



CLEAN ENERGY MARINE HUBS

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

**Presentation Alianza
Net-Zero Mar Valencia, Spain**

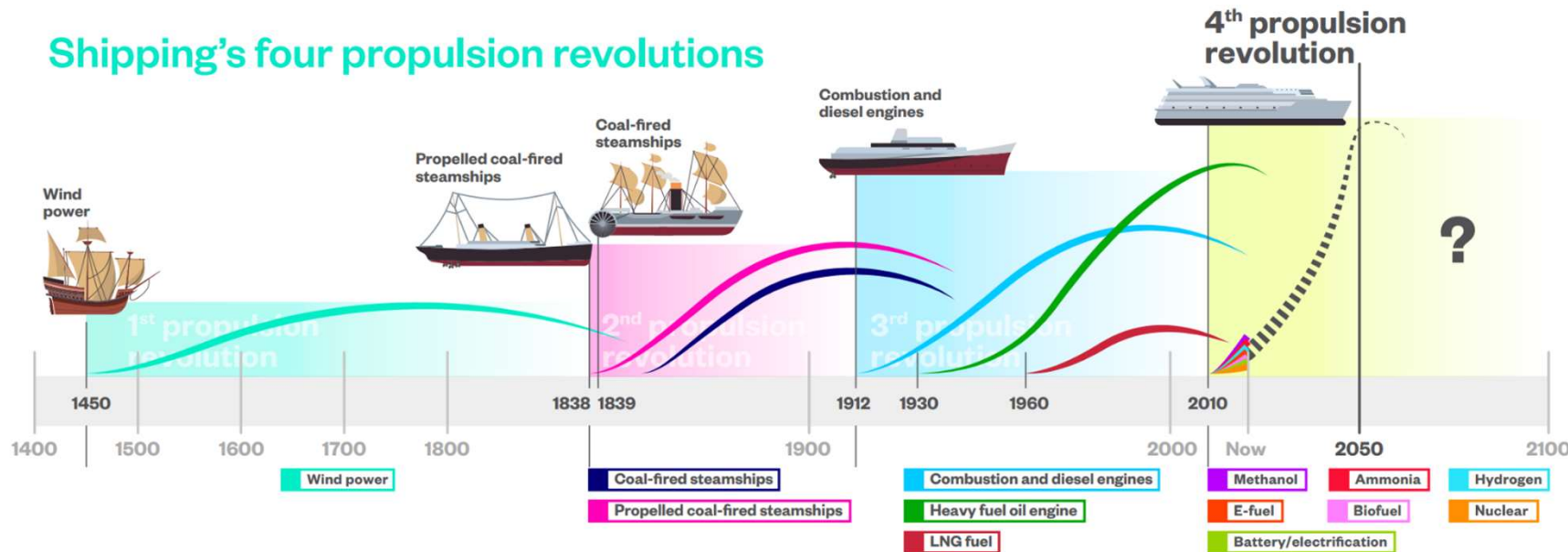
Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

