【欧州】【Common, 海事】

Common - Follow-up action on Post Paris agreement relevant to aviation and maritime/Maritime issues - Internal regulation on gas emissions: The European Commission publishes the EU's 2019 annual report on CO2 emissions from maritime transport

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【概要：Summary】

Although the introduction of global measures for reducing GHG emissions from international shipping is considered being the best approach, the International Maritime Organisation (IMO)'s slow progress to agree on measures for reducing CO_2 emissions had triggered EU actions. The EU's strategy started with the monitoring, reporting and verification of CO_2 emissions from large ships using EU ports in 2018. On 30 June 2019, the European Commission published for the first time the figure of total CO_2 emissions of ships over 5,000 gross tonnage in maritime transport activities within the European Economic Area (EEA). The 2018 data, which was published by the end of June 2019, was only preliminary and approximate in character. Further updated figures entered in the final statistics, which were published by the end of 2019.

The first available data showed that the ships covered by the MRV Regulation emitted more than 130 million tonnes of CO_2 in 2018, which is more than the annual CO_2 emissions of Belgium.

While meanwhile, the IMO's system entered into force on 1 January 2019, including the collection of fuel consumption data, ships calling into EEA ports have now to report under both, the EU MRV Regulation and the IMO Data Collection System("global IMO DCS"). Under the global IMO DCS, monitoring obligations started in 2019 and the first reporting year is 2020. Despite the expected efficiency gains in the container sector and the high ratio of cargo value carried relative to CO_2 emissions, all sectors in maritime transport will need to do much more in the coming years in order to meet the reduction goals adopted by the IMO.

The European Commission's annual report is based on data from emissions in 2018, reported by companies until September 2019 under the EU Regulation on monitoring, reporting and verification (MRV) of CO_2 emissions from maritime transport. The report analyses the CO_2 emissions and energy efficiency information of all the ships over 5,000 gross tonnage, which performed maritime transport activities related to the EEA in 2018. The data and report will be published each year, to allow a better understanding of the characteristics, CO_2 emissions and energy efficiency of the monitored fleet.

【記事：Article】

1. The EU's MRV and the IMO's global data

collection system (DCS)

At EU level, CO_2 emissions from maritime transport are expected to increase by 86% above 1990 levels by 2050, due to further increases in the demand for the movement of goods. On the other hand, the EU intends to meet the Paris Agreement's target to keep the increase of temperature below 1.5° C and to achieve the EU's Green Deal target to achieving net-zero GHG emissions by 2050.

Since the Paris Agreement does not cover the maritime transport, the IMO had to set up goals for the decarbonisation of the maritime transport. On 16 April 2018, the IMO adopted an initial strategy to reduce the maritime transport's GHG emissions by 50% by 2050. However, since the introduction of GHG emission reduction measures from maritime transport at international level was delayed for years, the EU had already started to take measures to also tackle the CO_2 emissions in maritime transport. The EU introduced a monitoring, reporting and verification (MRV) system for maritime transport's CO_2 emissions, based on Regulation (EU) 2015/757 of 29 April 2015. The Regulation on the monitoring, reporting and verification of CO_2 emissions from maritime transport lays down rules for the accurate MRV of CO_2 emissions and other information from ships arriving at, or departing from ports under the jurisdiction of a Member State. The Regulation (EU) 2015/757 was meanwhile amended by the Commission Delegated Regulation (EU) 2016/2071 of 22 September 2016 as regards the methods for monitoring CO_2 emissions and the rules for monitoring other relevant information. (C/2016/5900). Since 1 January 2018, large ships (over 5,000 gross tonnage) in the European Economic Area (EEA) already have to monitor and report their CO_2 emissions, fuel consumption and other parameters, such as distance travelled, time at sea, etc., according to Regulation (EU) 2015/757. The first emissions reports on monitoring of fuel consumption, CO_2 emissions and energy efficiency had to be submitted in April 2019.

At international level, in 2011, the IMO adopted the Energy Efficiency Design Index (EEDI) for new ships, which sets an internationally agreed energy efficiency standard for new vessels. Furthermore, it was decided that all ships would have to implement a Ship Energy Efficiency Management Plan (SEEMP). In 2016, one year after the adoption of the EU system for MRV of CO2 emissions, the IMO's MEPC adopted amendments to the MARPOL Convention, establishing the legal framework for a global data collection system for fuel oil consumption of ships ("global IMO DCS").

The MEPC 70 in October 2016, and by MEPC 71 in July 2017 agreed on the details and implementing modalities of the global IMO DCS through "guidelines". Under the global IMO DCS, monitoring obligations started in 2019, one year later than the EU MRV, which started in 2018. In 2018, the IMO adopted an initial strategy to reduce GHG emissions from ships with the objective to reduce the carbon intensity of ships by at least 50% by 2050 compared to 2008 levels.

