

Myth of decarbonization – busted



3. FINAL CALCULATIONS

3.1 Calculation of the EEXI reference (MARPOL VI Reg.24)
The EEXI reference line is calculated by formula: $E_{ref} = 127.48 \cdot 12004 \cdot 0.216$

3.2 Calculation of the EEXI required (MARPOL VI Reg.25)
Required EEXI = EEXIref / Reduction factor = $13.098 / 30\%$
Required EEXI = $43.326 \text{ (g-CO}_2\text{/ton-mile)}$

3.3 Calculation of the EEXI attained (MARPOL VI Reg.23)
Calculation based on current ME parameters (no special Power limiters):

$$EEXI = \frac{E_{ref} \cdot (1 - \sum_{i=1}^n P_{max,i} \cdot C_{max,i} \cdot C_{ref,i}) + P_{ref} \cdot C_{ref}}{A \cdot B \cdot C \cdot Capacity \cdot V_{ref} \cdot D_{ref}}$$

$$EEXI = \frac{E_{ref} \cdot (1 - \sum_{i=1}^n P_{max,i} \cdot C_{max,i} \cdot C_{ref,i}) + P_{ref} \cdot C_{ref}}{A \cdot B \cdot C \cdot Capacity \cdot V_{ref} \cdot D_{ref}}$$

Attained EEXI = $1.000 \cdot 1.0 \cdot 1.0 \cdot 17004 \cdot 1 \cdot 12.04 \cdot 1$

SEEMP in plan for 2023

4. Required CII over the next three years, attained CII and rating over three consecutive years

Vessel Particulars			
Name of the ship	IMO number	Company	Year of delivery
...	2011
Flag	Married Ship Type	Gross tonnage [t]	DWT [mt]
PLW	General cargo	12,125	17,000
Attained EEXI or EEOI	Ice Class	Applicable CII	DCI AER
9.185	LS		1.0

Year	Required annual operational CII	Attained annual operational CII (before any correction)	Attained annual operational CII	Operational Carbon Intensity Rating (A, B, C, D or E)
2022	12.042	N/A	N/A	N/A
2021	12.075	12.125	N/A	N/A
2020	N/A	N/A	N/A	N/A
2023	12.075	12.408	12.408	B
2024	12.408	12.408	12.408	B
2025	12.441	12.441	12.441	B

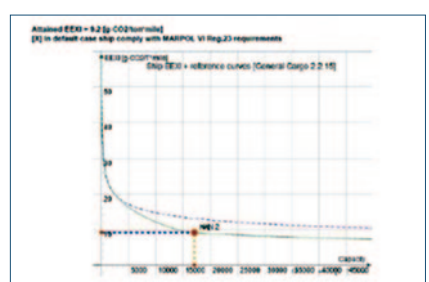
“Decarbonization, from our point of view, our human nature as a global community, should be evident,” writes Polish Register of Shipping (PRS). “These days it is one of the main goals of IMO, industry, and should be a goal for everyone who cares about our habitat and environmental aspects.”

“There are a lot of resolutions, circulars, and even conventions. One of the most important documents related to environmental protection is MARPOL — International Convention for the Prevention of Pollution from Ships. In this case, Annex VI. It came to life in 2013. Some approaches became, maybe not the same from the beginning, but have a slight chance to evaluate, they are still waiting. Few of them since then have grown in strength, like Part I of the SEEMP (The Ship Energy Efficiency Management Plan) for 400 BRT ships and above, which also became mandatory for all ships over 5,000 BRT and acting as Part II of the SEEMP, also called DCP (Data Collecting Plan). Now we have a revolution since Revised 2021 MARPOL Annex VI is mandatory (from 1.1.2022), and Part III of the SEEMP for ships over 5,000 BRT and above, of types listed in reg. 26 of this Annex, have to be placed on board from 1 January 2023 for surveyor verification during the first periodic statutory survey.

“It is our reality, and it has become true and fact. The main goals in the 2018 Initial IMO GHG strategy are to cut annual greenhouse gas emissions from

international shipping by at least half by 2050, compared with their level in 2008, and work towards phasing out GHG emissions from shipping entirely as soon as possible in this century. The Initial GHG Strategy envisages a reduction in the carbon intensity of international shipping (to reduce CO₂ emissions from transport work) as an average across international shipping by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008.

“An additional task for the shipowners, Recognized Organizations, and other participants of the marine economy driving for such goals is to achieve compliance with the process which has begun on 1 January 2023 and is to be reviewed in 2026 when new regulations and conclusions are made. These are EEXI requirements along with CII. Now the EEXI (The Energy Efficiency eXisting ship Index), which have its beginning and a way of continuation from EEDI (Energy Efficiency Design Index), matters, for example, the reference lines are the same as well as many other aspects. Nevertheless, reg. 5.4



of Revised 2021 MARPOL Annex VI says that “the verification that the ship’s attained EEXI is in accordance with the requirements in reg. 23 and 25 of this Annex shall take place at the first annual, intermediate or renewal survey, whichever is the first, on or after 1st January 2023”.

“Therefore Polish Register of Shipping (PRS) along with other leading IACS members or EEOI prepare their own IT tools for computing their technical (EEDI, EEXI) and operational (EEOI, CII) indexes. The results of these calculations are documented in technical files, and then summaries appear in appropriate certificates (IEEC, SEEMP). Core data associated with those calculations are also stored in DCS (data collection systems) locally (in all recognized organizations, e.g. Polish Register of Shipping [PRS]) and globally (IMO GISIS and UE EMSA THETIS-MRV databases). Only this approach and works, related to new coefficients in correlation with specific types of ships, e.g. chemical tankers, LNG carriers, or bulk carriers (if CSR applies or Ice Class, which understandably can be different by RO rules), give the opportunity, advantage and brainstorm for developers of such tool and background.

“What has to be done to accomplish the related task is to issue one of the main certificates — the International Energy Efficiency Certificate (IEEC). We must be aware that it is only one but a huge aspect of these changes of which we are part.”