Shipping's four propulsion revolutions



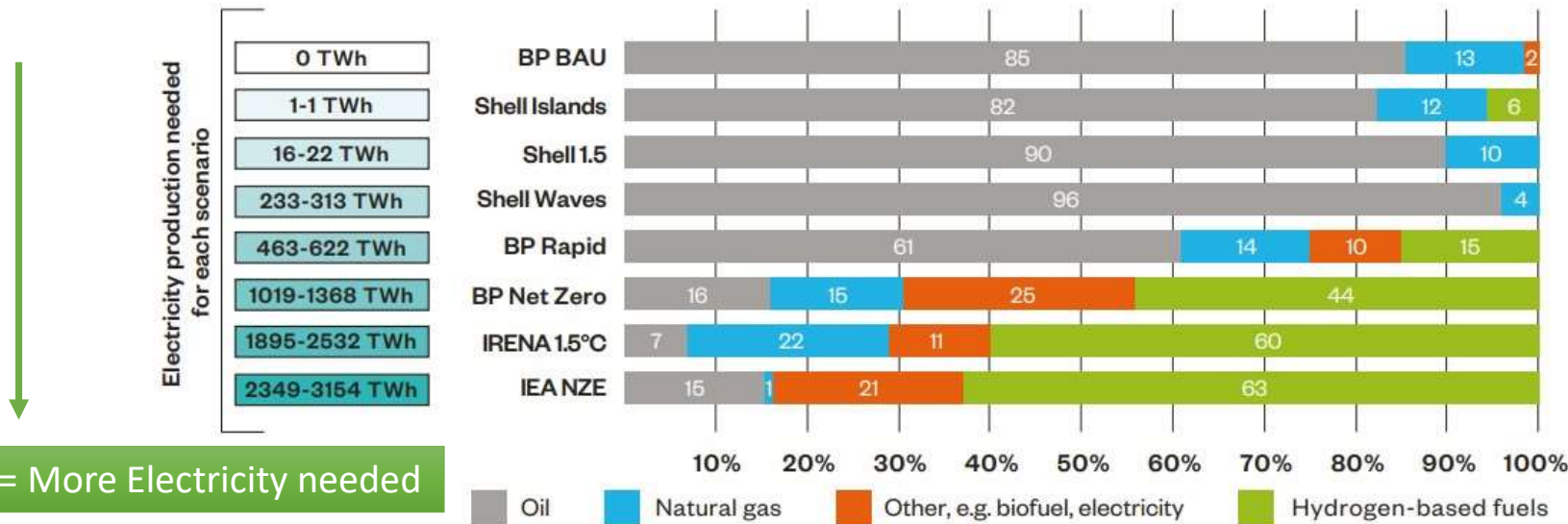
What makes the net-zero transition different?

Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

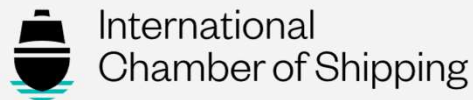


Net-Zero = More Electricity needed

How to prioritize access to electricity?

IMO's Strategy and Net-Zero Goals = Net-zero by 2050
Paradigm shift

- Production at scale of low and zero carbon fuels close to ports.
- Global regulation and cross-sectoral collaboration
- Dual-role of Shipping as an ENABLER of the energy transition



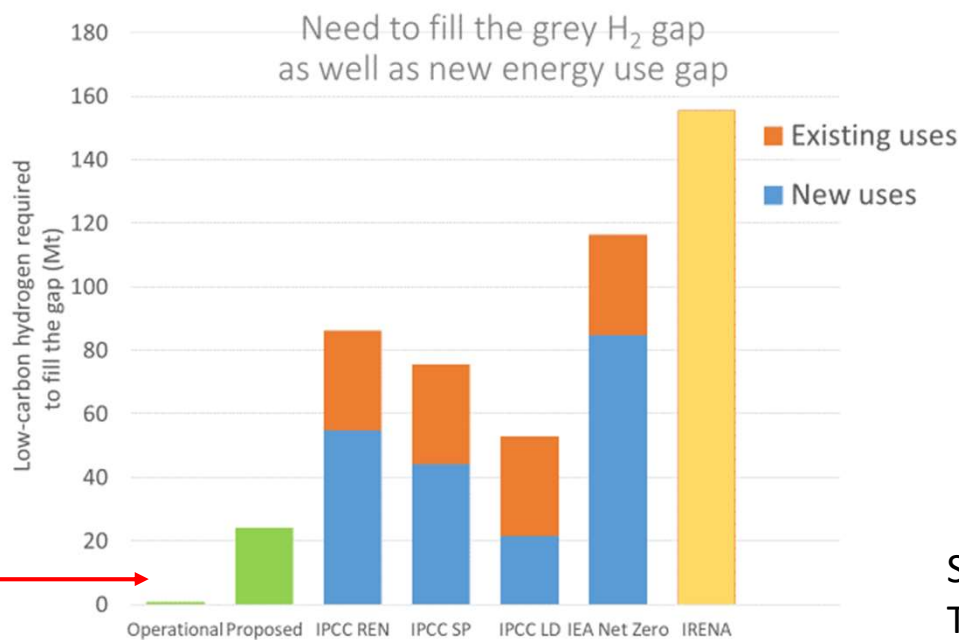
Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



GAP between government announcements and real progress (low-carbon hydrogen).

