

International Chamber of Shipping

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INTERNATIONAL TRANSPORT FORUM

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Energy and Transport: The Challenge of Climate Change

The **International Chamber of Shipping (ICS)** is the principal international trade association for the international shipping industry, representing all sectors and trades (including tankers, bulk carriers, containerships and passenger ships) with those intergovernmental regulatory bodies that impact on shipping, especially the United Nations' **International Maritime Organization (IMO)**.

The membership of ICS comprises 37 national shipowners' associations, representing about 75% of the world merchant fleet.

ICS is very pleased to be able to participate in the Stakeholder Meeting on 24 January and would like to highlight the following points.

Shipping is the life blood of world trade. Without international shipping, it would simply not be possible to conduct intercontinental trade, the bulk transport of raw materials or the import/export of affordable food and manufactured goods – it is said that half the world would starve and the other half would freeze!

In terms of Green House Gas (GHG) emissions per tonne of cargo transported one kilometre, shipping is recognised as the most carbon efficient form of commercial transport. However, the enormous scale of the global shipping industry, which is responsible for the transportation (by volume) of 90% of world trade, means that it is nevertheless a significant contributor to the world's total GHG emissions. Although there is a lack of definitive data, shipping is understood to contribute about 2% of global CO₂ emissions. However, regardless of the actual figure, the shipping industry fully acknowledges that it must play a major part in helping to reduce the world's total emissions of CO₂.

In addition to addressing the specific points listed in the documentation, there are three key points which the shipping industry would like to bring to the attention of Ministers at the Conference in May.

- The existing and impressive environmental performance of shipping, and current intensive efforts by the industry, and its regulators, to bring about further improvements in fuel efficiency and carbon emissions per tonne/kilometre of cargo transported.
- The difficult challenge of delivering absolute emission reductions by the global shipping industry as a whole if shipping continues to expand in order to respond to the demands for its services, without having a seriously adverse effect on the smooth flow of world trade and continuing improvements to global standards of living.
- The need for recognition that the International Maritime Organization (IMO), with the full support of the global shipping industry, is the best forum for developing solutions to reduce shipping's emissions in a manner that will have a significant and meaningful impact on what is a global rather than a regional problem.

Turning to the issues on which specific views are sought by the documentation for the consultation:

Securing and improving access to energy for transport

Is access to affordable energy an equal concern across all transport modes?

Fuel costs represent an increasingly significant proportion of ships' operational costs, having increased by about 300% in the last 10 years. Apart from general cost pressures on oil, further significant price increases for marine bunker fuels are expected, since most ships will soon be required to burn fuels with a far lower sulphur content than hitherto by new International Maritime Organization regulations which are expected to be enforced worldwide. While recent cost increases have coincided with the most buoyant shipping markets in living memory, shipping markets are notoriously cyclical, and when freight rates return to more historically typical levels, bunker fuel costs can be expected to have a significant impact on the commercial viability of many shipping companies, particularly in trades where fuel costs represent almost half of their total operating costs, sometimes amounting to millions of dollars *per ship* per year. However, fuel costs are already having an impact on the competitiveness of certain maritime trades, for example short sea and coastal shipping which are often in direct competition with land transport modes, and pronouncements by several shipping companies about plans to reduce ship speeds are evidence that

the more rapid increases in fuel prices over recent months are already having an immediate effect.

What alternative fuels are you currently investigating?

For the foreseeable future, fossil fuels will probably continue to be the predominant source of fuel for the majority of the shipping industry.

The use of LNG as an alternative to the heavy fuel oils and distillates used by most ships is probably impossible for the majority of the ocean going fleet, because of the very large fuel storage space required, although it may prove a limited option (with the possible benefit of some minor reductions in CO₂ emissions) for a very small number of ships.

Biofuels might conceivably provide a possible alternative (bio-diesel works well in ships' engines) although there is, of course, considerable debate in the wider community about the net environmental costs (and social effects) of the wider use of such fuels. Their 100% use by shipping is currently expected to be uneconomic, with questions about availability in the large quantities that would be required given the high demand anticipated from land transport. However, the use of blends of bio-diesel with conventional fuel could deliver some benefits.

While renewal energy sources such as wind and solar power may have their place in helping to meet some ancillary requirements, such as lighting on board ships, they are not actually practical for providing sufficient power to operate ships' main engines (the huge physical size of ships should not be underestimated). The industry is nevertheless actively investigating the use of such alternative sources, but they are not, on their own, expected to deliver hugely significant CO₂ reductions for shipping.

Nothing has yet been ruled out: for example, fuel cells may be a possibility for new ships in the very long term, although they are currently nowhere near sufficiently efficient. Even nuclear ships are theoretically possible. However, the current assumption remains that ships will continue to burn fossil fuels for the foreseeable future and that most significant means of reducing CO₂ emissions will be achieved by further improvements in fuel efficiency.