2. Adjustment of the EU's MRV to the DCS system

Meanwhile, the presentation of the European Green Deal in December 2019 and the target to reach zero net CO_2 emissions by 2050, might make it necessary to reconsider the rules for the reduction of CO_2 emissions from shipping. Accordingly, there exist considerations to include the maritime transport into the EU-ETS, with wide-ranging changes for the shipping industry.

Based on the EU's roadmap to make Europe the first climate-neutral continent by 2050, the European Green Deal covers also maritime transport. In this context, the European Commission will look into extending the Emissions Trading System to also cover the maritime sector.

While from January 2019 ships performing EEA-related maritime transport activities have to fulfil monitoring and reporting requirements under both systems, the EU MRV Regulation and the global IMO DCS, the European Commission will also have to

consider measures to harmonise the EU's MRV system with the IMO's DCS system. Regarding the data collection and reporting details, the EU's MRV and the IMO's DCS follow different rules. Therefore, the EU is preparing legislation to revise the EU's MRV system to bring it in line with the IMO's global data collection system for ship fuel oil consumption data. On 4 February 2019, the European Commission adopted a proposal for a regulation to revise the EU system for monitoring, reporting and verification of CO_2 emissions from maritime transport (Regulation (EU) 2015/757), (COM (2019) 38 final).

Once the European Parliament's ENVI Committee has agreed on the amendments to the proposal, and the Parliament's plenary has submitted its position, the Parliament, Council and Commission will start their trilogue negotiations on the final amendments and changes on the COM (2019) 38 final.

3. The European Commission's reports on the CO_2 emissions in maritime transport

Based on the MRV system for large ships over 5,000 gross tonnage at EEA ports, their related CO_2 emissions and other relevant information will be reported as of 2019, on 30 April of each year. Companies submit a verified emissions report for their ships of over 5,000 gross tonnage through the EU's system THETIS MRV to the Commission and to the Flag States, in which those ships are registered, for their maritime transport activities within the EEA in the previous calendar year. From 2019, by 30 June of each year, companies shall ensure that all their ships that have performed activities in the previous reporting period and are visiting ports in the European Economic Area carry on board a document of compliance issued by THETIS MRV. This obligation might be subject to inspections by Member States' authorities.

Based on the data, the European Commission publishes an annual report to inform the public about the CO_2 emissions and energy efficiency information of the monitored fleet.

4. The European Commission's 2019 report on vessels' CO_2 emissions in the EEA

4.1. The MRV report

After the European Commission published the first preliminary information in June 2019, the first annual report on CO_2 emissions of vessels with more than 5,000 gross tonnage within the EEA for the year 2018 was published on 19 May 2020. Namely, this report is based on emissions data for 2018, reported by companies until September 2019. CO_2 emissions in the EU MRV system are estimated based on fuel consumption at individual ship level and based on specific emission factors defined for every fuel type. Based on the first year of reporting, it is possible to provide a number of recommendations to improve the MRV system for the next reporting periods. On 15 May 2020, the European Commission published a staff working document entitled "Report from the Commission, 2019 Annual Report on CO_2 Emissions from Maritime Transport", C(2020)3184final, SWD(2020) 82 final. The data accounts for at least 94% of EEA port calls made by ships covered by the Regulation and it covers around 90% of all CO_2 emissions. The IT system THETIS-MRV has demonstrated its ability to facilitate the collection of data and the transfer of information among all actors involved in the implementation of the Regulation.

In total, 11,653 emission reports out of 12,400 were successfully verified and submitted to the Commission as of 23 September 2019. Around 400 were satisfactorily verified but not submitted by companies, suggesting that some of them did not fully understand the requirement to submit their emission report once approved by verifiers. In addition, around 300 other emission reports were in various drafting stages. However, most companies fulfilled their obligation on time. The EU MRV dataset extracted on 23 September 2019 is based on 11,653 emission reports submitted to the Commission, representing more than 1.5 million single data points. While the vast majority of this data appears correct and complete, the dataset contains some

inconsistencies and missing information. It should be noted that 630 emission reports out of the 11,653 in the database show 0 (zero) CO_2 emissions, because they concern ships that did not call at any EEA port during the reporting period. This system provides information on all ships calling at ports in the EEA. However, 1323 ships made port calls in the EEA in 2018, but were missing in THETIS-MRV. In addition, 741 ships registered in THETIS-MRV called at a port in the EEA in 2018 but had not produced an emission report at the time of this analysis.