Only 4 % of the projects are operational worldwide.
How many close to ports?



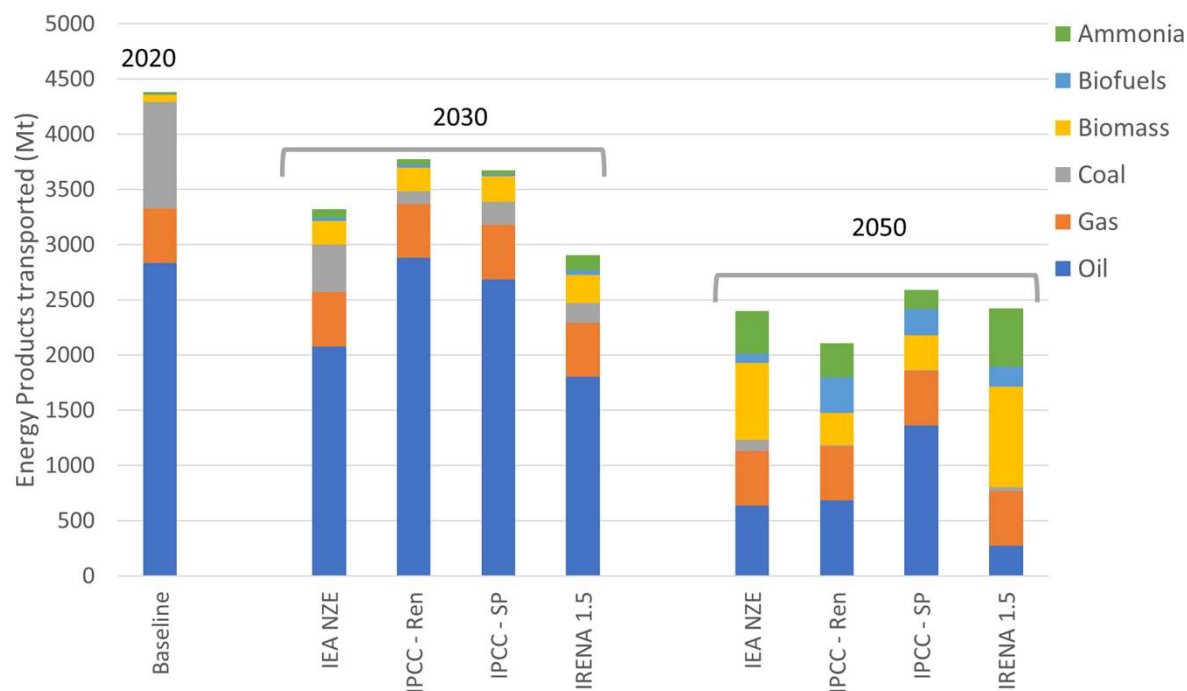
Source:
Tyndall
Centre/ICS

Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



Energy Products Seaborne Trade towards low-carbon fuels 2050. **To increase share of clean fuels.**

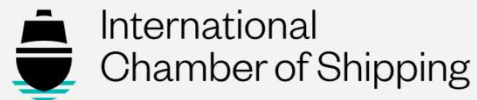


Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



- **Public-Private Platform** across the sectors of the energy-maritime value chain (**ports, energy providers, shipping, finance and governments**).
- Global **cross-sectoral platform** to share knowledge and data to **de-risk investments** to set up **HUBS** to **accelerate production, transportation and use (aggregated demand)** of low-carbon fuels through the maritime sector.
- **Co-led by Government & Industry** (Taskforce of CEOs of cross-sectoral stakeholders).



Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL



ICS represents national shipowners associations, representing over **80% of the global fleet.**



IAPH members represent **60% of seaborne trade and 60% of world container traffic.**



CEM members represent **90% of installed clean energy generation capacity, 80% of global clean investments.**

Taskforce members to include (energy companies, shipping companies, ports, finance).



