



WORLD SHIPPING COUNCIL  
PARTNERS IN TRADE

18 December 2013

Mr. Theodoros Skylakakis, MEP  
Rapporteur on Commission Proposal COM 2013/480  
Group of the Alliance of Liberals and Democrats for Europe  
European Parliament

**RE: World Shipping Council Comments Concerning Draft Legislation Concerning  
Monitoring of Vessel CO<sub>2</sub> Emissions**

Dear Mr. Skylakakis:

The World Shipping Council (WSC) would like to offer the attached comments on various issues relating to the draft legislation addressing the monitoring, reporting, and verification of CO<sub>2</sub> emissions from vessels visiting the European Union.

The World Shipping Council represents the liner shipping sector of the maritime industry. WSC member ocean carriers provide more than 100 regularly scheduled services to European ports, and annually transport more than 30 million TEUs<sup>1</sup> of European export and import cargo, which comprises roughly two-thirds of the EU's seaborne trade by value.

WSC and its member companies have been active participants in the various international efforts addressing vessel air emissions, and we look forward to being of assistance to you and the Parliament as you consider these issues. Please let us know if we can be of future assistance.

Yours sincerely,

Christopher L. Koch  
President and CEO  
World Shipping Council

---

<sup>1</sup> A TEU is a standard measure for containerized cargo meaning "twenty foot equivalent unit".



WORLD SHIPPING COUNCIL  
PARTNERS IN TRADE

**Comments of the World Shipping Council**  
***Draft Monitoring, Reporting, and Verification Legislation***  
***Under Consideration by the European Parliament***

**18 December 2013**

**Introduction**

Before commenting on the legislation under consideration by the European Parliament to establish a European regulatory regime for vessel air emissions, we note the strong interest and policy rationale for any such measures to be established through the International Maritime Organization (IMO), rather than a patchwork of national or regional regimes. WSC members' vessels call at ports around the world and operate on the high seas outside the jurisdiction of any particular country or group of countries. The industry has a strong interest in a single, uniform regulatory regime governing its global operations. Furthermore, we believe that it is important for the Parliament to recognize both the relevant regulatory requirements governing vessel air emissions that the IMO has already established, as well as the ongoing work of the IMO as it considers further regulatory efforts such as a vessel monitoring and reporting regime and possible further development of energy efficiency regulatory requirements.

We remain concerned that current discussions both at the IMO and within the EU have not fully assessed the fuel cost, vessel efficiency, and emission reduction consequences of measures that have already been adopted. We also remain concerned that there is a lack of clarity about what the specific objectives are for further regulatory efforts, because rationales for further regulatory proposals appear to range from more accurately assessing the industry's actual emissions, to developing some kind of vessel operational efficiency standards, to establishing a fuel levy or emissions trading system priced with a specific industry emission reduction target in mind. Until there is greater discussion and clarity about what regulators intend to develop and accomplish, the dialogue will remain challenging.

There is an informal group of IMO member governments, including representatives of the European Commission, which are presently discussing possible approaches to these issues within the IMO. For your reference and information, attached to this document as an Appendix are comments we recently submitted to this

informal IMO group. We believe these comments are also relevant to any consideration of European legislation by the Parliament and Council.

### **Consistency with IMO Efforts Addressing Carbon and Fuel Efficiency**

The IMO will shortly consider proposals to collect specific vessel fuel consumption data, and other key vessel operating parameters related to estimating CO<sub>2</sub> emissions, from the global fleet. A group of the IMO member governments are also considering how such data could be used for the possible future development of additional fleet-wide efficiency standards. We expect that there will be broad support amongst governments and industry for the International Maritime Organization (IMO) to proceed with the collection of a limited and discrete set of data that will enable the IMO to better estimate CO<sub>2</sub> vessel emissions.

Any separate effort by the EU to collect data from vessels visiting EU ports or operating within the jurisdiction of EU member states would have far less utility as it would be geographically limited. Further, it would not reflect the emissions resulting from the actual transport of EU imports and exports. Further, there is no comparable regime proposed for the transport of goods into or from the EU by rail or truck, which are both less energy efficient than shipping.

Recognizing that global data sets will have greater policy utility, we recommend that any EU legislation be deferred until the IMO has concluded its work on a global monitoring initiative. In the event that the Parliament feels that unilateral European legislation is nevertheless necessary, we would recommend that the data elements required for reporting be the same as the international regime developed by the IMO. It would be very frustrating for a vessel on an international voyage to have to record and report different operational data elements to different government authorities or to report similar data in different ways, when all such data would presumably be collected for a similar purpose.

