SEA TRADERS S.A.

PROMINENCE MARITIME S.A.

# " Energy transition in shipping"

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# Ideal alternative fuel

- Have a proven environmental benefit with a long time horizon
- Be sustainably sourced
- Readily available round the world
- Safe to handle and use
- Competitively priced
- Should satisfy the whole range of GHGs

# Energy & Alternative Fuels

- The global shipping industry consumes about **300** million tons of fossil fuels and emits around **940** million tonnes of CO2 annually (3rd IMO GHG study).
- To replace the fossil fuels of shipping with **Green methanol we need 636 million tons per year.**
- The total projected capacity of all **e-methanol projects will be 10.6 million tons by 2027 and 17.0 million tons by 2030 (less than 2.7%)**.
- Similar situation for other alternatives of zero carbon fuels

# Energy & Alternative Fuels

- The production of alternative fuels requires huge amount of electric energy while the energy that will be delivered when these fuels are consumed is only a fraction of this.
- In order to replace HFO, MGO and LNG required by the shipping industry with green fuels produced from renewable energy sources, the required amount of renewable energy would be approximately equal to **4.5 times the global solar energy produced or 3.5 times the wind energy produced or 2 times if you use global production of both solar and wind just for decarbonizing shipping.**

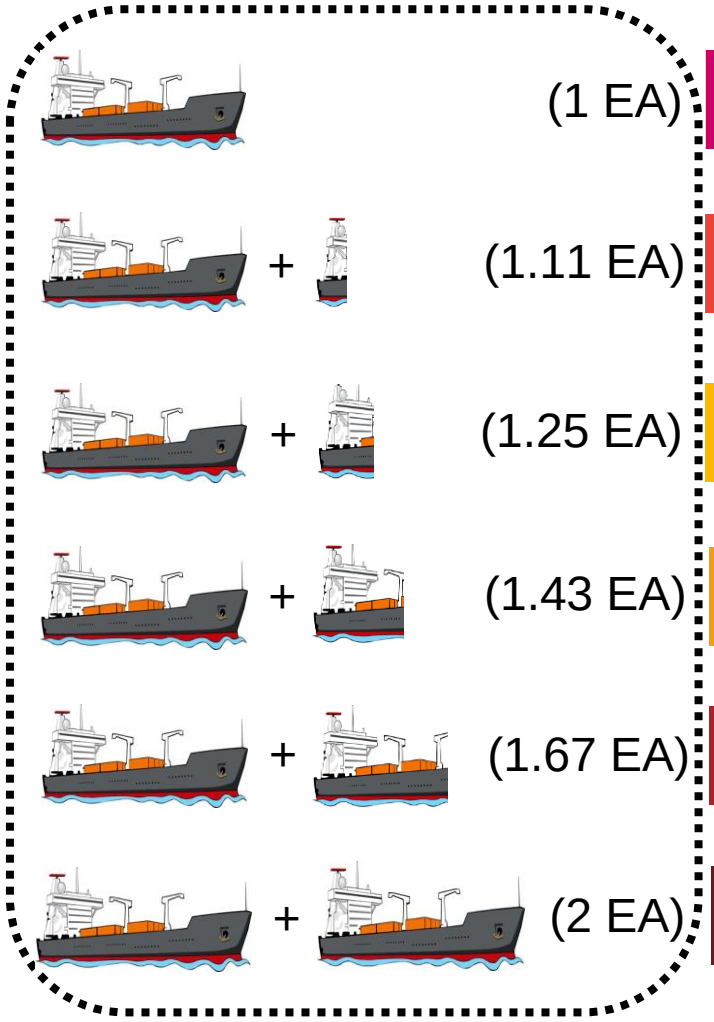

Source:Dr Martin Stopford

# Operational measures to lower consumption – new vessels' efficiency

- Ships built in **2024** are by design **25-30%** more efficient than ships built 15 years ago
- Operational measures such as triangulating, speed optimization, just-in-time arrivals, hull cleaning can significantly reduce the energy consumed by the maritime industry
- It is estimated that an additional **16 % fuel savings** could be generated by energy efficiency measures by 2030
- The transportation work can be performed consuming only half of the 8.7 exajoules required today

# Speed reduction

❖ Annual $CO_2$ emission – 180K Bulker / Carrying 540.000 MT for a year (281 days)




| | | |
|---|---|---|
| (1 EA) | **14.5 kn (reference)** → $CO_2$: 40 KMT | **100%** |
| (1.11 EA) | **13.05 kn (-10%)** → $CO_2$: 32 KMT | **80.5% (-19.5%)** |
| (1.25 EA) | **11.6 kn (-20%)** → $CO_2$: 27 KMT | **67.2% (-32.8%)** |
| (1.43 EA) | **10.15 kn (-30%)** → $CO_2$: 23 KMT | **56.6% (-43.4%)** |
| (1.67 EA) | **8.70 kn (-40%)** → $CO_2$: 19 KMT | **48.2% (-51.8%)** |
| (2 EA) | **7.25 kn (-50%)** → $CO_2$: 17 KMT | **42.2% (-57.8%)** |

Environmental groups that had supported speed reduction:

1. Clean Shipping Coalition (CSC)
2. AirClim
3. European Federation for Transport and Environment (T&E)
4. Environmental Investigation Agency (EIA)
5. Greenpeace International GREENPEACE
6. Pacific Environment (PE)
7. Seas at Risk
8. Stichting De Noordzee (North Sea Foundation)
9. World Wildlife Fund (WWF) WWF®

- The energy transition requires both innovation and pragmatism
- We cannot abandon conventional fuels prematurely
- We should be making meaningful reductions in emissions today while preparing for a future with alternative fuels
- Use of new, highly efficient engines and designs for significant fuel reductions
- Operational measures can reduce emissions now and have minimal cost

# Concluding Remarks