Clean Energy Marine Hubs (**CEM-Hubs**)

De-risking and transforming the Energy-Maritime supply chain

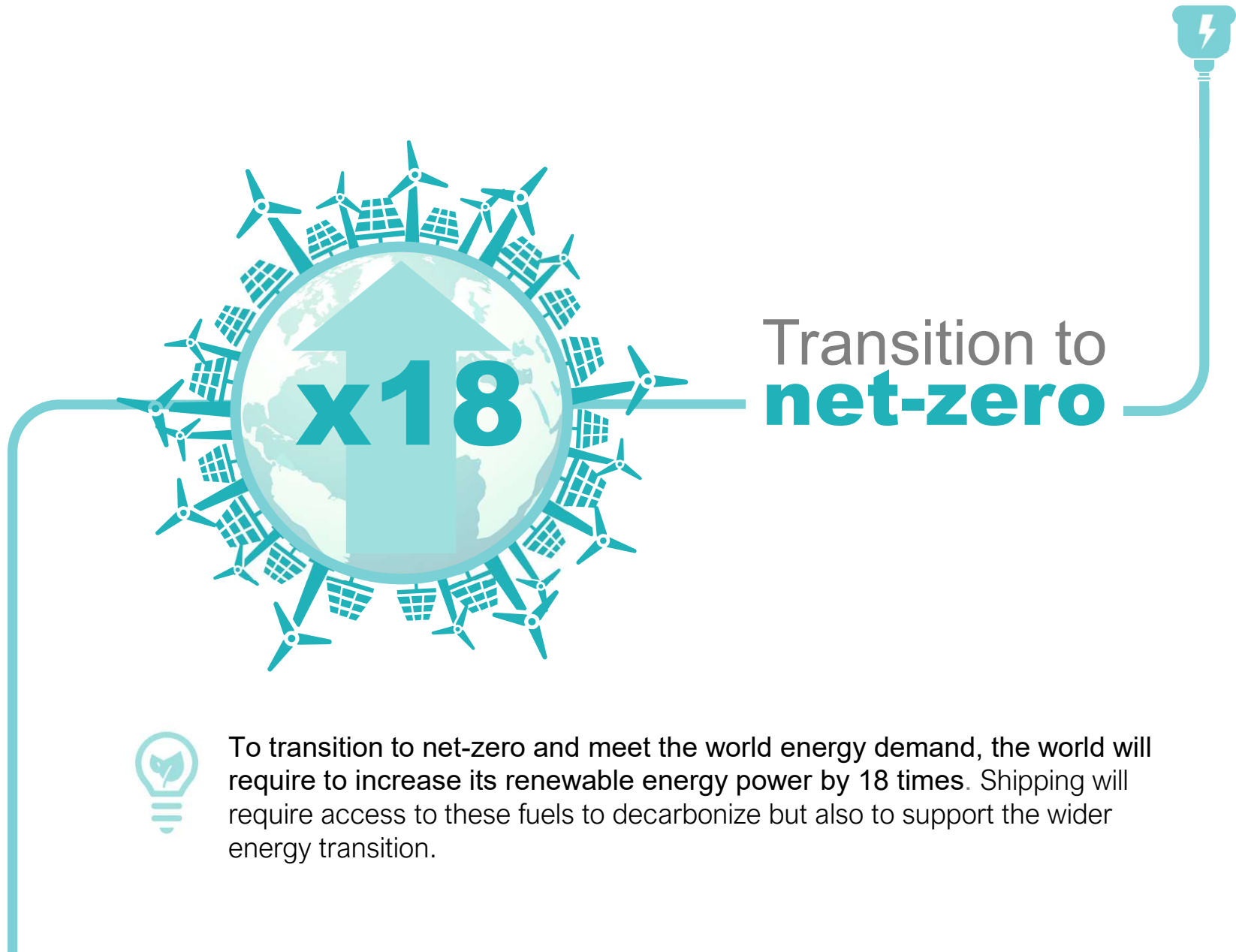
Clean Energy Marine Hubs (CEM-Hubs)

