Hong Kong Shipowners Association

**The Reduction of Greenhouse Gas Emissions by the Maritime Sector**

This paper will deal primarily with the issue of an Economic or Market Based Instrument (MBI) for the maritime sector. There will be references, however, to the mandatory application of the Energy Efficiency Design Index, particularly the thoughts expressed in the papers submitted by the United States (MEPC 58/4/48) and Japan (MEPC 58/4/34).

**We must act, sooner rather than later**

It is essential that we accept, whether we believe the science or the extent of political will, that our sector is under incredible pressure to 'de-carbonise'. The G8 has just accepted a global target of 50% reduction of the emissions of anthropogenic greenhouse gases from 1990 levels by 2050, including an 80% reduction by developed countries. Many scientists say that this is not sufficient, referring to the 4th Assessment Report of the IPCC which calls for an 80% reduction in global emissions from 1990 levels by 2050. And others are now adding to the pressure by stating that the reduction must be cumulative, in other words, the sooner we take action the smaller overall reductions will have to be made. It is obvious that we cannot delay, and must move towards industry-wide consensus, as it is industry that will lead (much to the IMO's relief) the solution to this problem.

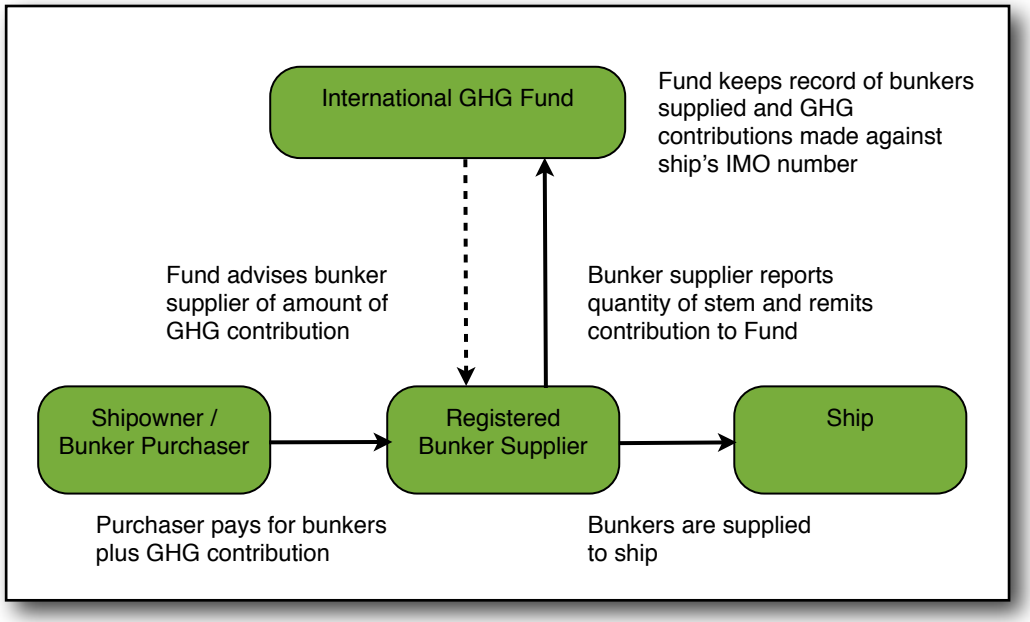
**The Compensation Fund**

This Association continues to support the Compensation Fund, as described by Denmark in MEPC 58/4/5, as a base for a compromise MBI for the maritime sector. Without wishing to repeat that paper, the key features of the scheme are:

