

International Shipping; the first industry with a global climate standard

International shipping has become the first industry to agree a global carbon dioxide reduction strategy. This month's vote at the International Maritime Organisation (IMO) approved the establishment of an Energy Efficiency Design Index (EEDI) requiring new ships to be built to a minimum level of energy efficiency that will be incrementally strengthened. T&E welcomed the decision, but says it cannot be seen as a solution on its own especially because the implementation waiver agreed for developing countries means the EEDI will take many years to be truly effective.

Four year's work on the text of the EEDI concluded last September amid growing dissension about its global applicability. China, Saudi Arabia and others argued that the EEDI rules should only apply to developed countries while some, led by Brazil, called for delayed implementation. Last November, nine states led by Norway defied a procedural deadlock and asked for the proposed EEDI to be circulated among IMO members for decision as a mandatory global measure. After intense negotiations, the measure was adopted at the IMO's Marine Environment Protection Committee in London last week but Saudi Arabia immediately challenged the decision forcing a vote which was convincingly carried 49 votes in favour to 5 against (China, Chile, Brazil, Kuwait, Saudi Arabia) with 2 abstentions. India, South Africa, Cuba and others either opposed the measure or wished the decision to be deferred until the next session. However, they were ineligible to vote as they are not Parties to Annex VI of the IMO's marine pollution convention, MARPOL, to which the EEDI becomes an amendment to Annex VI. Austria, Hungary, Czech Republic, Slovakia and Monaco were also ineligible for the same reason.

Adoption of the EEDI means that ships built after 2013 will have to meet a minimum standard of energy efficiency, with different standards applying to different classes of ship. These standards will be strengthened over time, with the aim of a 10% improvement for ships built in 2015-19, 15% or 20% for 2020-24 depending on ship type, and 30% for ships delivered after 2024. But as the average life of a ship is around 30 years, it will take a decade or two before the effects of the EEDI start to become widespread.

IMO Negotiations

During the negotiations in London, developing countries secured a commitment to a process of technical assistance and technology transfer as well as a waiver period to enable them to be in a better position to implement the EEDI. This provision resembles the IMO's decision on phasing out single hulled ships 10 years ago in reaction to an EU ban and effectively means that new ships flagged in developing countries need only be EEDI compliant 6.5 years after the expected entry-into-force on 01 January 2013 ie mid 2019. Because this delay provision is linked to countries and not individual ships, the practical effect of the waiver is that new ships ordered by western owners and built in either developed or developing countries could also take advantage of the waiver by flagging in a developing state. This loophole, if exploited, makes a nonsense of linking the concessions on providing

technical assistance to the granting of a waiver to developing countries as ships built in developed countries can technically also secure a waiver. Moreover, many of the world's most technically advanced ships are already being built in developing countries. The length of the waiver also means there is a risk that the whole Phase I standard (-10% for ships built 2015-19) might effectively be bypassed requiring immediate improvements of 15-20% in 2020. In reality, the whole debate on technical assistance was as much about politics as the need for technology transfer. China, Saudi Arabia and others wanted to secure recognition in the IMO of the UNFCCC principle of common but differentiated responsibilities which, in their view, means developing countries need do nothing .

The outcome

The final outcome was less divisive than anticipated due largely to the agreement on technical assistance and the waiver. Negotiations focussed on a compromise text put forward by Singapore which towards the end drew critical support from key small island states such as the Bahamas, Cook Is, Samoa, Tuvalu, Vanuatu and Marshall Is, as well as Russia, Ukraine, Serbia, Singapore, Liberia, Panama and, significantly Korea, a major shipbuilder. This left China, Brazil, India and Saudi Arabia in a noisy and politically conspicuous minority.

Denial of Port Entry

EU countries and the USA/Australia/Japan wanted to retain the provision in Singapore's draft resolution reiterating the right under international law for port states to deny entry to non EEDI- compliant ships thus putting pressure on shipbuilders to order EEDI-compliant ships despite the fact of the waiver. This right of denial of port entry had been a central element in the resolution of the double-hulled issue at the IMO a decade earlier. The EU had unilaterally banned single-hulled ships from entering EU ports following the loss of the single-hulled oil tanker Erika off the Brittany coast in 1999. The IMO's subsequent proposal for a phase-out of these ships to give developing countries time to adjust was supported by the EU but subject to an important reiteration of the proviso in the Law of the Sea preserving the right of EU states to deny entry of ships (in this case single-hulled tankers) to EU ports irrespective of the IMO regulation. In the case of the EEDI, developed countries were offering support for an implementation waiver while also reserving their rights under international law re denial of entry. The issue was debated back and forth with developing countries finally securing a commitment to delete the denial of port entry paragraph without any corresponding concessions on the length of the waiver. Although this concession does not alter port state rights under international law, developed states seemed to have been outmanoeuvred. If EU ports were to deny entry to non-EEDI ships this would have a major bearing on owners' decisions when agreeing new ship designs. But intentions remain unclear. Failure to shorten the waiver period is a major shortcoming and weakens the effectiveness of the IMO's decision.