De-risking and transforming the Energy-Maritime supply chain



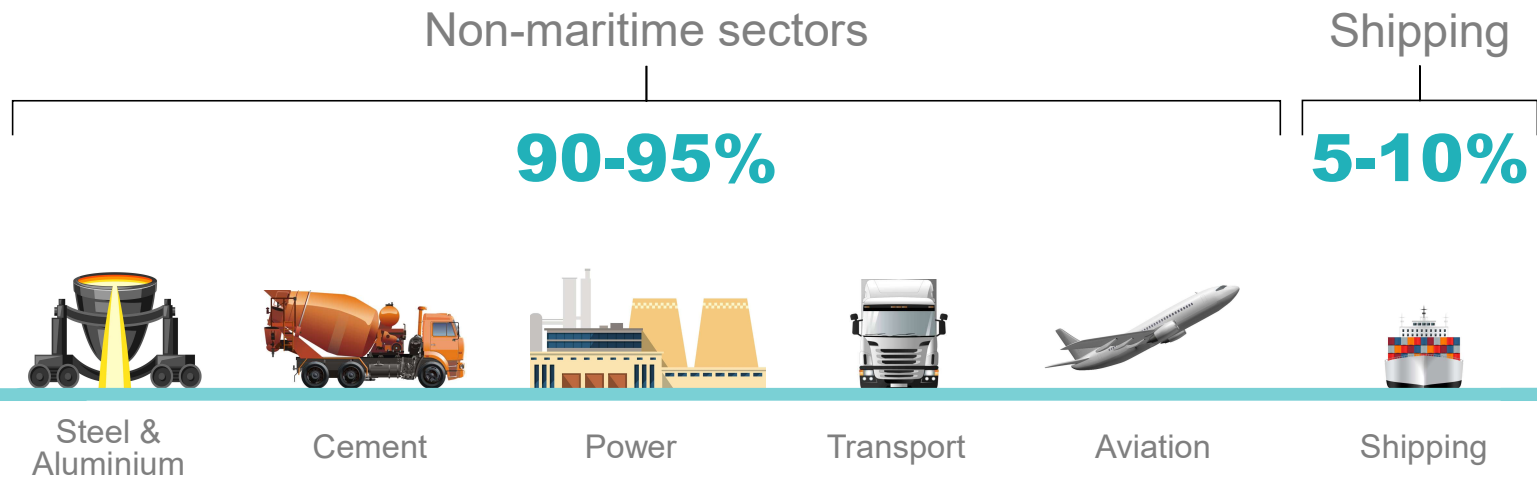
To decarbonize the world,
global electricity demand
will increase to
60,000 TWh





Multiple sectors are looking to **hydrogen** and **sustainable biofuels** to **decarbonize**

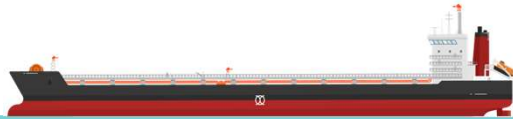
The hydrogen demand alone by 2050



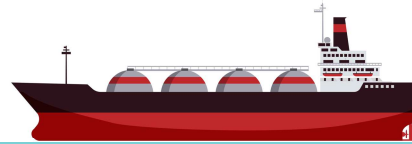
Shipping will be a **MINOR** player in the Hydrogen demand by 2050 but a **KEY ENABLER** to transport these fuels.

