



5/8 JUNE 2023 LA SPEZIA NAVAL BASE

The logo for GREEN & BLUE INNOVATION HUB. It features a blue and green wavy background with the text 'GREEN & BLUE' in large white letters and 'INNOVATION HUB' in smaller white letters below it.

“RENEWABLE ENERGY COMMUNITIES THE GAME CHANGER”

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EVALUATE ADVANTAGE OF SHORE POWER VS MGO NEED TO CALCULATE CONSUMING AT BERTH

As per EU regulation 2015/757 all vessels over 5000 MT have to report their verified CO2 emissions on 4 segments including at berth to [THETIS-MRV \(europa.eu\)](https://europa.eu)

EMISSION PER TON HANDLED CALCULATION

MT CO2 Berth Emission in EU excluding cruisers	MT Co2 at berth including vessels over 400 T (21 % more than MRV 5000 tons vessel as per T&E evaluation)	MT Consuming MGO at berth : CO2/3.170-MT	MT handled per EU ports (reference Eurostat 2020)	KG MGO Consuming at berth per MT handled
7 099 400	8 590 274	2 709 866	3 300 000 000	0,82

EVALUATE ADVANTAGE OF SHORE POWER VS MGO NEED TO CALCULATE ENERGY AT BERTH

Valencia port study on Kwh per segment of operations
Memoria-Verificación-GEI-2016.pdf (valenciaport.com)

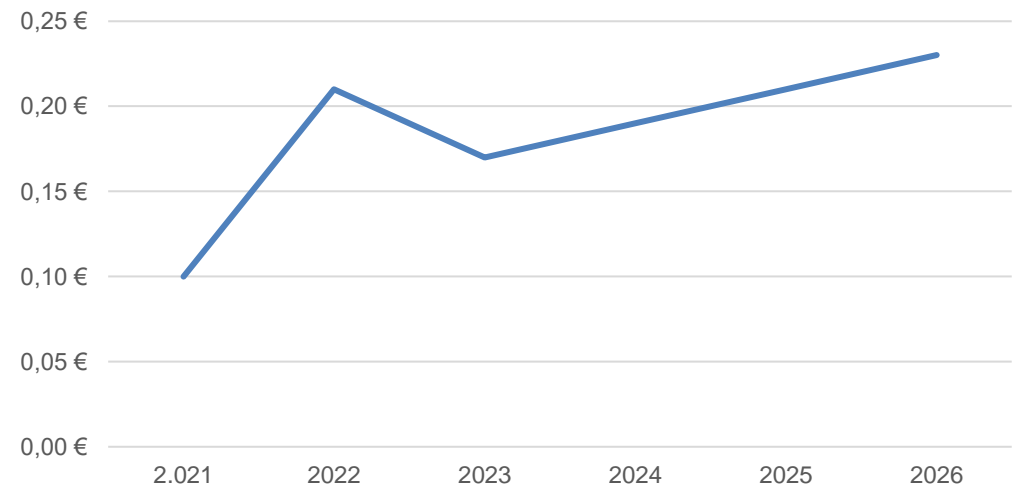
SEGMENT	YEARLY EU TONNAGE	KWH PER MT HANDLED	MWH PER YEAR (Yearly tonnage*kwh per MT/1000)	MWH PER DAY(MWH per year/365 days)	MW
GLOBAL	3 300 000 000	8	26 400 000	72 329	3 014
TUGS HANDLING	3 300 000 000	1,97	6 507 416	17 829	743
TRUCKS, LOCOMOTIVES	3 300 000 000	1,20	3 946 921	10 813	451
VESSELS AT BERTH	3 300 000 000	4,38	14 467 463	39 637	1 652
2 CRUISERS A DAY			73 623	202	8

IMPACT OF ETS ON MGO COST FROM 2024 TO 2026

MGO COST PER KWH

2021	0,10 €
2022	0,21 €
2023	0,17 €
2024	0,19 €
2025	0,21 €
2026	0,23 €

MGO COST PER KWH FROM 2021 TO 2026 AND BEYOND

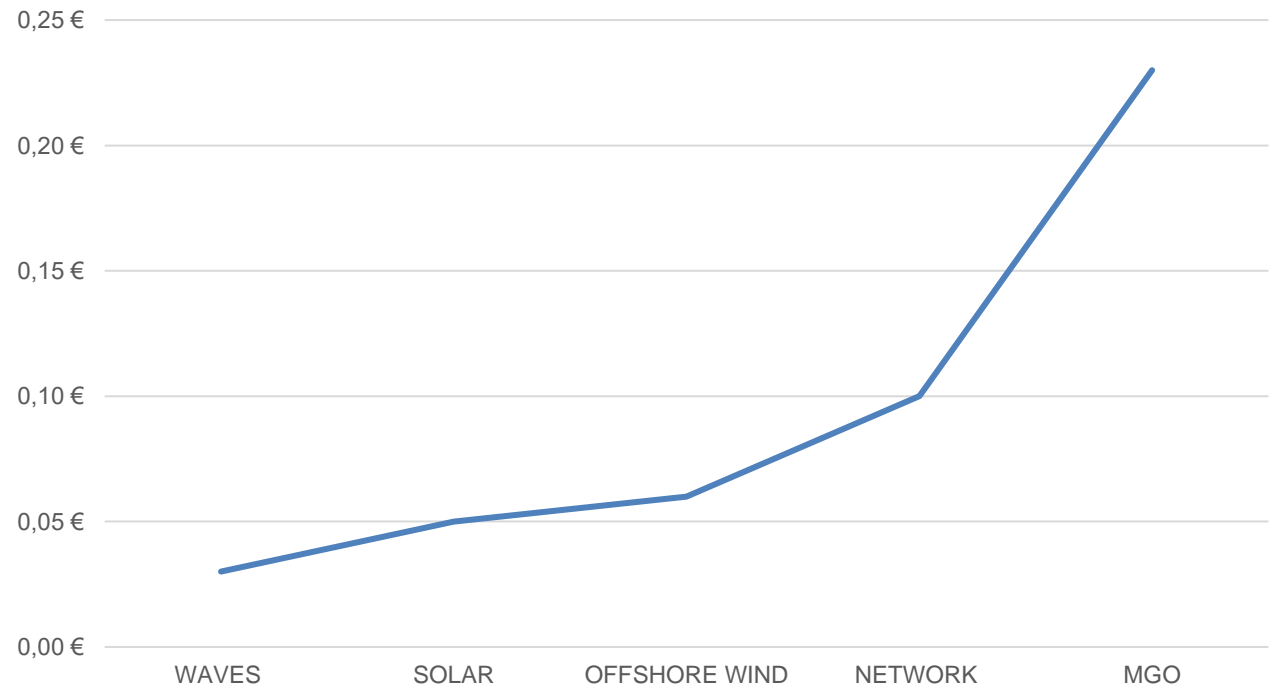


RENEWABLE ENERGY COST THE GAME CHANGER

2026 AND BEYOND KWH COST

WAVES	0,03 €
SOLAR	0,05 €
OFFSHORE WIND	0,06 €
NETWORK	0,10 €
MGO	0,23 €

2026 AND BEYOND KWH COST



RENEWABLE ENERGY COMMUNITY TO COVER 3014 ADDITIONNAL MW

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