



CLEAN ENERGY MARINE HUBS

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

Presentation UNCTAD
December 2023

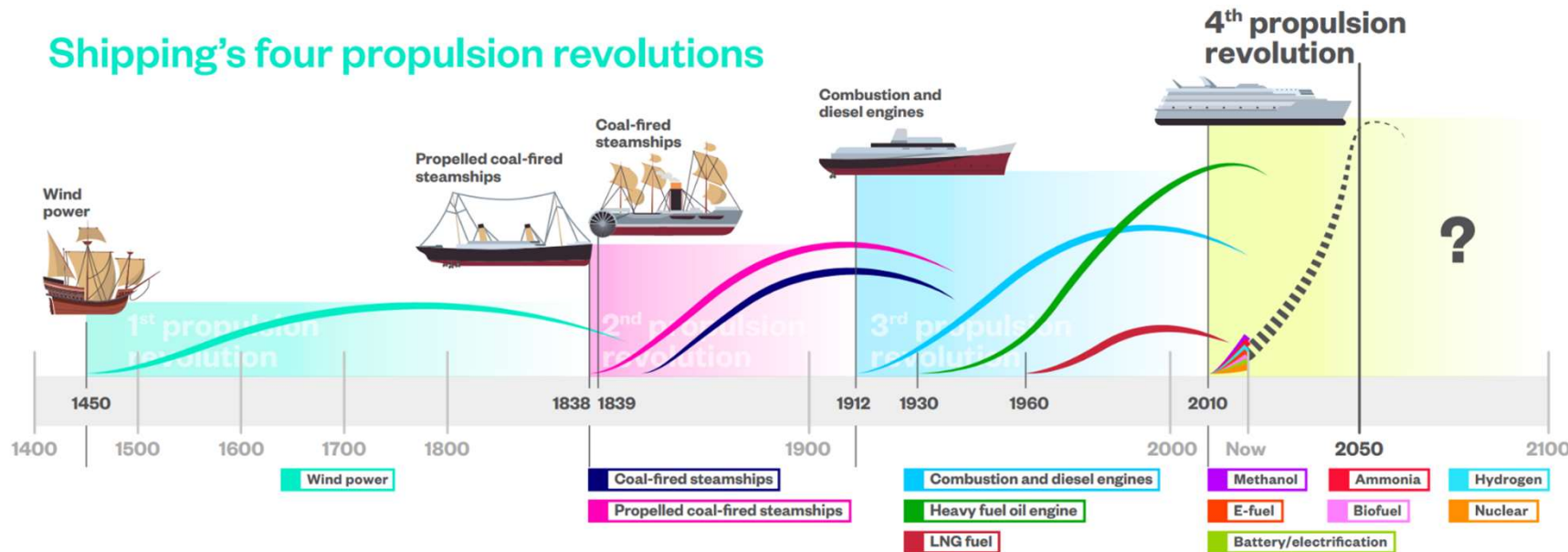
Clean Energy Marine Hubs (CEM-Hubs)

The ENERGY-MARITIME high-level global initiative



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Shipping's four propulsion revolutions



