
Pollution - Entry into Force of the Energy Efficiency Design Index

Notice to all Ship owners, Masters, operators and builders

This notice should be read with revised Annex VI of MARPOL 73/78 and associated guidance as noted at point 1.4 of this MGN.

Summary

This MGN provides an overview on the introduction of technical and operational measures to reduce greenhouse gas (GHG) emissions from ships through amendments to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL) by introducing a mandatory energy efficiency regime for international shipping.

The new regulations apply to ships of 400 gross tonnage (GT) and above and will enter into force on 1 January 2013. Key elements introduced are:

- the Energy Efficiency Design Index (EEDI) for new ships;
- the Ship Energy Efficiency Management Plan (SEEMP) for new and existing ships; and
- a requirement for ships to carry an International Energy Efficiency (IEE) Certificate.

The regime does not currently apply to domestic vessels but the UK will in due course consult upon such a measure in line with Regulation 19 2.1 of Annex VI.

1. The EEDI Concept

1.1 At the 62nd session of the International Maritime Organization (IMO) Marine Environment Protection Committee (MEPC) in July 2011 a decision was taken to incorporate a chapter on Energy Efficiency within Annex VI of MARPOL.

1.2 The regime covers both newbuild and existing vessels, the EEDI is applicable to new ships while both new and existing ships are covered by the SEEMP and International Energy Efficiency Certificate (IEEC) and is intended to promote energy efficient design and operation of ships in order to reduce emissions of pollutant and climate change gases.

1.3 Estimates from the IMO have suggested that compared to business as usual growth the introduction of the EEDI for new ships will prevent 45 to 50 million tonnes of CO₂ annually

by 2020, for 2030, the reduction is modeled as being between 180 to 240 million tonnes annually as the majority of the global fleet will be EEDI compliant by that stage.

1.4 The Energy Efficiency chapter of Annex VI is a complex instrument with significant implications for vessel design and construction, IMO has developed a package of guidance associated with the measure that supports the implementation including:

- Resolution MEPC.212(63) - Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships;
- Resolution MEPC.213(63) – Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)
- Resolution MEPC.214(63) - 2012 Guidelines on Survey and Certification of the Energy Efficiency Design Index (EEDI)
- Resolution MEPC.215(63) – Guidelines for calculation of reference lines for use with the Energy Efficiency Design Index (EEDI)

All the above guidelines are available on the MCA Website at <http://www.dft.gov.uk/mca/mcga07-home/shipsandcargoes/mcga-cargosafety.htm>

1.5 Additional guidance relating to the application of the EEDI to new vessels is under development within the IMO and by industry bodies. Further UK guidance will be issued as appropriate.

2. Energy Efficiency Design Index

2.1 The EEDI regime is intended to provide a framework for newbuild vessels to gradually improve energy efficiency. It was developed in response to growing concerns about the level of pollutant and greenhouse gas emissions associated with the sector.

2.2 Under the EEDI regime a “new” ship is defined as a vessel:

- for which the building contract is placed on or after 1 January 2013; or
- in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2013; or
- the delivery of which is on or after 1 July 2015.

IMO has developed additional guidance on the application of the EEDI phases to newbuilds in accordance with contractual/keel laying dates.

2.3 The EEDI is intended as a goal based, technology neutral measure that allows industry to determine the appropriate route to compliance for a newbuild ship. The measure was developed partly in response to concerns that market failure stemming from split incentives was leading to under-investment in newbuild ships.

2.4 The EEDI standards are phased in nature and do not currently cover some vessel types at this time. The EEDI currently covers Bulk Carriers, Gas Carriers, Tankers, Container Ships, General Cargo Ships, Refrigerated Cargo Carriers and Combination Carriers. These vessel types were selected as they represent around 70% of international shipping emissions.

2.5 IMO is currently working on the inclusion of RORO vessels and Passenger Ships. Further information will be circulated as this work is completed in 2013. Other ship types are also

under consideration but priority is being given to those types with a larger share of emissions.