### **Voyage Specific Data**

If the Parliament were to consider enacting legislation requiring the monitoring and reporting of vessel data, we recommend that the monitoring requirement be structured in such a way that a vessel can collect a single set of data starting from the time it enters European jurisdiction until such time as it leaves European jurisdiction. In the liner shipping industry, a voyage, for example, between Europe and Asia may involve numerous different “legs” within the EU. Monitoring and reporting data for each leg of a voyage would present greater challenges and costs, yet would not seem to serve any clear carbon emission reduction regulatory objective. If there is to be European legislation, we encourage the legislation be drafted to require the reporting of annual figures applicable to vessel emissions subject to the jurisdictional coverage of the scheme, and that data associated with the various distinct segments of a European voyage while it is within European jurisdiction not be required as a part of the monitoring process.

## **NOx, SOx and Other Vessel Emission Data**

The IMO has established comprehensive and forward looking measures to address NOx and SOx emissions from ships through the MARPOL Convention's Annex VI. The IMO has also established mandatory vessel energy efficiency design standards for new-builds as a way to increase fuel efficiency and to reduce CO<sub>2</sub> emissions.

The ongoing discussions at the IMO are trying to address the desire to more accurately assess industry CO<sub>2</sub> emissions to consider what further steps could be taken to increase fuel efficiency and reduce CO<sub>2</sub> emissions. The legislative proposal from the European Commission to the Parliament and Council is also focused on measuring and addressing CO<sub>2</sub> emissions.

We understand that the Parliament is considering expanding the legislation to address NOx emissions, and perhaps other emissions such as sulphur, PM, BC, and methane. We recommend that the legislation not include such an expansion.

First, EU legislation to require vessel-specific monitoring of NOx emissions is unnecessary to facilitate decisions concerning policy actions or regulations concerning NOx emissions from ships. The IMO recently put in place Tier II and Tier III NOx controls through amendments to MARPOL Annex VI. Annex VI is already providing NOx reductions through the Tier 1 and Tier II standards applicable to all new builds since 1999 and 2011 respectively. Annex VI also provides the mechanism for Europe to implement dramatic reductions through application of the Tier III standards in any emission control area (ECA) under the treaty.

The data necessary to inform European decision-makers about whether to designate NOx controls in the Baltic or the North Sea ECAs can already be generated by modelling NOx emissions generated by the fleet consistent with base information available to many researchers in the European Community. This has been done in North America and the Caribbean, and there has been no need or call for vessel specific monitoring to assess the need for, or lack thereof, additional restrictions in deciding whether to designate a given ECA to include Tier III NOx controls. Requirements for such vessel specific data would only increase the burden on the ship owners and operators while adding little value to the relevant regulatory decisions.

Second, SOx emissions already have a comprehensive set of regulatory standards established, and those standards already become much more stringent over time, as noted in our attached comments to the IMO Informal Group. Further, there is already EU legislation requiring 0.5% sulphur fuel in European jurisdictions in 2020, regardless of whether the IMO decides to extend the 0.5% sulphur requirement to 2025, in addition to the current requirements to use even lower sulphur fuel in Emission Control Areas and while at berth.

Calls to further expand the scope of vessel monitoring and reporting efforts to include sulphur oxides, particulate matter, black carbon, and methane also risk driving the MRV legislation into an arena that is far more complicated technically and would require resolution of a number of very difficult issues requiring agreement on definitions,

measurement methods, available technology, and related issues that could mire the draft legislation and implementing rules in a protracted debate.

In light of the measures already in place to address SO<sub>x</sub> and NO<sub>x</sub> and the complications associated with other emissions, we believe that the current MRV discussion within the IMO and the European Parliament should retain a focus on carbon emissions and fuel efficiency.

