

GUIDANCE ON EIV – ARRANGEMENTS

1 PURPOSE

This guidance paper provides to companies and verifiers best practices on how to derive the technical efficiency of the ship if the EEDI is not applicable.

The legal obligation is stipulated by Article 11 (3) and 21 (2) of Shipping MRV Regulation (EU) 2015/757.

2 BACKGROUND & SCOPE

The attained EEDI is to be reported where required by and in accordance with MARPOL Annex VI, Regulations 19 and 20.

Only for ships not covered by the EEDI, the Estimated Index Value (EIV) has to be reported for ship types as listed in:

- a) MEPC.231(65), paragraph 3: bulk carrier, gas carrier, tanker, containership, general cargo ship, refrigerated cargo carrier, combination carrier, ro-ro cargo ship, ro-ro cargo ship (vehicle), ro-ro passenger ship and LNG carrier.
- b) MEPC.233(65), paragraph 5: cruise passenger ships having non-conventional propulsion, including diesel-electric propulsion, turbine propulsion, and hybrid propulsion systems.

For the ship type which is not covered by the above guidelines, it is not required to report EIV, as "Not applicable".

Companies are encouraged to report voluntary EEDI values¹, if available, instead of the EIV.

It is to be noted that EIV figures for determining ship type dependent reference lines within the EEDI framework have been calculated for a certain build period and have been fixed for this purpose.

This guidance provides the calculation methodology and on how it could / may be applied to accommodate the legal reporting requirements on MRV.

3 CALCULATION OF EIV

To specify the calculation method for the EIV in the context of Shipping MRV, Commission Implementing Regulation (EU) 2016/1927 refers to IMO Resolution MEPC.215(63). This Resolution has been replaced by MEPC.231(65) – Guidelines for calculation of reference lines for use with the Energy Efficiency Design Index (EEDI) and more recently supplemented by MEPC.233(65). The calculation of the EIV is described in paragraphs 13 - 19 and 8 - 9, respectively:

¹ certified independently by e.g. classification societies

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The formula for calculating the EIV value for each ship (excluding containerships and ro-ro cargo ships (vehicle carrier), ro-ro cargo ships, ro-ro passenger ships and LNG carriers) is as follows:

$$\text{Estimated Index Value} = 3.1144 \cdot \frac{190 \cdot \sum_{i=1}^{NME} P_{MEi} + 215 \cdot P_{AE}}{\text{Capacity} \cdot V_{ref}}$$

Figure 1: equation for calculating the EIV for each ship
(excluding some ship types as mentioned above)

Specific formulae (and input parameters - $P_{ME(i)}$ and P_{AE}) for containerships and vehicle carriers², ro-ro cargo ships, ro-ro passenger ships and LNG carriers are provided in MEPC.231(65).

For cruise passenger ships having non-conventional propulsion same information is provided in MEPC.233(65), remaining input parameters other than Capacity and V_{ref} are provided in MEPC.1/Circ. 866.

Data should be taken from available documents. If available, the reference speed can be obtained from the power-speed curves produced following sea trials at the time of delivery. These curves were submitted by the yard to the shipping company and they constitute an important document for the ship. Alternatively, data can potentially be obtained for vessels equipped with hull & fuel performance monitoring systems.

If no other values are available, the IHSF database should be used for EIV input parameters. The importance of consistency of data sets for the three parameters P_{ME} , Capacity and V_{ref} has to be underlined.

4 VERIFICATION

Verification of the reported technical efficiency should focus on the correct use of attained EEDI values or on the correct calculation of EIV values including plausibility checks of input values.

In case of no changes in EIV values compared to previous emissions report for a ship, results of verification of previous emissions reports should be considered by the verifiers to avoid repetition of verification activities.

² vehicle carrier is a sub-type of ro-ro cargo ships

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Appendix

Abbreviations

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| EIV | Estimated Index Value |
| EEDI | Energy Efficiency Design Index |
| ESSF | European Sustainable Shipping Forum |
| IMO | International Maritime Organisation |
| LNG | Liquefied Natural Gas |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| MEPC | Maritime Environmental Protection Committee |
| MRV | Monitoring Reporting Verification |
| ro-ro ship | roll on – roll off ship, ships getting “rolling cargo” on/from board |