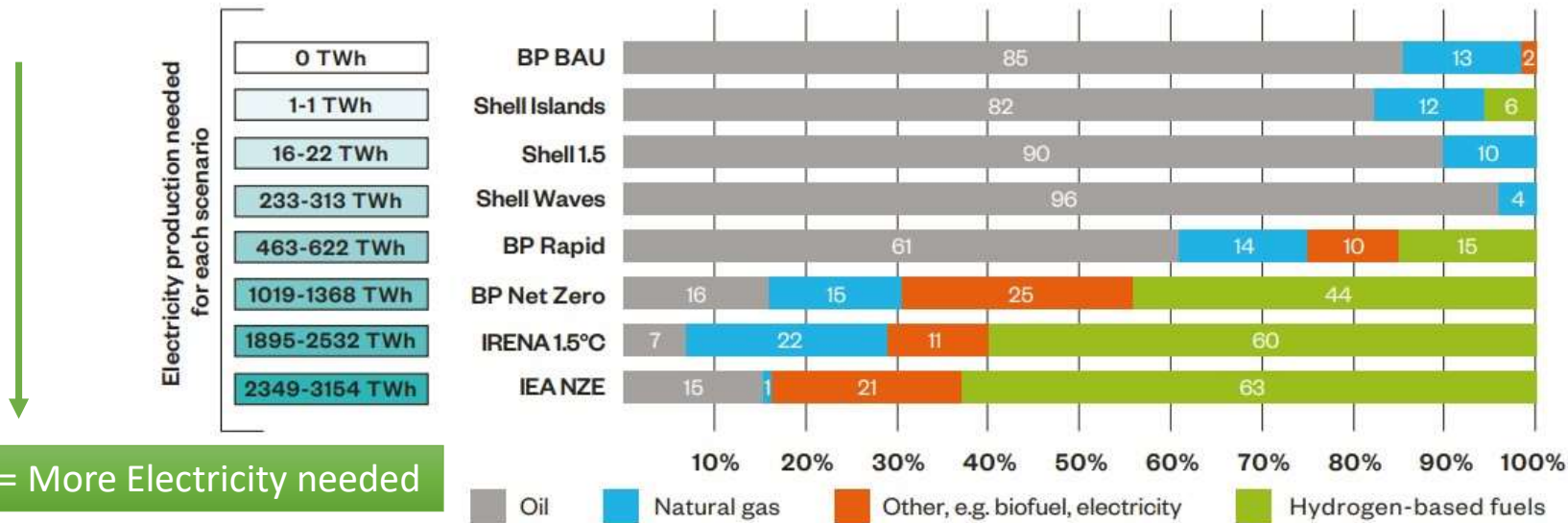
What makes the net-zero transition different?

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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

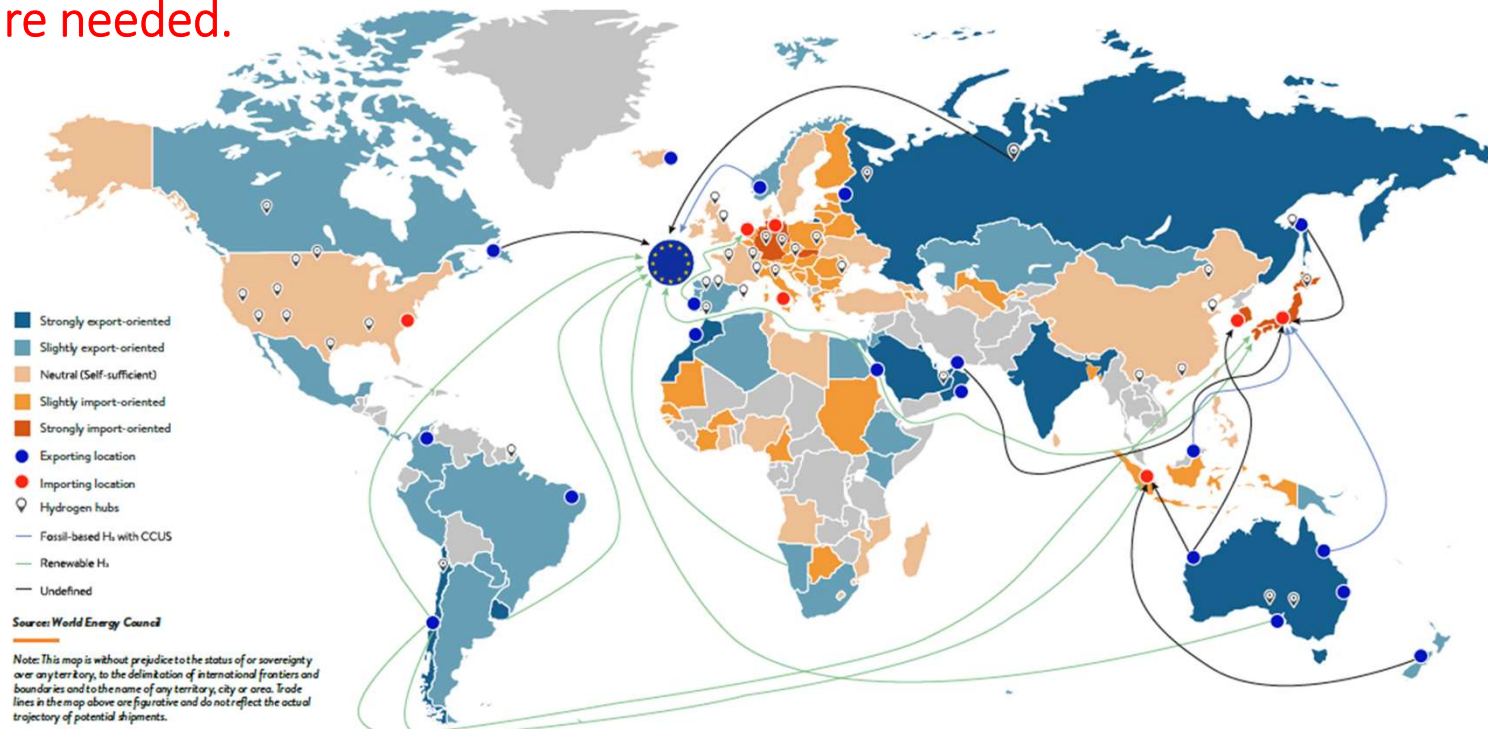
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Aligning Demand with Supply. **Where will these low-carbon fuels come from? Clean Energy Hubs are needed.**