- All ships of over 400 gt in international trade are subject to GHG contributions established at a given cost per ton of fuel bunkered.
- Ships must buy fuel at a registered bunker supplier[1]. The price paid for the fuel includes the GHG contribution in respect of the quality and quantity of fuel supplied.
- Documentation in the form of a Bunker Delivery Note (BDN) confirms that fuel has been purchased from a registered bunker supplier and that the GHG contributions have been paid.
- The BDN must be kept on board ship as prima facie evidence that the bunkers have been purchased from a registered supplier and the contributions have been paid.
- The registered bunker supplier reports the amount of bunkers supplied to an International GHG Fund, and remits the GHG contributions directly to the Fund.
- The revenue from the Fund is allocated for specific purposes consistent with the primary objectives of the UNFCCC, and directly allocated to finance:
    - Mitigation and adaptation projects in developing countries, in particular SIDS,
    - R&D projects to create more efficient ship designs and propulsion systems,
    - Technical cooperation within the existing IMO framework.
    - The administrative expenses of operating the Fund.
- The distribution of the Fund is made transparently and directly, in order to maximise benefit and reduce the potential for corruption.
- Ships that are not able to bunker at a registered bunker supplier for good reason may report their bunker supply and pay the GHG contribution directly to the Fund.

[1] Registration of bunker suppliers is a concept already in effect through MARPOL Annex VI

- Ships and bunker suppliers that are found to be deliberately in contravention of the Convention are subject to suitable penalties.
- The Fund is set up in a similar way to the IOPC Funds; run by the State Parties and with a Director and secretariat.




The reasons why the Association supports the Compensation Fund as the base for a compromise are that it meets the 9 IMO principles as well as the additional industry principles. In particular it is:

- Practical
- Fraud-free
- Administratively simple, resulting in low costs
- Global
- Not producing or encouraging competitive distortion
- Sensible to the reality of the shipping industry
- GHG Contribution paid by entity purchasing the bunkers

So, in our opinion, the overall concept of the Fund meets our requirement for it to be 'shipowner friendly'.

There are, however, some details of the Fund that are yet to be finalised, perhaps the most important being the level of GHG contribution.

**Reduction Targets**

The presentations made at the recent ICS Conference brought up some very relevant issues. Mark Major, representing the European Commission, informed the audience that the shipping industry must agree 'reduction targets'. It was not fair to other industries who had committed to reduction targets that the shipping industry had apparently not addressed this issue. During the discussion that followed, the very simple question was asked "What is meant by reduction targets?". Unfortunately, the answers given seemed to lead to greater confusion.

Mr. Major was asked whether a reduction target could be that the industry would commit to being 100% carbon neutral, and then satisfy that commitment by purchasing sufficient off-sets or credits to cover its entire $CO_2$ emissions. The example is 'Carbon Neutral' HSBC.

| | $CO_2$ tonnes | |
|---|---|---|
| | **2008** | **2007** |
| Emissions from energy use in buildings | 788,000 | 774,000 |
| Less US RECs (Renewable Energy Certificates) | (167,000) | (56,000) |
| Net emissions | 621,000 | 718,000 |
| Emissions from travel | 166,000 | 179,000 |
| Net total emissions | 787,000 | 897,000 |
| Carbon offsets purchased | 787,000 | 897,000 |

(Information taken from HSBC website)

Mr. Major replied that this was not acceptable, that the majority element of any reduction target must be actual reductions. It was gently pointed out to him that in setting such targets, we must have a baseline to work from. The only reasonably accurate figure we have for the industry's $CO_2$ emissions was that given by the IMO's 2nd GHG Study, which for 2007 estimates $CO_2$ emissions from international shipping at 870 million tonnes ±20%. Without accurate baseline figures, and not being able to strive to be carbon neutral (which does not need an historical baseline), is it possible for us to set a reduction target?

What seems to be required of us is an actual reduction of $CO_2$ emissions, combined with a smaller element of off-setting, if this is necessary. How do we achieve this?

**Incentives**

There are basically three types of incentive that we can possibly work with: Voluntary, Commercial and Regulatory. We can probably rule out the voluntary incentives for the moment, because in this market very few shipowners are feeling altruistic.