Energy efficient technology for transport

The various parts of the shipping industry - shipowners, shipbuilders and classification societies (which are the repositories of much of the industry's technical expertise) - are already involved in intensive discussions about various means of reducing CO₂ emissions – both for new and existing ships - which are primarily linked to reducing fuel consumption.

***What are the most promising technologies your sector is investing in?
What is the lead time to market and expected fuel efficiency impact in the long and short term?***

Although the shipping industry is already very energy efficient, additional improvements to hull, engine and propeller design are expected to produce some further reductions in fuel consumption. There may also be possibilities for the better utilization of waste heat.

While it is difficult to be precise, and work in these complex technical areas is ongoing, some of these improvements may possibly materialise on board new ships within the short to medium term (5-10 years). However, it may prove very difficult to apply these new technologies (e.g. improved hull and engine designs) to existing ships, which have a design life of over 25 years and can have an individual capital cost of hundreds of millions dollars *each*.

The increasing size of many ships is also expected to produce further fuel efficiencies, and there may be operational measures (e.g. moving at slower speeds) that will reduce emissions (although this may necessitate the need for more ships to transport the same quantity of cargo, and detailed studies of the net environmental benefits are still needed). However, slower speeds would also require acceptance by customers and may well have implications for 'just in time' delivery and the size of inventories of raw materials, components and products that it would become necessary for customers to maintain. Larger ships also have implications for port capacity which would need to increase to accommodate them, and be supported by expanded networks of 'feeder services' using smaller ships where the accommodation of larger ships was not practical.

While it is very difficult to make predications about the improved fuel efficiencies that might be achieved, *and which will vary significantly between ship types and trades*, it has been suggested that by 2020 a combination of regulatory, design and operational measures *might* possibly deliver a 15% reduction in the fuel consumed by shipping worldwide per tonne-mile of cargo transported. It is emphasised, however, that work on these complex issues is still ongoing, and this figure cannot in any way be regarded as a firm commitment by the shipping industry.

Integrated transport policy measures

The shipping industry is relatively confident about being able to make some further significant reductions in the carbon emissions of ships, which in combination with technical advances which cannot yet be fully anticipated could perhaps prove even more significant. Moreover, the escalating costs of marine bunker fuel (which, as mentioned above, are already expected to increase further due to imminent requirements for lower sulphur fuels) means that further

improvements in efficiency are a matter of enlightened self interest for shipowners.

However, shipping is the servant of world trade and the demand for shipping is directly related to the growth of the world economy. If, as predicted, the world's population and economy continues to expand, the demand for shipping is expected to expand commensurately. Notwithstanding the significant emission reductions that shipping hopes to achieve, the expanding demand for shipping means that **absolute** reductions in the total emissions of shipping may be very difficult, if not impossible, to guarantee, unless existing patterns of global trade were to be **fundamentally transformed**.

This is a consideration which it is **vital** for politicians and policy makers to understand. Indeed, because shipping is already the most carbon efficient form of transport, shifting cargo to shipping (e.g. short sea shipping) from other modes of transport would actually have the effect of *reducing* the world's total CO₂ emissions, even if as a consequence the total emissions of shipping would see a slight increase.

Shipping is a global industry requiring global regulation. Under the 1997 Kyoto Protocol, the International Maritime Organization (IMO) has a mandate to produce proposals for reducing maritime GHG emissions. IMO now has a target date for producing new proposals by 2009.

No matter what might be agreed when the post Kyoto Protocol regime is established, in view of the vital need for uniform worldwide regulatory standards in shipping, the important role of IMO in addressing shipping's CO₂ emissions is something which it will be important for the ITF Ministerial Conference to acknowledge.

Where can public policy make a difference in reducing CO₂ emissions? What is an appropriate time frame for public policy measures?

Because shipping for the most part is involved in international trade, it is vital that any regulatory solutions are developed globally and, as mentioned above, IMO has a target of making firm proposals to address GHG emissions by shipping by 2009, although the time scale for their implementation remains a matter for discussion. The shipping industry fully supports the development and adoption of workable global solutions by IMO as soon as possible, and is actively contributing to these discussions.

What kinds of public-private partnerships should be encouraged in the energy and transport sectors?

In addition to participation of industry in the discussions at IMO, co-operation between governments and industry on research regarding possible technical and

regulatory solutions should clearly be encouraged, particularly as the financial resources that may be required to support such research are probably beyond the means of most individual companies.

How should policy try to influence user behaviour? Which pricing scenarios would be acceptable to your sector?

This question is really too complex to answer in a paper such as this, but is one of the major issues which will need to be addressed by the current work at IMO. The majority of the shipping industry is open minded about the *possibility* of being part of some form of Emissions Trading System, although there are many serious questions to be resolved depending on the details of any schemes that may be proposed. However, if such schemes are to be contemplated for shipping, they are far more likely to be effective if developed globally under the auspices of IMO, both in terms of helping to reduce CO₂ from ships and avoiding any serious distortions to competition.

We hope these remarks are helpful.

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