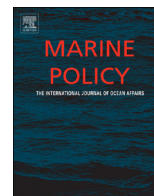




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Regulating global shipping corporations' accountability for reducing greenhouse gas emissions in the seas

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ABSTRACT

Up until the recent oil and commodity price crash in 2015, there has been exponential growth in global shipping and trade, and this increase means that prompt action is required to reduce vessel-sourced greenhouse gas (GHG) emissions. Future projections suggest that maritime CO₂ emissions will increase substantially by between 50% and 250%. However, there is currently no international instrument holding global shipping corporations accountable for their vessels' performance in emissions reduction. This article critically assesses the current accountability practices and regulations in place for these corporations. It suggests that stakeholders in this industry need to further explore the market based mechanisms (MBMs) that can encourage and even demand that these corporations systematically disclose their vessels' emissions reduction performance in an accurate and timely manner. Developing such mechanisms is vital to assist in the reduction of GHG emissions since a comprehensive international instrument is unlikely to be implemented soon.

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1. Introduction

Worldwide shipping trade provides opportunities as well as challenges in the face of globalization. On one hand, shipping corporations are expanding sea based cargo shipments [18,57] and on the other hand, depletion of resources and environmental pollution caused by vessels is increasing rapidly [67]. Marine vessels owned and operated by corporations account for about 3% of total global greenhouse gas (GHG) emissions ([49, p.2]; [78,113]). This amount is substantial and growing fast. It is argued that if no action is taken, the amount will increase to 18% by 2050 [49]. This is counter-productive to international efforts to keep the global warming temperature increase “to well below 2 °C above pre industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels [111, p.2]”¹.

Against this backdrop, improving the role of the shipping industry in the reduction of GHG emissions from marine vessels is a serious concern (see, for example, [15]). The shipping industry, the International Maritime Organization (IMO), and governments in various states work together to minimize such emissions [74] and the resulting impact on climate change [44,82,91,98]. The Kyoto Protocol to the United Nations Framework Convention on Climate

Change (UNFCCC) specifically urges the developed states to take the lead to reduce vessel-sourced GHG emissions on a Common but Differentiated Responsibility (CBDR) principle. However, because of difficulties in allocating and capturing emissions discharges in international sea space, an emissions apportionment is complex shipping industry (see, for example, [35]). Currently, the aviation industry appears to be responding with a global trading scheme for aviation emissions and utilizing sustainable fuels [14]. Complicating the implementation of similar market based mechanisms with shipping are the tension between CBDR which allows for different levels of effort tied with economic development and the maritime principle of “no more favourable treatment” which means that all shipping nations are treated equally [14, p.689]. Nonetheless, efforts to reduce GHG and non-GHG emissions may lead to significant increases in transport costs and thus drive positive externalities for ship owners to reduce fuel expenditure and thus reduce emissions further. However, promising options are always matched by barriers in the shipping industry such as the industry's complexity, infrastructure lock-in and the necessity for individualized vessel based interventions [35].

The IMO, a United Nations body working with maritime shipping, has developed a protocol, namely, the *International Convention for the Prevention of Pollution from Vessels* (commonly known as 'MARPOL'). This is, by far, the most significant legal instrument worldwide covering all the relevant areas of shipping with specific details [105, p.196]. It outlines the technology, which must be used

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to reduce sulphur oxide emissions and has introduced new design criteria for vessels to ensure efficient energy use. *The United Nations Convention on the Law of the Sea* (UNCLOS) details the sources of marine pollution and the duties and responsibilities of states in this area. Apart from these international instruments, there are many other tools in place to regulate the marine environment and pollution reduction, which have been adopted under the auspices of the IMO and other global organizations.² Unfortunately, none of these instruments adequately focuses on shipping corporations' accountability for effectively reducing vessel-sourced GHG emissions. Parties to these instruments are the nation states. They rarely dictate procedures for shipping corporations to reduce vessels' GHG emissions. For instance, the MARPOL describes a procedure for managing various sources of ship-generated pollution in its 6 annexes. Annexes I and II are about oil and chemical induced pollution regulation and they are compulsory for the states parties. There are some procedures to regulate air pollution from marine vessels in Annex VI of this instrument, but implementation of these procedures by states parties is optional. Moreover, these procedures do not cover GHG emissions from marine fossil fuels. Under this protocol, the control of shipping emissions at the domestic level was passed to developed nations. Thus, the reduction of emissions from international shipping is facilitated by the developed nations working with the IMO. Therefore, countries are largely responsible for their own territorial waters. Unfortunately, most of them are reluctant to develop policies and infrastructure to regulate the emissions issues pertinent to the vessels in their territorial waters.

