



CO2 päästöt varustamon näkökulma

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MUUTOSYMPÄRISTÖ OHJAA MERILIIKENTEEN KESTÄVÄÄ KEHITYSTÄ

- CII
- EU ETS
- FUEL EU MARITIME
- RAHTAAJIEN ESG TAVOITTEET
- VARUSTAMON ESG TAVOITTEET

CII

CARBON INTENSITY INDICATOR

Simplified attained annual CII formula:

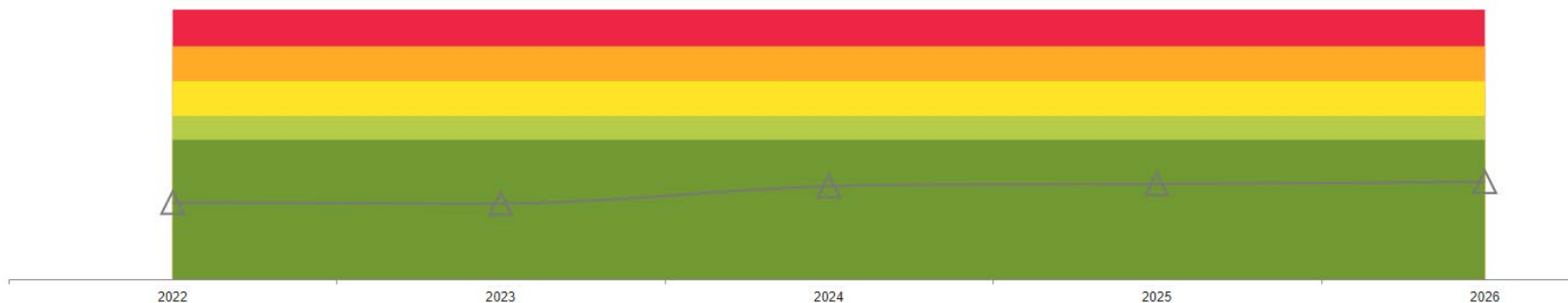
A diagram illustrating the simplified attained annual CII formula. On the left, a yellow box contains the text "CII". This is followed by an equals sign. The main part of the formula is a fraction: the numerator consists of a light blue box "Annual fuel consumption" multiplied by another light blue box "CO2 factor"; the denominator consists of a green box "Annual distance travelled" multiplied by another green box "Capacity". To the right of this fraction is a multiplication sign followed by a grey box "Correction factors".
$$\text{CII} = \frac{\text{Annual fuel consumption} \cdot \text{CO}_2 \text{ factor}}{\text{Annual distance travelled} \cdot \text{Capacity}} \cdot \text{Correction factors}$$

CII EXAMPLE, BORE WAY

Forecast to 2026 ⓘ for WAY. BORE WAY

Year ▲	Required CII	Attained CII	Attained Rating	Forecast
2022	22.89	9.27	● A	
2023	22.42	8.78	● A	
2024	21.95	10.37	● A	
2025	19.97	10.37	● A	✓
2026	19.53	10.37	● A	✓

■ Attained CII Score ■ Rating E ■ Rating D ■ Rating C ■ Rating B ■ Rating A



POLTTOAINEVALINNAN MERKITYS PÄÄSTÖIHIN

Table B.4. Emission factors referred to in Annex I to Regulation (EU) 2015/757

Fuel type	Emission factors for carbon dioxide (in grams of CO ₂ /grams fuel) in accordance with Annex I to Regulation (EU) 2015/757	Emission factors for methane (in grams of CH ₄ /grams fuel) in accordance with Annex I to Regulation (EU) 2015/757	Emission factors for nitrous oxide (in grams of CO ₂ /grams fuel) in accordance with Annex I to Regulation (EU) 2015/757
HFO	3.114	0.00005	0.00018
LFO	3.151	0.00005	0.00018
MDO/MGO	3.206	0.00005	0.00018
LNG	2.75	0	0.00011
LPG (Butane)	3.03	0.00005	0.00018
LPG (Propane)	3	0.00005	0.00018
Ethanol	1.913	0.00005	0.00018
Methanol (natural gas)	1.375	0.00005	0.00018



CO2 EXAMPLE

W-CLASS PORT CALL TO RAUMA



CO2 EXAMPLE

W-class, port call to Rauma

- Main Engine, Wärtsilä 8L34 DF, 4000KW, 750rpm
- 6,8MT/24h LNG mixed load
- Pilotage 8,5' X2 = 17'
 - ME use 1,5h X2 = 3,0h
= Apr. 0,85MT / LNG
- CO2 conversion
 - $2,75 \times 0,85 = 2,34\text{T CO}_2$
- Auxiliary Engines, Volvo Penta D13 MG, 360kW, 1500rpm
- 63l/h per aux.eng 75% load
- 30h alongside + 3h pilotage
- Aux Eng use 33h X 0,063MT
= 2,079MT / MGO
- CO2 conversion
 - $3,206 \times 2,079 = 6,67\text{T CO}_2$

Apr. 9,0 T of CO2