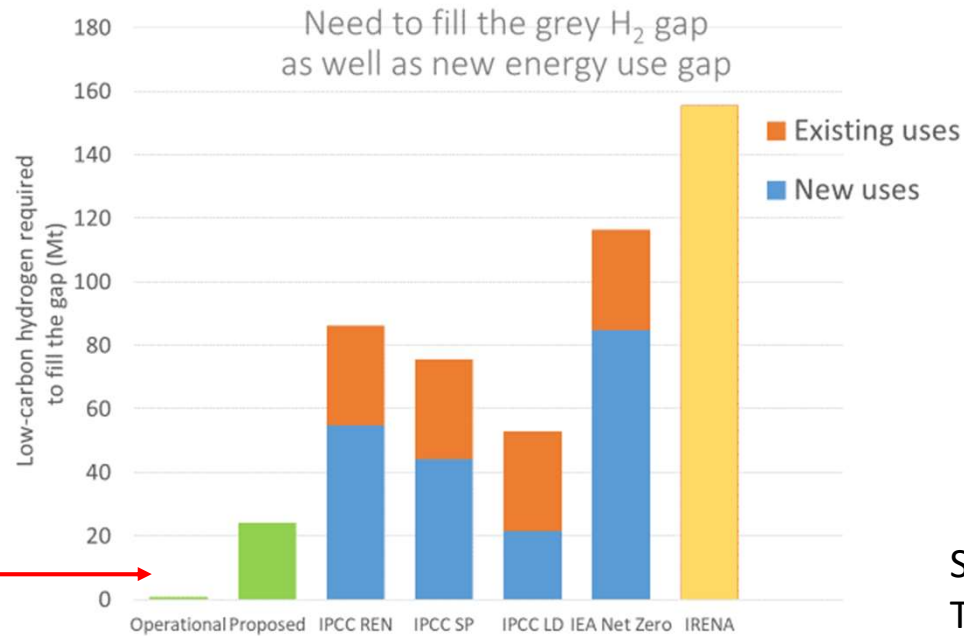
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GAP between government announcements and real progress (low-carbon hydrogen).

