target of net-zero CO2 emissions in its operations by 2050. However, by setting the target, Maersk hopes to create a certain momentum to inspire researchers, technology developers, investors, cargo owners and legislators to come up with sustainable solutions for the maritime industry. Considering the 20-25 years lifetime of vessels, Maersk would need carbon neutral vessels by 2025 to 2030 to realistically achieve the 2050 target. The use of new zero-carbon emission energy sources such as a new generation of biofuels, hydrogen or other CO2 emission neutral fuels, would have to be already available by 2030 in order to achieve the 2050 target.

Furthermore, Maersk also supports and commits to the United Nations Sustainable Development Goals. Over the past four years, Maersk has invested around USD 1bn and engaged in the development and deployment of

energy-efficient solutions. The focus is on finding solutions specific to ocean transport, which may be different solutions compared to transportation by vehicle, train or plane.

According to the Chief Operating Officer of Maersk, Søren Toft, the only possible way to achieve the decarbonisation in the industry is by fully transforming to new carbon-neutral fuels and supply chains. However, Maersk also points out that it could not achieve the 2050 target of zero CO2 emissions without cooperation and help from shipbuilders, engineers and naval architects. Maersk points out that "an acceleration in new innovations and adaption of new technology is required". In particular given the 20-25-year lifetime of a vessel, it is urgent to start developing the new type of vessels to make them enter the market by 2030 at the latest in order to see their fleets in operation by 2050.

5. The UN Climate Action Summit and the "Getting to Zero Coalition"

On 23 September 2019, some leaders came to the UN Climate Action Summit with concrete, realistic plans to enhance their contributions by 2020, in line with reducing GHG emissions by 45% over the next decade, and to net zero emissions by 2050. The UN Climate Action Summit brought together governments, the private sector, civil society, local authorities and other international organizations to develop ambitious solutions in areas including the global transition to renewable energy; sustainable and resilient infrastructures and cities; sustainable agriculture and management of forests and oceans; resilience and adaptation to climate impacts; and the alignment of public and private finance with a net zero economy. In order to ensure that the actions in the real economy are as effective as possible, the UN Secretary-General prioritized action portfolios, which are recognized as having high potential to curb GHG emissions and increase global action on adaptation and resilience.

At the United Nations Climate Action Summit, A.P. Moller - Maersk announced that efficiency measures would not be enough to decarbonize maritime transport as it only can keep emissions lower. Instead, the shipping industry can only become carbon neutral if it finds a different type of fuel or a different way to power assets. Therefore, during the Summit, the Danish Minister for Foreign Affairs, and CEOs from Maersk Container Industries, as well as companies from the maritime, infrastructure, energy and finance sector, including the oil company Shell, Citibank, Cargill, Kuehne + Nigel, Unilever, the Antwerp Port, and Sustainable Energy for All, among others, launched the so-called "Getting to Zero Coalition". The GtZ Coalition brings together 74 major shipping companies and members of civil society. The GtZ Coalition highlights the urgency of addressing the climate emergency and focuses attention on how to decarbonise the world's largest ocean going vessels and its energy value chains, in order to ensuring that global trade is served in a sustainable way.

The GtZ Coalition highlights the need for collective action to decarbonise shipping, pointing out that the next decade is the key in the Coalition's efforts to co-develop and deploy sustainable solutions for the logistics industry. The aim is to have the first commercially viable, deep-sea carbon-neutral vessel in operation by 2030. The challenge around commercially viable zero emission vessels is not primarily seen as a technological challenge, as zero emission fuels based on biomass and hydrogen produced from renewable electricity or from natural gas combined with carbon capture and storage become available. The challenge is considered being the necessary collective action, since decarbonizing shipping requires a systemic transformation that concerns the entire maritime shipping industry. There is the urgency to act, with ships entering the global fleet in 2030 still operating in 2050. Therefore, the challenge is to make zero emission vessels available in only a decade and to make the entire shipping industry utilise them.

6. Conclusion

In the past, the shipping industry and maritime

transport have been exempt from regulations to address the GHG emissions of ships. However, the IMO had to accept responsibility for the shipping industry's GHG emissions and has set up goals for the decarbonisation of the maritime transport. Considering Maersk's and other shipping companies efforts, it is the most important message that they support the IMO's climate strategy to reduce the total GHG emissions by at least 50% by 2050. Maersk's plan to reduce the GHG emissions to net-zero by 2050 is a promising target, but it is also clear that significant innovation in shipbuilding and ship propulsion will be necessary in order to reach this target. While the international shipping industry with the leading company A.P. Moller Maersk has committed to lower GHG emissions and to become net zero-emission industry, the main challenge will be the transformation of the entire shipping industry towards net-zero GHG emissions in a very limited time frame. Ships have a 25-year lifespan so any new orders over the next decade will have to be for vessels with new designs that will use biofuels, ammonia, hydrogen, batteries or another form of alternate fuel for propulsion. The industry will urgently need the support of shipbuilders and engineers to achieve the transition to zero-carbon emission technologies.

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