## **Summary**

The World Shipping Council's recommendations at this time are as follows:

1. Regulations governing the air emissions of ships engaged in international commerce should be set by the appropriate international governing body, the IMO. WSC does not support the unilateral regulation of these issues by any nation or regional group of nations.
2. The requirements that have already been established to regulate vessel efficiency and vessel air emissions, including the very substantial future changes in fuel standards that have already been agreed upon, need to be fully considered in any further consideration of additional measures. What is it about those existing requirements and their consequences for fuel cost and vessel efficiency that are insufficient to ensure very dramatic continued reductions of greenhouse gas emissions from ships? What specifically would further regulatory measures seek to accomplish?
3. If, notwithstanding the above views, the Parliament considers legislation to require the recording and reporting of vessel fuel and operational data, we recommend that such legislation permit monitoring and reporting for the full voyage rotation that falls under the jurisdictional scope of the regime (rather than each specific port-to-port voyage segment for vessels engaged in regularly scheduled liner services); and
4. If, notwithstanding the above views, the Parliament considers legislation on this subject, we recommend that such legislation:
  - a. exclude NO<sub>x</sub> monitoring and reporting, because appropriate emission inventories of NO<sub>x</sub> emissions associated with shipping may be obtained through modelling by competent researchers, and
  - b. exclude monitoring of SO<sub>x</sub>, PM, BC, and methane as inclusion of these monitoring parameters would greatly increase the technical complexity of issues to be resolved in association with the proposed legislation.

WSC would be pleased to discuss any of these issues in further detail if that would be of assistance. WSC staff contacts are Damian Viccars (contact information on letterhead) or Bryan Wood-Thomas at [bwoodthomas@worldshipping.org](mailto:bwoodthomas@worldshipping.org).

# **Appendix**



WORLD SHIPPING COUNCIL  
PARTNERS IN TRADE

## **Comments of the World Shipping Council**

### **Informal International Group – Efficiency and GHG Aspects** **Topics for Discussion with Industry**

25 November 2013

#### **Preface**

Before responding to the various specific questions posed by the Informal International Group, we would like to offer some general comments. It is difficult to respond to questions about specific data elements that may or may not be included in a global vessel efficiency data collection scheme in the absence of agreement and clarity regarding why the data is needed and how the data would be used.

Any mandatory data reporting system would impose regulatory obligations on vessels that do not exist today. The burden of such obligations may or may not be judged reasonable, but such an assessment can only be made after it is clearer what the data would be used for. There does not appear to be agreement at this time that the IMO should establish mandatory vessel operating efficiency standards, or, if such standards are to be developed, what level of detail in the information would be necessary.

Thus, for example, questions about cargo data should be addressed knowing what kind of efficiency standards are envisioned. Is actual cargo carried or actual “transport work performed”, with all its variations per voyage, needed? If so, why? Would an approximate average measure, such as percentage of deadweight tonnage normally utilized, be sufficient? For example, a discussion of distance sailed or hours of operation would benefit from understanding why one would need both metrics in designing a set of operational efficiency standards.

More fundamentally, and as discussed in more detail later in this submission, the IMO’s deliberations on this issue should ensure that consideration is given to the forthcoming increases in fuel costs that have already been mandated, and how those

dramatic fuel cost increases will be driving even further energy efficiency improvement in the industry. The fleet is rapidly becoming more energy efficient, partly in response to the mandatory EEDI standards for new-builds, and partly in response to the basic industry economics of fuel costs requiring increased fuel efficiency. Those economic incentives will become far more dramatic due to IMO regulatory requirements that have already been established, but not yet come into force, to address sulphur emissions, rather than carbon emissions.

It is both logical and necessary that those requirements, including the mandatory use of 0.1% sulfur fuel in Emission Control Areas in 2015, and the more profound impact of the requirement of MARPOL Annex VI to require 0.5% sulphur fuel for operations outside ECAs on a global basis, be considered. These MARPOL Annex VI requirements will dramatically increase the cost of marine fuel and will dramatically increase the incentive for vessels to be even more fuel efficient than they are today. What is it about the much higher costs of the forthcoming MARPOL Annex VI fuel regime in 2020/2025 that fail to provide more than sufficient incentive for the shipping industry to become as fuel efficient as practical? If a \$75-100 billion annual increase in fuel costs<sup>2</sup> is insufficient to incentivize the shipping industry to be as fuel efficient as it can, why is that insufficient, and what is the objective of the energy efficiency operational standards that are to be developed?

## **Responses to Specific Questions**

The following comments are prepared in response to the short paper and specific questions (shown in bold italics) outlined by the Informal International Group in preparation for the meeting planned for 5-6 December 2013 in London. Specific questions posed by the group are organized into three sections: 3.1 System for data collection and reporting; 3.2 Calculating the efficiency of maritime transport; and 3.3 Developing standards. The following comments follow this three part structure with comments organized by the specific questions posed in section 3.1 and more fundamental comments and observations with respect to sections 3.2 and 3.3.