Shipping Transports

50%
of future-fuels
trade to be shipped



36%
of the worlds
energy

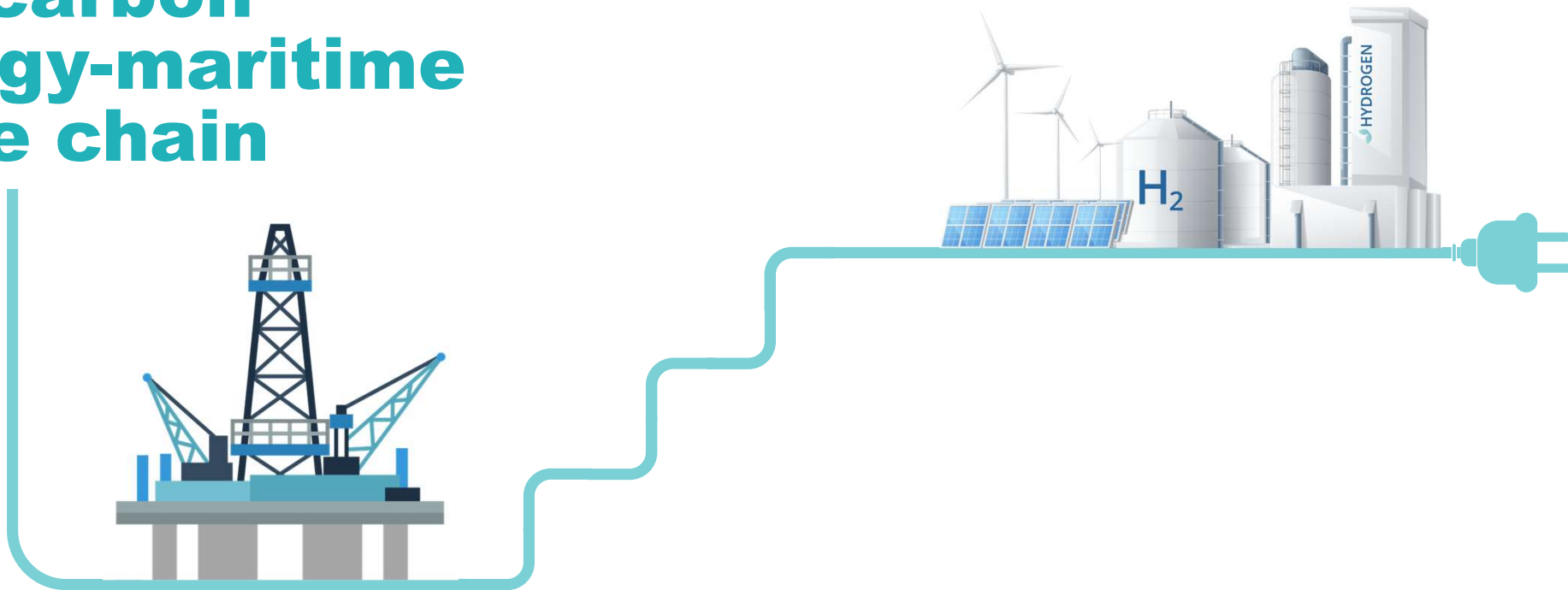


80%
of global trade



- 💡 Shipping alone transports **80%** of global trade.
- 💡 **36%** of the world's current energy is transported by sea from source to consumption.
- 💡 The International Renewable Energy Agency (IRENA) estimates that over **50%** of the trade of zero carbon fuel will need to be transported by ship from producing to importing countries by 2050.

This means transitioning to a **low-carbon energy-maritime value chain**

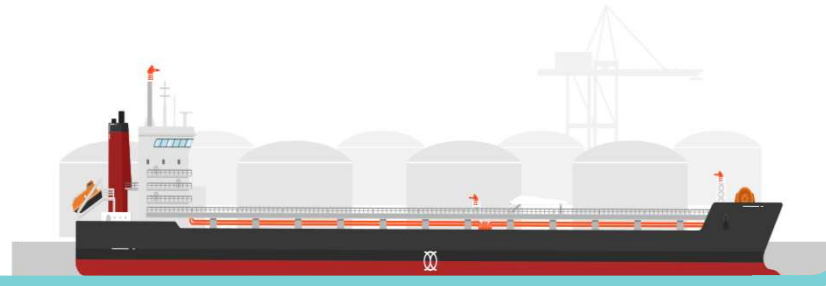


This means transitioning from a mostly fossil-fuel energy-maritime value chain to a low-carbon energy-maritime value chain, modifying production, storage, transport and import infrastructure