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



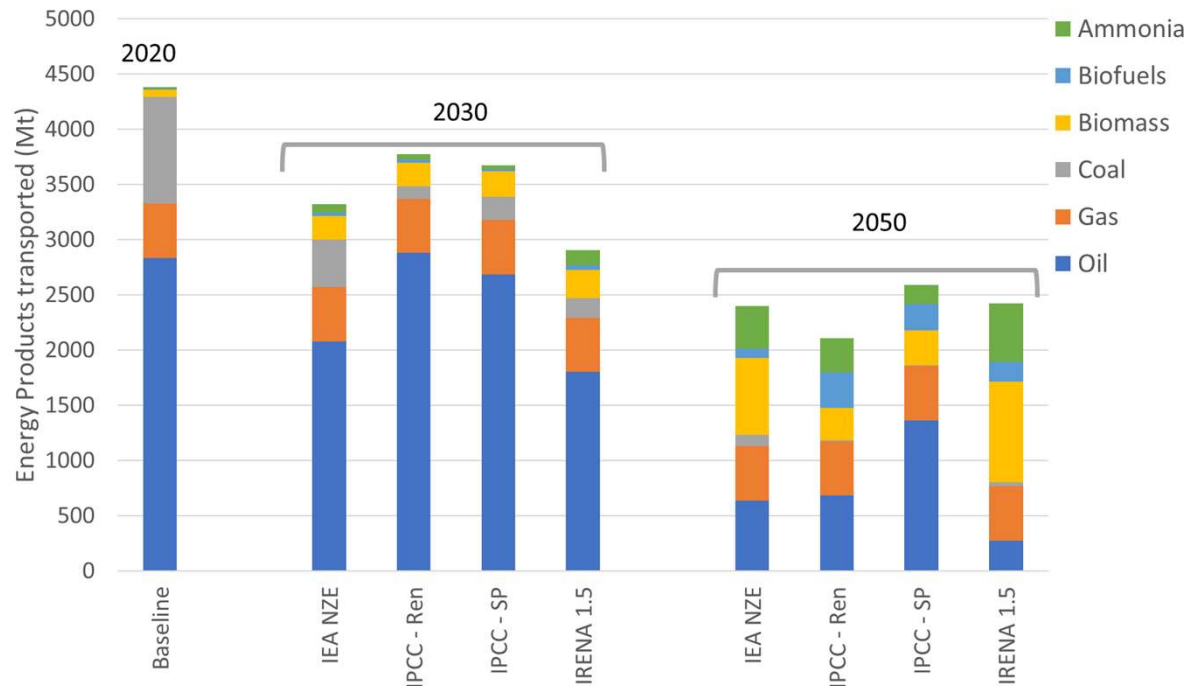
Source:
Tyndall
Centre/ICS

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

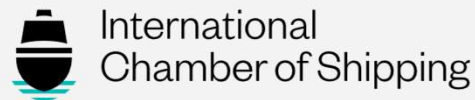


Clean Energy Marine Hubs (CEM-Hubs)

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- **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).



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

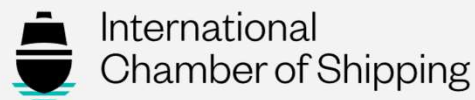


IAPH members represent **60% of seaborne trade and 60% of world container traffic.**