### ***3.1 System for data collection and reporting***

- ***Scope:***
  - ***Should the data collection and reporting system be applicable to all ship types and sizes or should it be limited to certain ship types and sizes? If the data collection and reporting system is not applied to all ship types and sizes, which ships should be covered and why?***

---

<sup>2</sup> If the global maritime industry burns 250 million tons of heavy fuel oil (HFO) a year and if a compliant distillate fuel product costs \$300/ton more than HFO, the cost increase of this change in fuel standards would be \$75 billion per year. With a \$400/ton cost difference, the increase would be \$100 billion per year.

If data collection and reporting is to be required, it would seem logical that such requirements should be applicable to all commercial ship types and sizes. Like other IMO instruments, a lower size threshold would need to be established to avoid reporting by the smallest vessels.

***Which entity (ship owner, operator, or entity responsible for ship IAPP certification) should be responsible for data collection and reporting obligations?***

The final designation of which entity is legally responsible for reporting may depend on the details of what information is to be reported. As a general matter, it is appropriate that reporting be done by the party that has first-hand knowledge of the required information. Because the data elements being discussed relate to operational information, the vessel operator would appear to be the proper entity to be responsible for reporting, although vessel owners and operators may allocate data collection and reporting requirements between themselves as a matter of contract. Such contractual allocations of responsibility would not change the legal responsibility of a vessel to comply with an IMO requirement, but would allow regulated entities to manage their operations in light of the diversity that exists in chartering and vessel management.

- ***How would you monitor and report the following data points? Do you foresee any difficulties? How could they be addressed?***

- ***Fuel consumption/CO<sub>2</sub> emissions***

Fuel consumed is already monitored today. Provided that the interval for aggregating and reporting data is sufficiently long (e.g., 1 or 2 years), and assuming bunker delivery notes could be used, the administrative burden should be manageable.

- ***Hours in service***

It would be helpful to understand how this data would be used. If “hours in service” is deemed to be an appropriate parameter, “hours underway” may be an alternative term concerning what hours are to be recorded. Reflecting on the question of “hours in service”, it is not clear how this is a useful parameter given the varying circumstances that would change this value. For instance, how would one deal with a voyage where the ship’s master is advised 24 hours before picking up the pilot at a port of call that the berth is unavailable? In this circumstance, the vessel may continue at safe minimum speed and stay adrift off shore until a berth is available. This could result in more hours underway and perhaps less fuel consumption depending on how long the wait for the berth was, but it would represent a strange point of comparison or regulatory metric.

If “distance sailed” is also to be reported, one must ask to what purpose “hours in service” would serve. It is not clear why both data elements would be needed.



- ***Cargo data (e.g. DWT, capacity utilization, average cargo volumes (metres, cubic meters, etc.)***

As noted in the Preface to these comments, it is difficult to address the issue of cargo data in the absence of clarity about what kind of additional efficiency standards are intended and whether cargo is critical to the objective of the regulations envisioned.

For example, are the variations in cargo actually carried by a vessel over a defined period of time something that would have regulatory consequences, or would a reasonable estimation of cargo carried be sufficient, such as a fixed percentage of deadweight tonnage for container ships, as has been used in the EEDI calculation for new-builds?

The data recordkeeping, reporting and validation requirements obviously would become more complex for vessels and for governments if one needs to track actual cargo carried. We note that the U.S. paper (MEPC 65/4/19) envisions the possible development of vessel operational efficiency standards but does not include reporting cargo carried. We further note that the legislative proposal made by the European Commission to the European Parliament and Council does envision detailed cargo data reporting, but it is not clear that this recommendation will be agreed to by the Parliament.

In short, an informed discussion of cargo data would benefit from clarity about what specific use would be made of cargo information.

If a decision is made that cargo data should be reported, the cargo measurement should be one that is commercially common to the affected sector of the fleet. For example, the container trades would presumably report cargo in TEU carried, or TEU of capacity, or a fixed percentage of a vessel's total TEU capacity, or a fixed percentage of the vessel's dead weight (i.e., units of measure that are already monitored sector wide on a commercial basis, or already reported to government authorities).

- ***Distance sailed***

The first question arising with "distance sailed" is whether one uses actual distances sailed or standard distances between ports. Standard distances provide for approximation of distances sailed in a given routing, while actual distance may vary in the trans-oceanic trades for a wide variety of reasons, such as weather routing, and would require monitoring and reporting many thousands of separate voyages. What level of detail is appropriate for reporting would depend upon the regulatory purpose of the system.