This requires a **massive increase in renewable energy**



with new capacity & infrastructure **strategically located close to a port**



This aggregated demand of low-carbon fuels will require a **massive increase of renewable energy** to produce e-fuels. And particularly for that **new capacity and infrastructure to be strategically located close to a port or access to ports.**

Clean Energy Marine Hub (CEM-Hub)

Infrastructure located close to and with access to port facilities

Power & Production

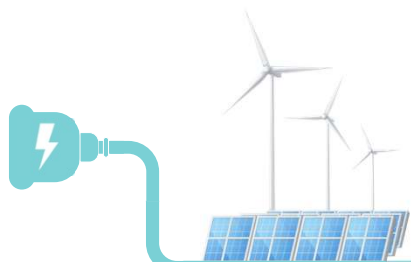
Strategically located for connection with the maritime sector

Storage & Conversion

Built with access to a port

Transportation and bunkering

Up to 5 times more low-carbon fuels transported than bunkering



Renewable power GW

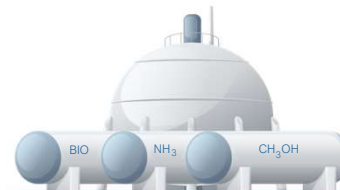
Offshore Wind, Onshore Wind & Solar



Water Electrolysis

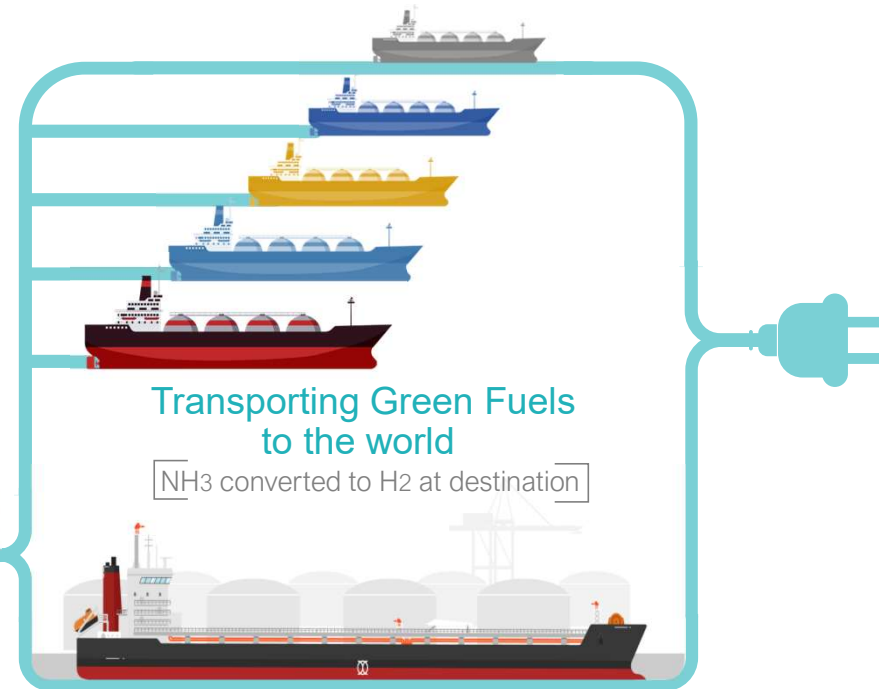


Hydrogen Storage



Converted

Green Ammonia
Green Methanol

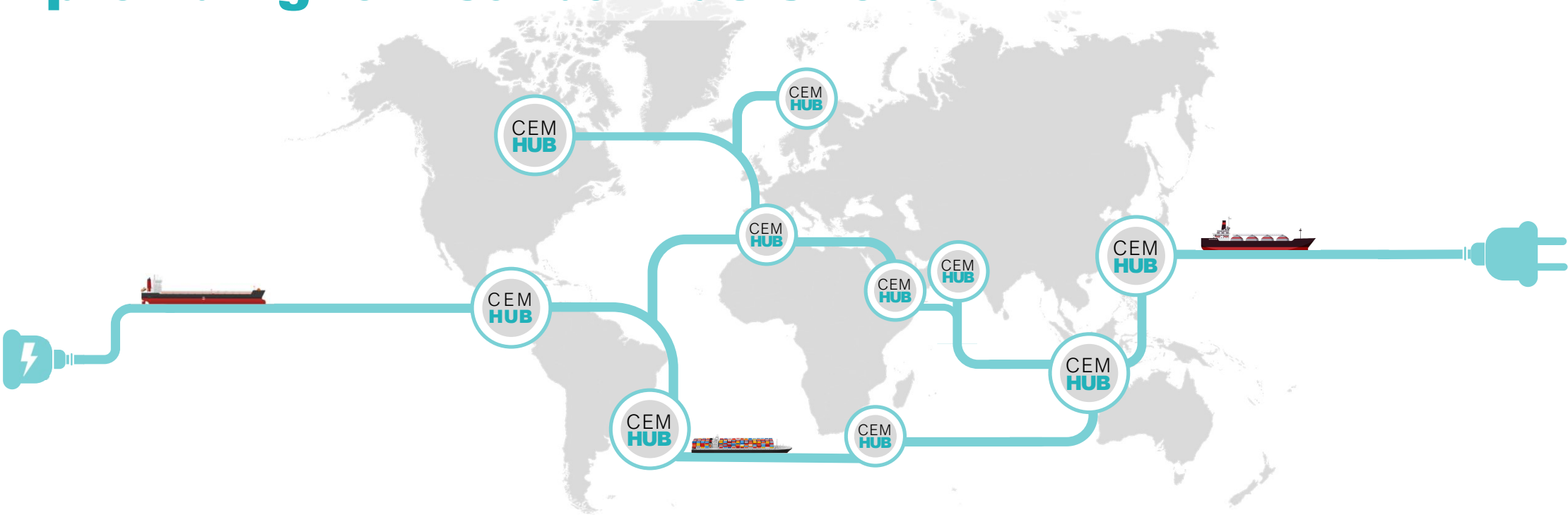


Transporting Green Fuels to the world

NH₃ converted to H₂ at destination

Powering vessels with Green Fuels

Together Governments and industry will seek to establish Clean Energy Marine Hubs across the globe, **providing low-carbon fuels for all**



Governments and industry by launching the CEM-Hubs initiative under the Clean Energy Ministerial platform will seek to establish Clean Energy Marine Hubs across the globe, coordinating efforts to advance faster together in de-risking and greening the energy-maritime link and greening the global supply chains, by providing low-carbon fuels for ALL.

Governments and private sector across the value chain will share **best practices** to **de-risk investment** to **accelerate production**