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

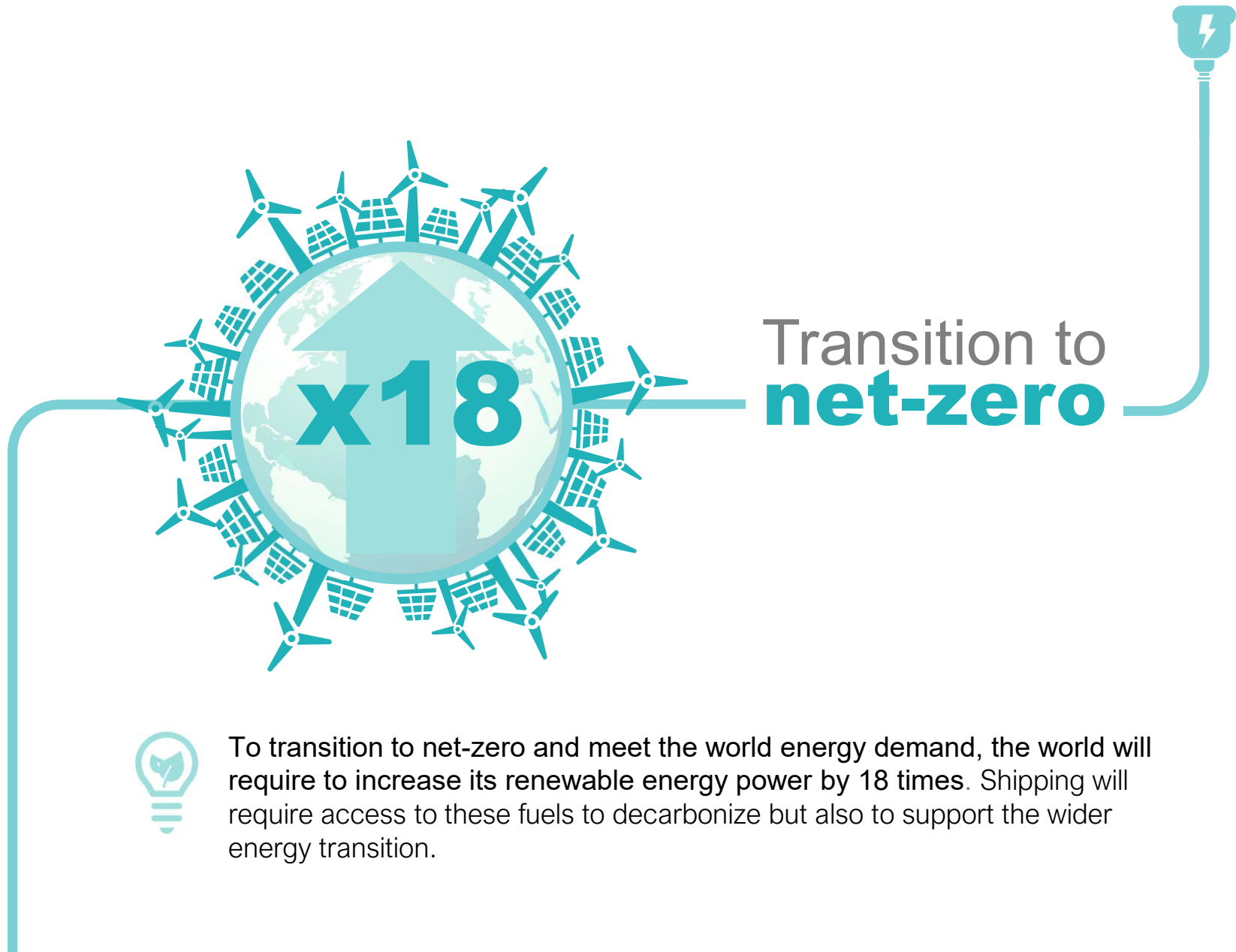
Clean Energy Marine Hubs (CEM-Hubs)