Three questions therefore remain uppermost:

- will EU states deny port entry to non-EEDI compliant new ships?
- will western shipowners exploit the loophole and build non-EEDI compliant ships in their home yards while flagging them in a developing state?
- or will enlightened shipowners, recognising the benefits of the EEDI, order compliant ships irrespective of where they are built and flagged?

IMO's Energy Efficiency Design Index (EEDI) – Questions and Answers

What does the EEDI do?

The EEDI will serve as a mandatory fuel-efficiency tool at the design stage of new ships requiring all new ships built globally after a certain date to meet a minimum level of fuel efficiency related to a baseline.

By reducing the reference (baseline) over time and thus ensuring that new more fuel efficient ships replace those taken out of service, it is anticipated that by 2030, application of the EEDI will result in a reduction of global GHG ship emissions of between 10-20% against business-as-usual emissions projections.

The IMO has also agreed the Ship Energy Efficiency Management Plan (SEEMP) for new and existing ships which sets out best practices for the fuel efficient operation of ships as well as guidelines for the voluntary use of the Ship Energy Efficiency Operational Indicator (EEOI) for new and existing ships which enables operators to measure the fuel efficiency in grams of CO₂ per tonne mile of a ship.

How significant are greenhouse gas emissions from international shipping?

International shipping accounts for 2.7%-3.3% of global greenhouse gas emissions. Unregulated, these emissions are expected to reach 6% of global emissions by 2020 and to double or triple by 2050.

What needs to be done?

A range of operational, technical and regulatory measures is urgently needed to reverse this trend including efficiency standards such as the EEDI as well as market-based instruments such as emissions trading. Efficiency standards work in the long term, market-based instruments could have a significant impact as soon as they are introduced.

Why is the EEDI proving controversial?

The measure has proved controversial – not so much because of the numerous technical questions and debates which have arisen during its development related to legitimate questions around objectives, measurement and effects – but because the EEDI is intended to be binding on all states.

Such a mandatory requirement is viewed by key developing countries (led by China, Brazil, India, South Africa and Saudi Arabia) as in conflict with the principle of common but differentiated responsibility (CBDR) in the UNFCCC under which only developed countries have accepted binding Kyoto GHG reduction targets.

These states participated fully in development of the EEDI but oppose the non-differentiated application of energy efficiency measures, the consideration of the EEDI other than by consensus, its inclusion in MARPOL Annex VI rather than some other instrument, and believe further work to refine the EEDI is needed before it is adopted. They also want developed countries to provide capacity building to enable developing countries to comply with any new standard. There was a divisive debate about the legal form of the proposed EEDI at an IMO meeting in September/October 2010 where opponents succeeded in preventing the draft regulatory text being circulated.

However 9 member states led by Norway, subsequently wrote to the IMO on 17 November 2010 requesting the text be circulated thus breaking the procedural deadlock and fulfilling the need for 6 month's notice to consider the measure at the July 2011 meeting of the IMO's Marine Environment Protection Committee (MEPC). China, Saudi Arabia and South Africa

branded this action as against the spirit of UN collectivism and damaging to the foundations of the IMO. India and others dismissed it as invalid.

What happened at the IMO?

The EEDI was proposed as a new regulation amending Annex VI of the IMO's marine environment pollution Treaty, MARPOL. Normally decisions under MARPOL are taken by consensus but in the absence thereof, provision exists to adopt decisions by a 2/3 majority of ratifying states representing at least 50% of world maritime tonnage. 64 states have ratified MARPOL. Once adopted under MARPOL, the EEDI would become binding on all 180 member states of IMO on 01 January 2013 unless not less than one third (currently 22) of the 64 Parties to MARPOL Annex VI objected to the decision before 01 July 2012 (the date of acceptance of the regulation).

When the IMO met to consider the draft regulation, it was not clear that the minimum 2/3 majority was achievable should the decision be put to a vote. Developing countries initiated a debate on the provision of technical assistance to enable them to meet the EEDI requirements and on a waiver of the implementation date to give them time to do so. Agreement on a text concerning technical assistance was eventually agreed but despite efforts by some developed countries to shorten the waiver period, the initial proposal put forward by Singapore was agreed; administrations (developing countries) were given discretion to waive the EEDI regulation on a ship-by-ship basis for new ships whose building contract was signed within 4 years following the regulations' entry into force or whose delivery was up to 6.5 years following entry into force.