The IMO is a member-states led organization and it requires mandates from its members to be able to have policies on international shipping. Getting such mandates, however, is historically a challenging task. Prior to the Kyoto Protocol's adoption in 1997, the convention's Subsidiary Body on Technical Advice suggested that the member states consider five options for effective control of emissions from international shipping, but no decision was made as agreement could not be reached on their importance.³ Nevertheless, negotiations are currently underway in the Marine Environment Protection Committee of the IMO for the adoption of a universal instrument for GHG emissions reduction from marine vessels. Unfortunately, the way in which this negotiation process is progressing does indicate that an instrument will not be implemented in the near future. Likewise, even with the adoption of the Kyoto Protocol (which imposes a legally binding emissions reduction target only on the developed states), it is doubtful that these states, as listed in the Annex I of the UNFCCC, will adopt any GHG emissions reduction related instrument based on the CBDR principle in the near future [53,55]. The 15th Conference of the Parties of the UNFCCC approved a work plan for a binding instrument and this was due to be considered at the 60th Marine Environment Protection Committee (MEPC) meeting. But no decision was reached at the MEPC meeting [70,71]. That said, this paper does not seek to undermine the CBDR principle, instead, it proposes an alternative New Governance approach to improve efficiencies in the vessel-sourced GHG emissions reduction regulatory framework at the international level [65,104].

None of the instruments within the current global regulatory framework describe how large shipping corporations are to be accountable for the reduction of their vessels' GHG emissions. We propose holding global corporations accountable for their performance to their wider stakeholders is a market-based mechanism (MBM) and it has been proven to be effective in some industries to enhance the responsible behaviour of large corporations that operate in a highly competitive market with sensitive brand images. One particular strength of this mechanism is that it can expose corporations to the threat of losing their competitive edge in the market. It can also allow consumers to pressure corporations to act

responsibly. These pressures or forces can be operational in various ways. The creation of a regulatory framework, which compels corporations to disclose necessary information in an effective manner, is becoming an increasingly popular method. Hence, the way in which a shipping corporation delivers information on their vessels' GHG emissions to authorities, if not to the general public, is vital for regulating vessel-sourced GHG emissions, in the absence of any particular international instrument.

Interestingly, academic literature on the global shipping corporations' (such as Maersk or Mediterranean Shipping Lines) roles in reducing their vessels GHG emission is negligible.⁴ This article is an attempt to fill this void. The remainder of this paper is as follows. The second section provides a brief definition of 'accountability' followed by discussions on shipping corporations' accountability in the third section. Section 4 discusses corporations' accountability regulations. Having established that improving shipping corporations' accountability is vital for reducing vessel-sourced GHG emissions, the fifth section of this paper critically evaluates the current accountability practices of the top 10 global shipping corporations. Section six assesses the current emissions reduction mechanism, and permits GHG emissions reduction performance disclosure as a MBM to improve shipping corporations' roles in the emissions regulation framework. Section seven concludes the paper.

2. Accountability

Before assessing the accountability regulation of the global shipping corporations at the international level, a note on the meaning of 'accountability' as used in this paper is important. It is important in the sense that this word is 'somewhat multi-faceted and, indeed, a 'murky' term that does not lend itself to precise definition' ([19]; Sinclair, 1995). Although there is a distinct lack of consensus within the socio-political, environmental and accounting domains as to its meaning, in general, 'accountability' denotes 'the duty to provide an account (by no means necessarily a financial account) or reckoning of those actions for which one is held responsible' [19,36]. This is based on the principle-agent theories where 'an agent, who is the accountable actor, must answer to the principle, who is the accouter' ([3,66]; Ross, 1973). Indeed, within the various meanings of 'accountability', there is a trend to define this term from the perspective of one of the actors. From the accouter's perspective, this term 'addresses how the accouter's goals can most effectively be achieved, or how the accouter can influence the accountable one to achieve what the accouter wants' [3]. From the accountable's perspective, this term focuses on how the accountable mechanism created mostly by the accouter can psychologically and behaviorally impact the accountable actor. Accordingly, studies that focus on the accouter actor often explore mechanisms for clarifying goals to that actor, and discuss 'consequences for the accountable actor based on success in achieving the accouter's desires' [3]. Studies on the accountability of accountable actors focus on how these actors act when they are held 'accountable' [68,106]. The underpinning of these concepts is 'the construction of individual moral worth and the acknowledgement of that worth by the assignment of credit or blame for individual actions' [3]. As such, accountability will be defined as a concept within which credit and blame are deeply entrenched and both the actors maintain relational transactions that can 'lead to increased efficiency, effectiveness and justice' [3,87,88]. Edwards and Hulme define accountability as 'the means by which individuals and organizations report to a recognized authority (or authorities) and are held responsible for their actions (Edwards and Hulme, 1996, p. 967).

Accountability has both the elements of answerability and

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