De-risking and transforming the Energy-Maritime supply chain



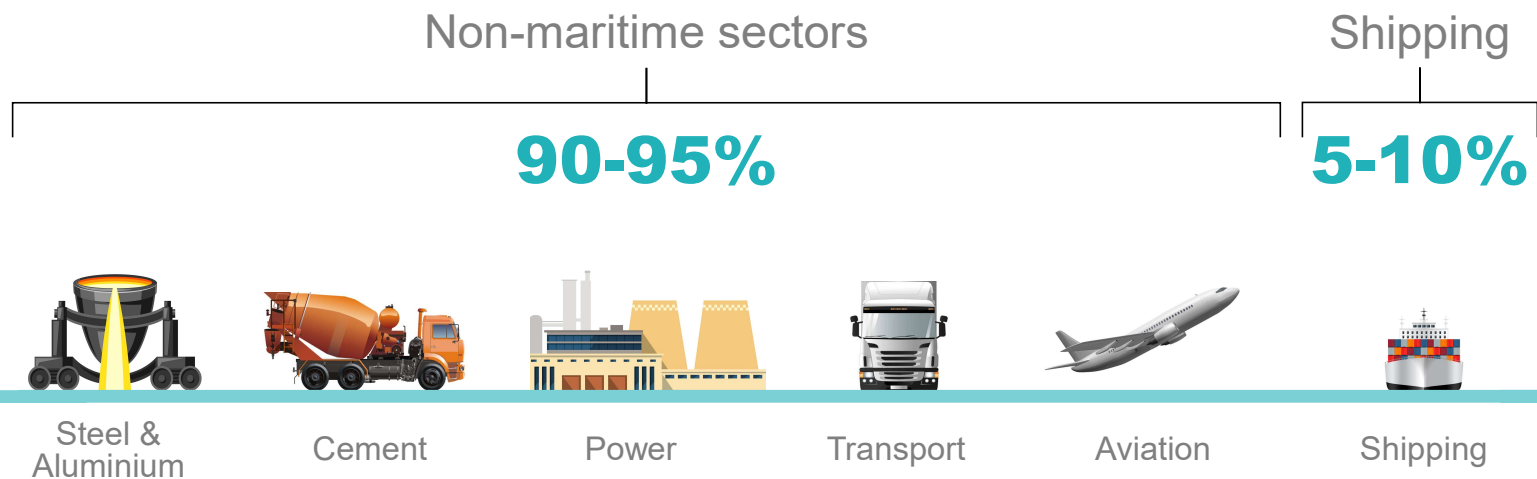
To decarbonize the world,
global electricity demand
will increase to
60,000 TWh





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

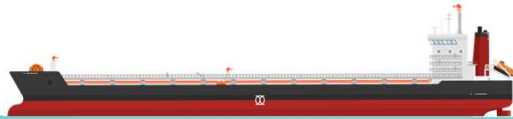
The hydrogen demand alone by 2050



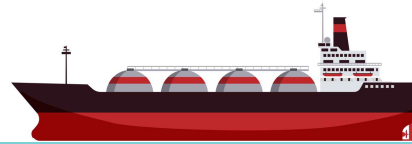
Shipping will be a **MINOR** player in the Hydrogen demand by 2050 but a **KEY ENABLER** to transport these fuels.