There are generally considered to be two kinds of commercial incentive for the reduction of GHG emissions. There is a commercial incentive that might be a requirement of the trade. There are some large shippers who are demanding that container line operators measure and report their carbon emissions, IKEA's IWAY is a good example of this. These major shippers have the public presence that demands knowledge of the carbon content of the goods they supply. A similar example is that of the scheme now being developed by the International Association of Ports and Harbours, whereby ships that measure and report their carbon emissions will be entitled to preferential treatment and lower harbour dues. But, in the absence of a true method of measuring a reduction in shipboard carbon emissions, the most that these schemes are able to achieve is 'measurement and reporting' rather than proof of actual reductions made.

The second commercial incentive is the need to be competitive. A reduction in $CO_2$ emissions is also an increase in energy efficiency. International shipping is an extremely competitive marketplace, and if a shipowner is able to fit equipment that will make him more efficient and therefore more competitive than others, he is likely to consider it.

It has been shown that during the recent spike in oil prices, the price of bunkers does not by itself, in general, act as an economic incentive to increase efficiency. This is because all owners and operators are paying the same price for their bunkers, and therefore there is no competitive disadvantage. But the higher price of bunkers makes the development of alternative technology more attractive. The cost of the equipment can be paid off in a shorter time when bunker prices are high, and it is the cheaper relative cost of the equipment that spurs manufacturers towards the necessary research and development. It is then the availability of that equipment that attracts the shipowner to fit it, thereby becoming more competitive by being more energy efficient than others.

A disadvantage, however, is the modal shift that might be encouraged by higher costs in the shipping industry. It is clear from some recent developments that Governments, who consider that more freight should be put on ships rather than trucks in order to reduce $CO_2$ emissions, are ready to act to ensure that modal shift takes place towards ships, rather than towards other transport modes.

There is, therefore, an economic incentive for greater energy efficiency that results from higher bunker prices, although not in the way that most would seem to assume. The development of technology is rapidly increasing, and we are likely to see major developments well before the current delivery of new ships are into their third special survey. The more the pace of development of technology can be encouraged, the sooner we will be able to fit cost effective engineering to increase the efficiency of new and existing ships.

There are currently two ideas on the table to introduce regulatory incentive. The United States (MEPC 58/4/48) proposes applying the EEDI to all ships, new and existing, and then setting reduction paths over time for the level of that index. If a ship cannot make the mandated EEDI, then it would be able to purchase 'credits' from ships that are able to make better than the mandated EEDI. One possible problem is that the EEDI is calculated on design parameters, and does not determine how the ship is operated. Actual efficiency could be very different to that presumed by the EEDI, and the proposal does not compensate for such differences.

The second proposal is from Japan (MEPC 58/4/34) which proposes extending the Compensation Fund to reward owners who fit and operate additional energy saving equipment. Our initial objection to this would be that the operation of the equipment, and the level of any subsequent energy savings, would have to be monitored and audited to prove the right to the reward. We are naturally against any further inspection, monitoring and auditing of our ships, as they are already sufficiently inspected.

In our opinion, the mandatory application of the EEDI to new ships, and its reduction over time, will spur innovation in the shipyards and design houses, but due to the long life of ships and the fleet renewal now taking place, it is unlikely to make much of a dent in overall $CO_2$ emissions from international shipping for some considerable time to come.

**The level of GHG Contribution**

The Denmark paper proposes that the level of GHG Contribution be set every four years by a comparison between the calculated GHG offsetting impact and the actual GHG emissions from shipping against an agreed GHG target line. We consider that it might be difficult to measure the offsetting achieved, especially when the intention is that the fund be used for adaptation and mitigation in developing countries rather than pure offsetting projects.

But the footnote in the paper suggests that this is only one approach to the issue, and there are likely to be others. It is our opinion that the GHG contribution could be more effectively set by reference to the global carbon reduction target.