A paragraph reiterating state rights under international law to deny port entry to ships caused considerable debate. Though such a paragraph would have no impact on these rights under international law because they are enshrined in the Law of the Sea, inclusion of such a reference in the EEDI regulation would have signalled that developed states might well refuse entry to non-compliant EEDI ships irrespective of any waiver. Deletion of the paragraph might well signal the opposite, but the intention of developed states on this point is not clear.

What do China, Saudi Arabia and Africa say?

Right up until the time of the vote, China and Brazil were proposing amendments to the draft regulation, calling for a decision to be delayed 9 months until MEPC 63 and threatening (China) not to observe the regulation should it be adopted. The large majority (49 in favour versus 5 against – China, Brazil, Chile, Saudi Arabia, Kuwait - and the two abstentions) supporting adoption of the regulation included key flag states such as Panama, the Bahamas and Marshall Islands, all the SIDS (small island developing states) present as well as Korea, a major shipbuilder, Russia, Ukraine, Liberia, Ghana, Singapore and Malaysia.

What will be the impact of the EEDI?

The EEDI is intended to deliver significant reductions in GHG emissions from shipping by requiring a minimum level of energy efficiency for new ships expressed in CO₂ emissions per unit of transport work. Estimated reductions are between 123m and 299m tonnes of CO₂ annually but this does not take account of the waiver, whose impact on new ship builds up to 2019 is not clear. Many new ships may take advantage of the waiver. Others may well be built EEDI compliant to ensure there are no doubts about access to developed country ports. The EEDI will first apply to the largest and most energy-intensive ships – by setting EEDI reference lines for tankers, gas tankers, bulk carriers, containerships, general cargo vessels, refrigerated cargo carriers and combination carriers. Other versions of the EEDI will be developed to cover remaining ship types which carry cargo (what to do about those that don't is under further debate) and until (possibly MEPC 65) the method for calculating attained EEDIs for ships with diesel electric, turbine or hybrid propulsion systems is agreed and reference lines established, such ships will be excluded.

For each individual ship, the attained EEDI (as verified by competent authorities first at the design stage then at sea trials) shall not exceed the proposed reference (baseline) line value agreed by the IMO for each ship type. If a ship falls within two ship types, the most stringent EEDI value will apply. Under the proposal agreed at MEPC 62, the EEDI reference line will be reduced by 10% for ships built between 2015 – 2019; by 15-20% (depending on ship type) for ships built between 2020 and 2024 and 30% for ships delivered after 2024. Thus as new technology is expected to become available, efficiency requirements will become more stringent. The EEDI will apply to ships above 400GT but not to those engaged solely in domestic trade (IMO's remit is international shipping) although Parties are requested to take measures such that these ships also comply.

What technologies will be needed to improve shipping efficiency?

Ship design can be modified in a number of ways to meet the EEDI. The most obvious measure will be by reducing installed engine power. In response to criticisms that reduced engine power will lead to safety concerns, the proposed regulation provides that the installed propulsion power of a new ship shall not be less than that needed to maintain the manoeuvrability of the ship under adverse conditions. Other ways of achieving the required EEDI efficiency improvements include hull, propeller and propulsion system improvements, waste heat recovery, air lubrication and the use of wind power – sails, kites and flettner rotors etc. The EEDI is expected to undergo modifications over time based on practical experience with the standard. This will be done through the IMO's EEDI Technical Code.

What is the wider significance of the EEDI?

If accepted in July 2012 (ie objections from one third of Parties to MARPOL Annex VI are not forthcoming) then the EEDI will come into force on 10 January 2013 as the first globally-binding climate change measure applying to the transport sector. The emission reductions it is expected to produce are significant but insufficient to mitigate the large increase in emissions due to the growth in shipping which typically reflects the growth in world trade. IMO progress on a global market-based measure such as emissions trading or a levy is facing stalemate due to issues surrounding CBDR. If significant progress is not achieved at this MEPC meeting, and this is unlikely particularly given the expected divisive debate over the EEDI, the pressure will grow on the EU to take regional action as it so often has threatened. If the EEDI and SEEMP is approved, then measures will need to be accelerated to have the EEDI apply to all ships.

These values have already been calculated and are available online:

www.shippingefficiency.org. EEDI values for existing ships used to develop energy efficiency labelling could assist shippers in taking commercial decisions on which ships to charter or facilitate the differentiation of port dues.

For further information:

Bill Hemmings, Transport & Environment
+32 487 582 706
bill.hemmings@transportenvironment.org