Shipping Transports

50%
of future-fuels
trade to be shipped



36%
of the worlds
energy

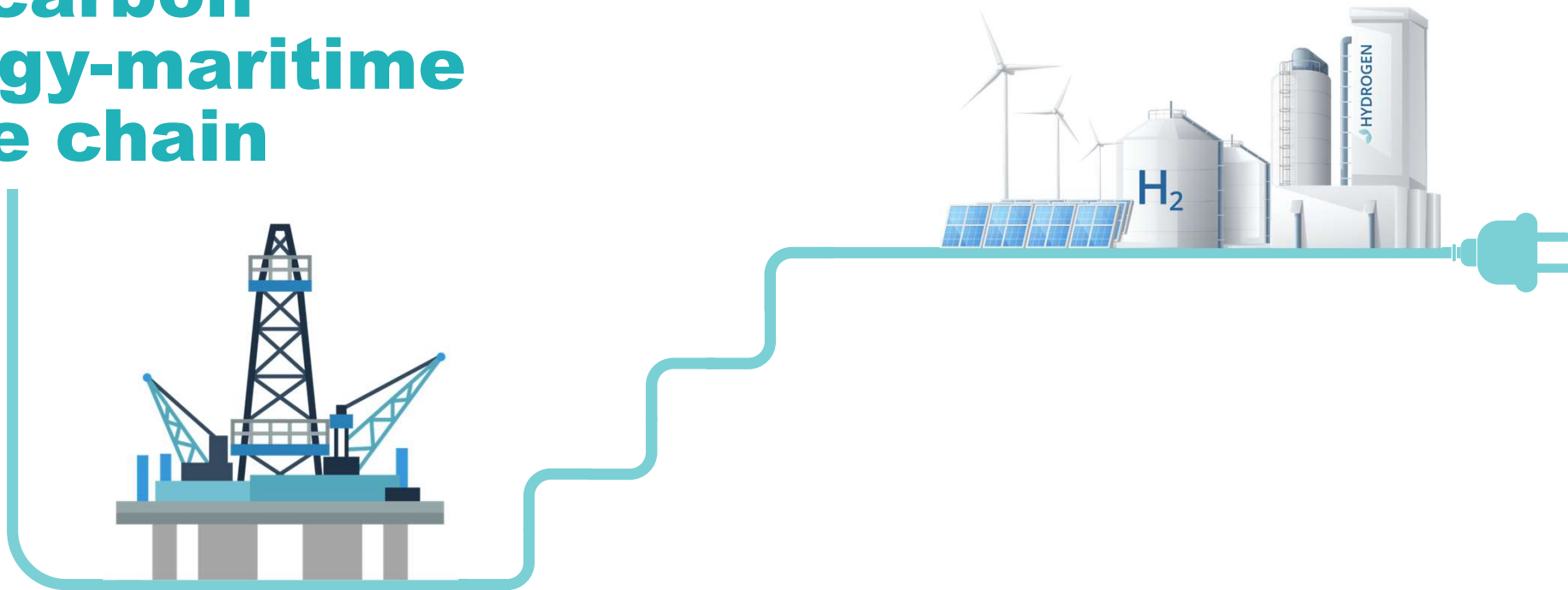


80%
of global trade



- 💡 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**

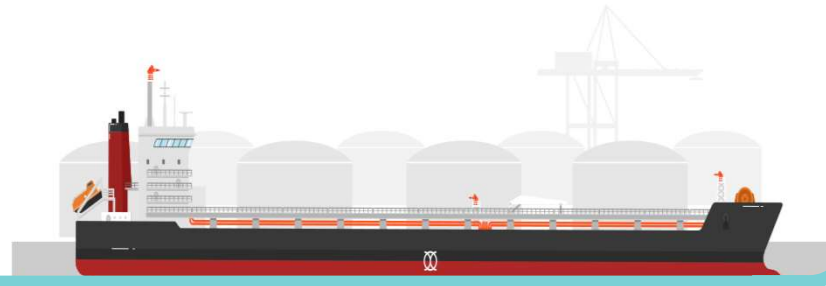


This means transitioning from a mostly fossil-fuel energy-maritime value chain to a low-carbon energy-maritime value chain, modifying production, storage, transport and import infrastructure

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

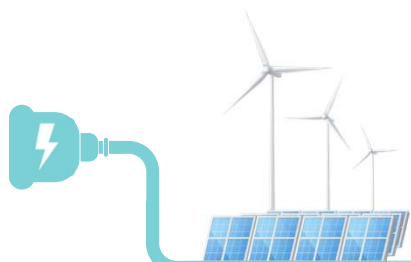
Strategically located for connection with the maritime sector