Although the G8 has not, as yet, determined how the developed countries will cut their share of anthropogenic GHG emissions by 80% by 2050, it is likely that some form of global carbon market will be developed, resulting in a global price for carbon. It is our proposal that the GHG contribution be set with reference to the global carbon price, as follows.

Every six months, the average Global Carbon Price for the previous six months is calculated, and put into the following formula.

GHG Contribution = (Global Carbon Price) x (carbon content) x (a predetermined factor)

The GHG Contribution will be charged per tonne of bunkers delivered
The Global Carbon Price will be set by the Global Carbon Market, US$ per tonne $CO_2e$
The Carbon Content[2] is the actual carbon content of the fuel being delivered (MEPC.1/Circ. 684)
The predetermined factor will be the 'reduction target', increasing over time to 1.00.

(If there is delay in setting up the Global Carbon Market, then the European carbon price, or other carbon price freely determined by the market, can be used).

As the quantity of global carbon emissions are reduced, the Global Carbon Price will increase; some estimate that it will increase from a notional level today of US$30 to US$200 (±US$100). The GHG Contribution, therefore, will not only increase over time due to the increasing predetermined factor, but also due to the increasing shortage of global carbon allowances.

The GHG Contribution so formulated, its transparent calculation and its predictable increasing nature, will act as a robust economic incentive for the development of alternative low carbon technology. Shipowners need a predictable investment climate, which would be provided by this formula. It is also important to note that the GHG Contribution, calculated in this way, has the direct reference to the global cap on emissions, and incorporates a pre-determined reduction factor that does not require an initial baseline to be set.

A third alternative is to set the level of GHG Contribution with reference to the price of credits available through the Clean Development Mechanism (CDM). There are several concerns, however. The first is that the CDM market is already accessed by many industries in developed countries. An article in the Guardian newspaper[3] recently pointed out that if developed countries actually cut their net emissions by the amount required to reach the 2° target, and were permitted to purchase 50% of those reductions from the CDM market (as proposed by the UK Government), then developing countries would be asked to reduce their emissions by 125%. An impossible figure.

The second concern is that the CDM market could expand to meet the demand required of it, the result being that the price of CDMs stays virtually constant. There are reported instances of factories being built in some developing countries for the sole purpose of marketing CDMs.

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[2] The 'carbon content' factor can simply be adjusted, if necessary, to take account of potential technology that removes carbon from the exhaust gas (Ecospec?).

[3] "The rich can relax. We just need the poor world to cut its emissions. By 125%", George Monbiot. The Guardian, 13th July 2009.

It has to be the purpose of the GHG Contribution to encourage energy efficiency, and ultimately to reach the goal of decarbonisation.

**Conclusion**

It is a fact that we must respond urgently and constructively to the demand to reduce our carbon emissions. It is clear that the most effective incentive is economic, perhaps introduced through regulation, and that the more predictable and robust the incentive, the more effectively we will be able to respond. The inclusion of a 'cap' and a 'reduction target' in our scheme would likely satisfy political need. And the size of the funds that would be raised could potentially satisfy the CBDR requirements of developing nations.

In short. the advantages of the Compensation Fund are:
- Global, applies to all ships over 400gt in international trade.
- Practical and easy to comply with.
- Paid by the entity purchasing the bunkers.
- Passes the additional cost up the logistics chain as quickly as possible.
- Administratively simple, keeping costs down and ensuring that the maximum benefit goes to the Fund.
- Keeps the value in the 'system', preventing value leakage.
- 'No less favourable treatment' for non-compliant ships is built in.
- Efficient ships are rewarded, as are also ships that burn low carbon fuels or adopt low carbon technology.
- Encourages Research and Development into alternative technologies.
- Incorporates a declining cap on GHG emissions.
- Incorporates a reduction target.
- Incorporates the global price of GHG emissions.
- Channels the funds raised directly into lesser-cost mitigation and adaptation projects.
- Could be up and working almost immediately.

28th September 2009