

A scenic landscape of a fjord with steep, rocky mountains and a small boat on the water. The mountains are covered in green vegetation and have patches of snow. The sky is cloudy. The water is calm and reflects the surrounding landscape. A small boat is visible on the water in the foreground.

**Together we are the  
Roar of the Tide of Change**

Accelerating the Market to assure  
First Movers & Fast Followers  
Profit from Risks



# ZESTAs.

**Zero Emission Ship Technology Association**

The tide of change

Our Mission is to assist commercial shipping to reduce emissions on a steep trajectory, keeping in line with 1.5 degrees.

To accomplish this we will:

- Influence regulators and policy maker at National and International levels to introduce legislation that obligates the uptake of zero emission technologies.
- Create a platform for zero emission ship Technologies (ZEST) to collaborate on ZEST projects.





## For Technology Providers

ZESTAs will serve as a united voice to; impact legislation and regulation, develop zero emissions ship projects, and seek common financing for R&D

ZESTAs will provide high visibility through:

- Project descriptions on ZESTAs Website
- Events
- Marketing materials
- Press and Media



## For Shipping Industry

ZESTAs will push for legislation that levels the playing field and incentivises the uptake of zero emission ship technologies, turning first mover risk to fast profit.

ZESTAs will:

- Educate the policy makers at National & International levels on the availability and technology readiness of ZEST
- Provide a database of companies and zero emission technologies by type

The Zero Emissions Ship Technology Association was founded in March of this year in Brussels  
We've already participated in high level events  
Example - the ICCT seminar on R&D topics for zero emissions shipping and implementation of GHG emissions reductions policy,



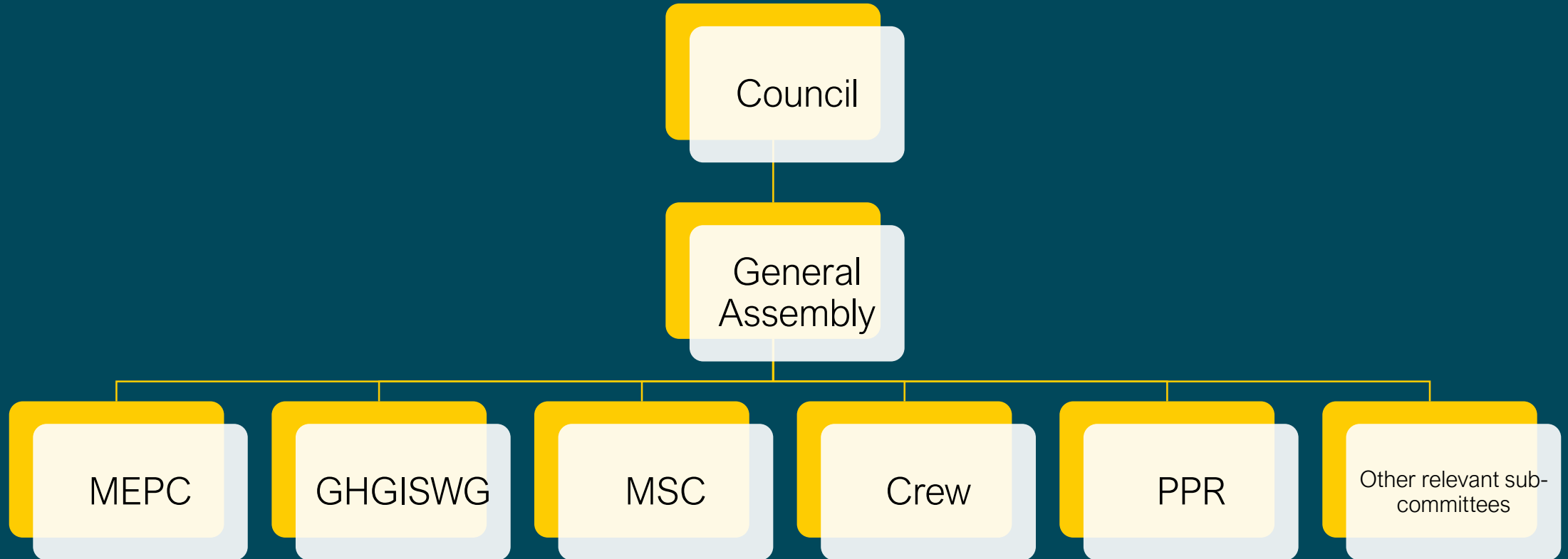
Panellists; J. Motlow, GGZEV; B. Wood-Thomas, WSC;  
F. Abbasov T&E; Madadh MacLaine, ZESTAs, K. Iwaki, MLIT;  
J. Bradshaw, ICS; Bryan Comer, ICCT, moderator



IMO Council Plenary July 19

ZESTAs presented at the IMO Council meeting in London as a guest of the Malaysian delegation who have expressed an interest in creating an International Innovation Incubator with ZESTAs membership.

# IMO top down approach



# IMO planed to date

## **GHG ISWG November 19**

- Lunchtime presentation
- Evening reception
- Multi media expo in delegates lounge

Application for observers statues March 20

## **MEPC April 20**

- Presentation
- Paper/s
- Bulky paper



# Path Forward

- **IMO** – Increase level of engagement with regular input into working groups
- **IMRB** – International Maritime Research Board
- **International Innovation Incubator** - with Malaysia “Compliance through innovation”
- **SMM** - ZESTAs is coordinating The Zero Emissions Village and Innovation Forum in the heart of the A5 Alternative Propulsion and Fuels Hall. Call for exhibitors and presenters.
  - Prize for most disruptive early innovation – free stand at SMM!
- **Website update** – Focus on Economic Advantage, members project pages
- **Events** – High profile presence at many up coming events; Chair, Presenter, Moderator, ...
- **Regional Policy** – EU, UK, US, Malaysia, California, etc



# KISS\* - Hard line on full membership

99.999%

$$\frac{\left( \prod_{j=1}^M f_j \right) \left( \sum_{i=1}^{nME} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)} \right) + (P_{AE} \cdot C_{FAE} \cdot SFC_{AE}^*) + \left( \left( \prod_{j=1}^M f_j \cdot \sum_{i=1}^{nPTI} P_{PTI(i)} - \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{AE_{eff(i)}} \right) C_{FAE} \cdot SFC_{AE} \right) - \left( \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME} \right)}{f_i \cdot Capacity V_{ref} \cdot f_w}$$

Wind + H<sub>2</sub> + battery = 0

\* Keep It Simple Stupid!

JOIN US!

Wind + H<sub>2</sub> + battery

+

Ship designers

+

Member Organizations



# Current Members



ENERGY OBSERVER



Nedstack

PEM FUEL CELLS

*To be sure.*



PBES



HYON



Zero Emission  
Maritime Technology



PROPELWIND

ECONOWIND



Fair Winds Trust



ARENA Ocean  
Hyway Cluster

ZESTAs.