4.2. Fuel consumption

The ships' fuel consumption is directly linked to their CO2 emissions and is therefore one of the key indicators reported under the EU MRV regulation. The total amount of fuel consumption reported in THETIS-MRV represents around 90% of the marine fuel sold in the EU. Although quite similar, these two quantities are difficult to compare since marine fuel sold in Europe might be used for voyages outside the scope of the EU MRV Regulation, and vice versa. Additionally, the fuel consumed by ships below 5,000 gross tonnage is not reported in THETIS-MRV. This has previously been estimated at around 10% of the consumption of larger ships.

In total, the monitored fleet consumed more than 44 million tonnes of fuel in 2018. In comparison, the EU total oil demand amounted to 635.8 million tonnes in 2018. In absolute terms, container ships consumed the most fuel at 14 million tonnes, followed by bulkers and oil tankers at around 5.6 million tonnes each. Therefore, these three ship types represent close to 60% of all the fuel consumption reported in the EU MRV system. However, fuel consumption varies and it should be noted that container ships reported more than twice the fuel consumption than that declared by bulk carriers, despite having spent slightly less time at sea in total. The design and operation of container ships explains this higher fuel consumption. Container ships generally have more powerful engines compared to bulkers and they operate at much higher speeds (40% faster compared to bulkers). The lower amount of fuel consumed by bulkers can mostly be explained by their low cruising speed.

The total fuel consumption in 2018, consisted to 70% of heavy fuel oils, which is a residual fuel and a heavy pollutant, 20% marine gas oil and diesel and 3% Liquefied Natural Gas (LNG), among others.

4.3. Shipping's CO_2 emissions in 2018

The 11,653 ships covered by the EU's MRV emitted a total more than 138 million tonnes of CO_2 emissions in 2018, representing about 3.7% of the EU's total CO_2 emissions. If maritime transport was a country its CO_2 emissions would be comparable to the CO_2 emissions of Belgium. When compared to other modes of transport, 138 million tonnes of CO_2 corresponds to around 80% of the emissions generated by aviation (full-flight emissions of all flights departing from EU28 and EFTA airports), or 16% of the CO_2 emissions released by road-transport. The 11,653 ships that burned fossil fuels to perform over 400,000 voyages, travelled 323 million nautical miles, and transported the vast majority of EU's external freight trade.

The 11,653 ships covered by the EU's MRV in 2018 represent 38% of the world merchant fleet (above 5,000 gross tonnage). The monitored fleet of ships burned fossil fuels to perform over 400,000 voyages and transported the vast majority of EU's external freight trade. However, more than two-thirds of the monitored fleet in the EEA is non EU-flagged. CO_2 emissions reported in the EU MRV system represent 15% of the total CO_2 emissions from international and domestic shipping. Only 32% of the total CO_2 emissions came from voyages inside the EEA, while most CO_2 emissions come from voyages outside the European Economic Area (EEA), with 66%. Therefore around two-thirds of the CO_2 emissions reported by the monitored fleet came from voyages to or from a port outside the European Economic Area. These incoming or outgoing voyages are therefore responsible for the majority of CO_2 emissions. This is consistent with maritime port freight statistics,

which indicate that most EU maritime freight transport (62% of goods) involves partners outside the EU. Voyages between ports in the EEA are responsible for around a third of the reported CO_2 emissions (32%), which equals around 44 million tonnes of CO2 emissions. 6% of the CO_2 emissions occurred at berth.

According to the Commission's report, the fleet covered is relatively young with 11 years of age on average. However, there are large age disparities between ship types. Bulkers are the youngest ships, while passenger ships and Ro-pax tend to be much older. About 74% of total CO_2 emissions are produced by vessels built before 2013 and younger ships constructed after 2013 emit less on average. Out of the entire monitored fleet, 8,840 ships fall into the category of ships built before 2013. Considering that ships can last 25 to 30 years, a large part of the monitored fleet is likely to still be operating in 2040. Since younger vessels tend to be more energy efficient, the age of ships in operation has an effect on fuel consumption and CO_2 emissions. Most monitored ships built after 2015 already comply with energy efficiency standards (EEDI phase 2), applicable in the period 2020-2025.

5. Conclusion

The European Commission has issued its 2019 report on MRV data for CO_2 emissions from Maritime transport, covering 11653 ships, which emitted 138 million tonnes of CO_2 in 2018.

The lessons learnt from this first year will have an influence on the further improvements of the MRV process. Based on these recommendations the MRV system is expected to improve for the next reporting periods. The level of coordination and cooperation between national accreditation bodies, verifiers, companies, port States, flag States and the Commission could be improved in order to facilitate the implementation of the Regulation. Secondly, the THETIS-MRV software could be updated to include warning and error messages when companies are entering seemingly incorrect or incomplete data and thirdly, the Frequently Asked Questions and the THETIS-MRV online tutorials could be updated to avoid misunderstanding and misreporting.

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