- ***How often should data be: 1) monitored, 2) reported (monthly, quarterly, yearly, multi-annually)?***

If the objective of the data gathering exercise is to establish broad aggregated data sets appropriate for evaluating global trends, data reporting every two years should be sufficient. If the data collection is to serve more precise objectives, data could be reported each year. In no case, should data be reported more frequently than once per year, because it is difficult to envision how data reporting on a shorter interval would serve an important policy purpose.

- ***Validation/Verification process: What degree of validation/verification would you consider sufficient, if any? Accuracy of the reported data vs. administrative burden?***

It is of course logical that, if data is important enough to require that it be reported and used in a regulatory context, it should be reasonably accurate. However, one cannot separate the issue of data validation/verification from the issue of what specific data is being considered.

For example, if “cargo data” is to be required, data validation/verification should be relatively simple if a metric such as percentage of deadweight tonnage is used, but it would become much more complicated if, for example, actual containerized cargo carried is to be required, because actual cargo carried will vary by each voyage and, in container trades, will vary by each segment or “leg” of a single voyage.

For example, for “fuel consumed”, if bunker delivery notes are used, then validation/verification should not be complicated. If fuel use monitoring technology were required for such reporting, then validation and verification would be more complicated.

In short, if the desired data to be reported requires the compilation of an extensive set of discrete data entries, verification can become complex and could lead to higher verification costs with limited additional value.

- ***What reported data could be made public (e.g., through a global database under the auspices of the IMO)? What data should be kept confidential? Why?***

This question should be preceded by clarity about what public disclosure would be intended to accomplish. For example, an aggregated summary of the industry’s global fuel consumption and emissions generated could be information that the IMO may reasonably decide that it wants to publish to inform interested parties working on global carbon emission management. In contrast, some have advocated that there should be a public data base to “name and shame” specific vessels based on their relative energy efficiency and performance.

Any responsible maritime carrier that is building, purchasing or chartering a ship has reason now and in the future to ascertain that vessel’s energy efficiency, because that is such a key factor to its cost of operation. If the IMO is to consider publicly reporting the individual performance of individual ships, we recommend that there be further

discussion of the specific objectives that the IMO would have with respect to such an effort.

- *Should there be additional responsibilities for Flag States and Port States in a data collection and reporting system in addition to those laid down in MARPOL Annex VI? If so, how and why?*

No.

### **3.2 Calculating the efficiency of maritime transport**

*Data collection on fuel consumption and energy efficiency could inform discussions about the establishment of efficiency or fuel consumption standards for international shipping, and may provide the data to determine the baselines from which those standards could be set.*

- *Which ship types and sizes should be covered by such standards?*
- *How do you measure energy efficiency in your SEEMP and how should we measure it at IMO level (initial ideas)?*
- *What is the time period over which a ship's efficiency should be measured?*

Fuel cost is the largest single operating cost for much of the world's fleet. The industry and the IMO have been focusing on improved ship efficiency, and the IMO has made notable progress in this regard with adoption of mandatory EEDI standards for new-builds in most vessel classes. Development of legally-binding operational efficiency standards applicable to the fleet, however, raises a number of policy questions that need to be clearly acknowledged and discussed prior to discussing how one might attempt to structure such standards. Failure to have such a discussion invites an assumption that the development of operational efficiency standards is an appropriate and desirable policy outcome.

While maritime transportation has long been the most carbon efficient mode of cargo transportation in the world, many stakeholders, including WSC, have noted the potential for further efficiency improvement in the fleet. From a public policy standpoint, we need to recognize that dramatic efficiency improvements in the world fleet are already happening as a result of the EEDI rules as well as broader economic and commercial factors. Dramatic improvements are already happening, and the conditions that incentivize even further energy efficiency gains are in place for the foreseeable future. Market conditions and fuel costs have already made reduction of operating costs a critical business parameter for most marine carriers. To reduce operating costs, operators are focusing their cost-reduction efforts first and foremost on the reduction of fuel consumption and improved efficiency on a per-unit basis. This is very much in evidence in the world container ship fleet as carriers have taken delivery and have on the order book, new eco-tonnage with a capacity of approximately 3,430,235 TEU.