- 2.6 The EEDI requirements are applicable to newbuild vessels of varying size depending upon ship type and reference should be made to Regulation 21 Table 1 of the revised MARPOL Annex VI. The requirements will be phased in from 2013 to 2025 with increasingly stringent reductions required for new builds in later phases.
- 2.7 The EEDI is a complex formula but can be simplified and expressed as a measure of the CO₂ emissions of a vessel divided by the useful work done. The intention of the calculation is to encourage designers to deliver vessels that deliver the same 'useful work' with lower overall emissions.
- 2.8 IMO is currently considering the issue of minimum installed power on newbuild vessels to ensure that underpowered ships are not delivered as a result of the EEDI. A circular outlining the provisional standard has been agreed by MSC 91 with further work being carried out in early 2013 and an updated circular issued in mid 2013. The circulars will be added to the MCA external website as they are published.

3. Actions required under EEDI

- 3.1 When considering a newbuild due consideration should be given to the requirements of the EEDI. In particular consideration should be given to the application of Regulations 20 and 21 of the revised Annex VI.
- 3.2 A newbuild covered by the EEDI regime will need to be designed to comply with the appropriate phase. It should be noted that Phase Zero has a more limited application than later phases.
- 3.3 Some exceptions exist to the application of EEDI notably relating to vessels with diesel-electric, turbine or hybrid propulsion – further information on these exceptions can be found in Regulation 19 of the revised Annex.
- 3.4 The IMO has developed detailed guidance on the calculation of the EEDI and implications for vessel design as noted above but there remain some areas – notably minimum installed power – where IMO is yet to make final decisions. This work is scheduled for completion by Spring 2013 and it is not expected that Phase Zero will create any safety concerns however until such time as it is complete designers are reminded of the importance of considering vessel safety issues when designing ships to comply with EEDI.

4. Ship Energy Efficiency Management Plan (SEEMP)

- 4.1 The SEEMP is the element of the revised Annex VI that establishes a mechanism for operators to improve the energy efficiency of ships during their operations.
- 4.2 All ships over 400GT engaged in international voyages are required to keep a vessel specific SEEMP on board developed in line with the IMO guidelines noted above. The SEEMP is intended to be a living document that considers how a vessels energy efficiency can be maintained and improved throughout the vessels operating life.
- 4.3 The SEEMP should be developed in such a way as to empower the vessels crew to improve energy efficiency where possible noting that the safe operation of the vessel must remain paramount at all times.
- 4.4 The SEEMP itself does not require administration approval but the development of a SEEMP is a minimum requirement for the issue of the IEE Certificate.

5. Certification - International Energy Efficiency Certificate

- 5.1 All ships of 400GT and above and engaged in international voyages will require an International Energy Efficiency (IEE) Certificate. Operators should ensure that an IEE Certificate is in place at the first intermediate or renewal survey (as defined in regulation 5 of Annex VI), whichever is the first, on or after 1 January 2013. The UK has authorized Recognized Organisations to issue these certificates on behalf of the flag.

6.0 Domestic Vessels

- 6.1 Vessels on the UK flag engaged solely on domestic voyages are not currently required to comply with the requirements of the EEDI or the SEEMP. While it is recommended that such vessels operate in a manner consistent with the SEEMP concept and that newbuilds are constructed to comply with the appropriate phase of the EEDI the UK has not implemented a regime covering domestic vessels at this time.
- 6.2 A vessel built for domestic voyages that subsequently changes use to operate as an internationally trading ship will be expected to comply with the full requirements of the EEDI regime.

7.0 UK Regulations

- 7.1 The UK is currently in the process of developing regulations to transpose the EEDI into UK law and a consultation on draft regulations and associated guidance will occur in due course. The requirements of Annex VI are applicable internationally and vessels are reminded that regardless of the status of UK regulations the UK is a party to Annex VI and PSC will expect UK flagged vessels to comply.
- 7.2 During the development of these regulations consideration will be given to implementing a regime for domestic vessels comparable as far is reasonable and practicable with that applied to the internationally trading fleet.

More Information

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