We all need **renewable energy for low-carbon fuels at scale!**

By acting now, and cooperating globally, the benefits are immense locally:

Low-Carbon Energy Security

Net-zero Economic Development

Improved Affordability

Trade Flexibility





Transition to
**net-zero
together**



**CLEAN ENERGY
MARINE HUBS**

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL



The benefits of working together globally will be felt locally for years to come.



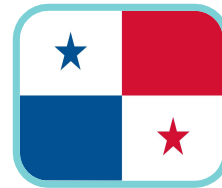
CLEAN ENERGY MARINE HUBS

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

Co-leading Governments



Six supporting governments



Canada

Norway

Panama

UAE

Uruguay

CONTRIBUTIONS



AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

- Key aspects of this transition. **Why is it different now?**
- **Electricity** represents the **paradigm shift!** From 0 to 3,000 Twh.
- Don't underestimate the **Scale** and **Speed**.
- **No HUBS = no fuels at scale! Energy Hubs** for maritime to **Transport & Use** low-carbon fuels.
- Shipping to play an important role for the Global Energy Transition, but it needs to be **Fast Track!**
- **CEMHubs** – Collaboration across the energy-maritime value chain, best practices **6 countries** at Energy **Ministerial level**.

www.cleanenergyministerial.org

What is next?

COP28: Maritime Programme and Conference 9th and 10th of December, Dubai (Museum of the Future)



AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL



www.cleanenergyministerial.org



CLEAN ENERGY MARINE HUBS

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL



www.cleanenergyministerial.org