These new builds (all post-EEDI) constitute 21% of world capacity at the end of 2012.<sup>3</sup> 54% of the new capacity will be added via ships of 10,000 or more TEU that will improve per unit transport efficiency dramatically. New ultra-large container vessels can reduce fuel consumption 25% to 35% to move the same volume of cargo.<sup>4</sup> The fact that these orders are occurring in an environment with significant over-capacity in the fleet is further evidence that the need for even greater efficiency is now an established commercial imperative.

One of the more significant market barriers in the sector that retarded efficiency improvements in recent decades was the absence of energy-efficiency design standards for newly built ships. That has been largely corrected with the adoption of the EEDI standards. Moreover, the substantial increase in fuel costs associated with the 2015 ECA fuel standards and the 2020/2025 global fuel standard will constitute huge financial incentives that require further continued improvement in fleet efficiency. In fact, the 2020/2025 standard provides a price signal in the market that dwarfs any price signal ever proposed via emissions trading or any other MBM.

Some may argue that operational standards are necessary to ensure that current trends are sustained, but let's examine that question in light of what is already happening in the sector and in the context of broader transportation and environmental policy. There are dramatic improvements in efficiency occurring presently through the introduction of new, more efficient tonnage, wide-spread slow steaming across the industry, and retrofits in the existing fleet. Considering these developments, all of which have changed dramatically in the last five years, some fundamental questions should be discussed.

- A. Do we believe we can construct a regulatory regime that drives improvements in efficiency that surpass or somehow improve on the trends underway? What is the specific objective?
- B. What is the requirement or objective with respect to those vessels that are already highly efficient in both design and operation?
- C. Is the objective to create a de-facto speed limit by locking in those speeds that constitute the norm during the forthcoming monitoring period? If yes, why would this be an appropriate policy objective when policy makers have not deemed such rules to be appropriate for road, rail, or aviation?
- D. Finally, is it sound policy to establish the precedent of an operational efficiency standard on the one transportation sector that is already the most efficient mode of moving goods and is in the process of becoming much more efficient?

---

<sup>3</sup> *Containerisation International*, October 2013

<sup>4</sup> Drewry Shipping / Supply Chain Digest, 12 September 2013; *Containerisation International*, September 2013

### 3.3 Developing standards

- *Current ideas for future efficiency measures are based on "baselines" or a reference value, i.e. the starting point of future efficiency improvements. Please indicate what type of baselines/reference values do you see as most relevant and appropriate for your sector and why (e.g. ship-specific baseline, ship type and size-specific baselines, a combination). Why this particular choice? Have you identified specific challenges and how these could be addressed?*

Please note the comments in response to question 3.2 above.

It is important for the Informal International Group to recognize that vessels' energy efficiency and fuel cost are already under substantial scrutiny by the industry. The industry is not waiting on the IMO to establish vessel operating energy efficiency criteria in order to consider how to lower its fuel costs. The market is already rewarding ships that are more energy efficient and is penalizing those that are less energy efficient. And those market forces are having these effects prior to the implementation of the requirement to use 0.1% sulphur fuel in ECAs in 2015 and, even more importantly, prior to implementation of the Annex VI requirement to use 0.5% sulphur fuel in 2020 or 2025. These low sulphur fuel requirements will dramatically increase the cost of marine fuel and will dramatically increase already substantial market pressures to increase vessel fuel efficiency.

The development of mandatory operational efficiency standards for the global fleet would be very challenging – much more challenging and complicated than mandatory vessel energy efficiency design standards. For example, one of the reasons that such an undertaking would be difficult is the fact that vessels routinely move from one trade lane to another. Cargo characteristics, average capacity utilization, import and export trade balances, and weather can all vary significantly in different trade lanes. Moreover, year to year comparisons would be difficult and arguably unmanageable. For instance, if we examined annual containerized cargo figures between 2009 and 2010,<sup>5</sup> it would be very difficult to ascertain what differences in fleet efficiency are the result of changes in the efficient operation of a given class of vessels versus those changes driven by macro-economic shifts in a given trade-lane or sector specific trends.

A better informed discussion could arise from a clearer explanation of why mandatory energy efficiency design standards and the costs that will be incurred because of future mandatory fuel standards fail to meet vessel efficiency enhancement objectives. In short, what are we hoping to accomplish?

##

---

<sup>5</sup> 2009 represented a tremendous downturn for the industry as a result of the world's financial crisis, followed by a strong recovery in 2010 that has not been sustained in the ensuing years.