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

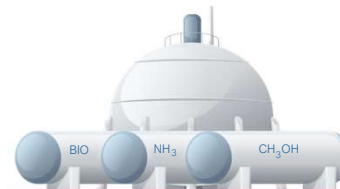
Offshore Wind, Onshore Wind & Solar



Water Electrolysis

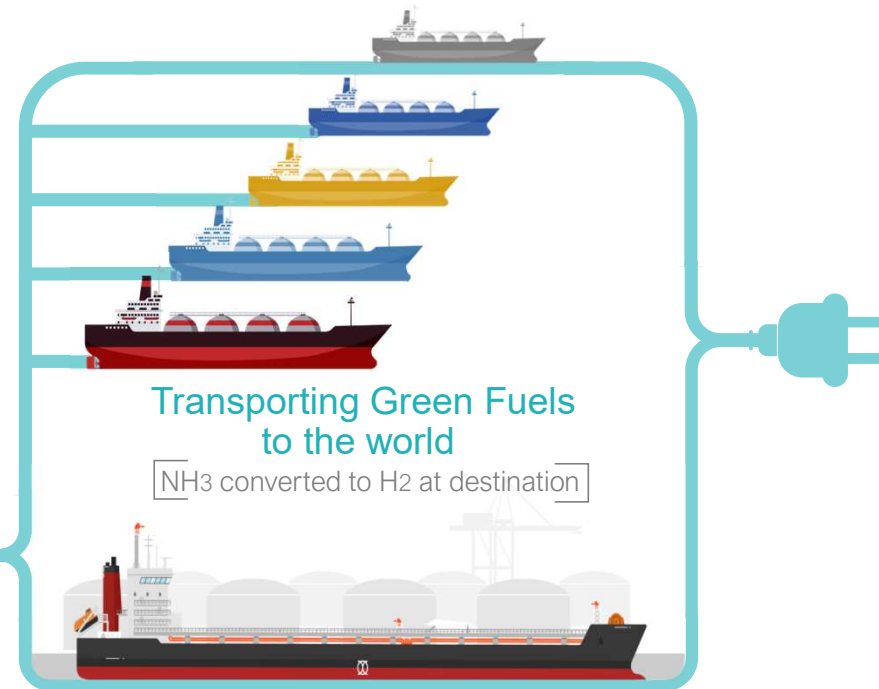


Hydrogen Storage



Converted

Green Ammonia
Green Methanol

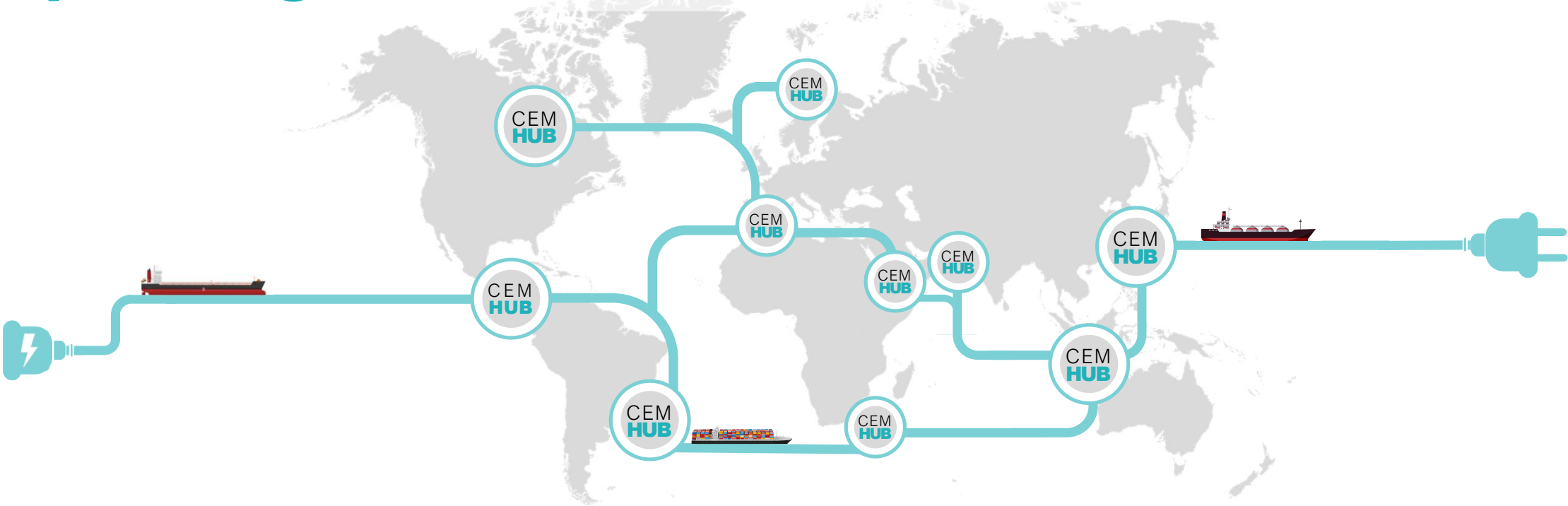


Transporting Green Fuels to the world

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**

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



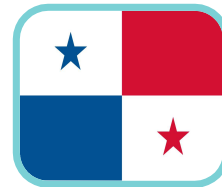
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Co-leading Governments



Six supporting governments



Canada

Norway

Panama

UAE

Uruguay

CONTRIBUTIONS



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- 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)



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