



WHEN TRUST MATTERS

Maritime Alternative Fuels: Availability & Cost Trends

Discussion Starter

Merten Stein

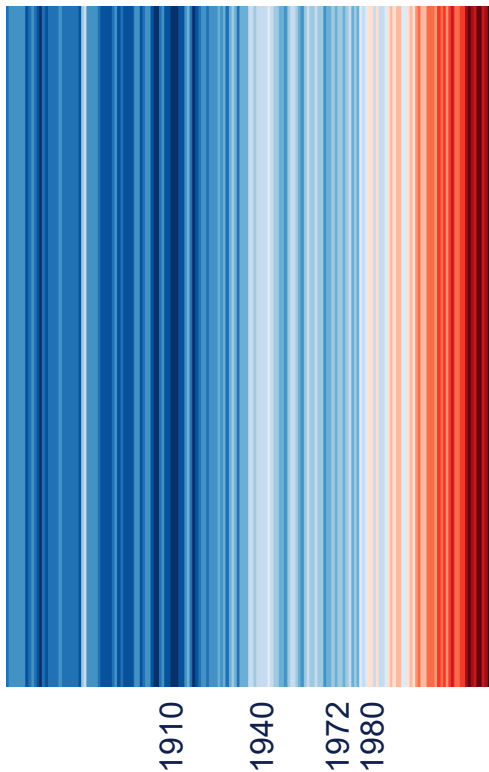
02 June 2026



MARIKO

It's getting hot in here – but regulation lags insight

Global temp. change 1850-2024



Shipping industry 2026

- Transports >80% of global cargo
- Represents ~3% of global GHG emissions
- 2,000 of >60,000 ships have dual-fuel capabilities
- >99.5% of fuel burnt today is fossil
- CO2 emissions have not peaked yet

Regulations and initiatives



**European
Union**



**POSEIDON
PRINCIPLES**



**SEA CARGO
CHARTER**

Global temperature change relative to avg. of 1961-2010 (°C) -1°C to +1°C, source: University of Reading, Ed Hawkins, [#ShowYourStripes](#) website accessed Jan 14th, 2026, date range: 1850-2024, data source: UK Met Office

Decarbonization solutions and pathways



Low-carbon & Carbon-neutral fuels

High uptake in NBs, availability and price are the main challenges.



Biofuels

Most popular short- and mid-term solution, reasonable price premium, challenge is availability of sustainable biomass.



Energy Efficiency

Large experience, many new developments. great enabler of new fuels.



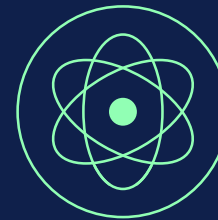
Batteries & Fuel Cells

Already used in short-sea shipping. Challenging to scale up for oceangoing vessels but promising for auxiliary power.



Onboard Carbon Capture

Promising technology. Lack of maturity, regulatory framework and infrastructure.



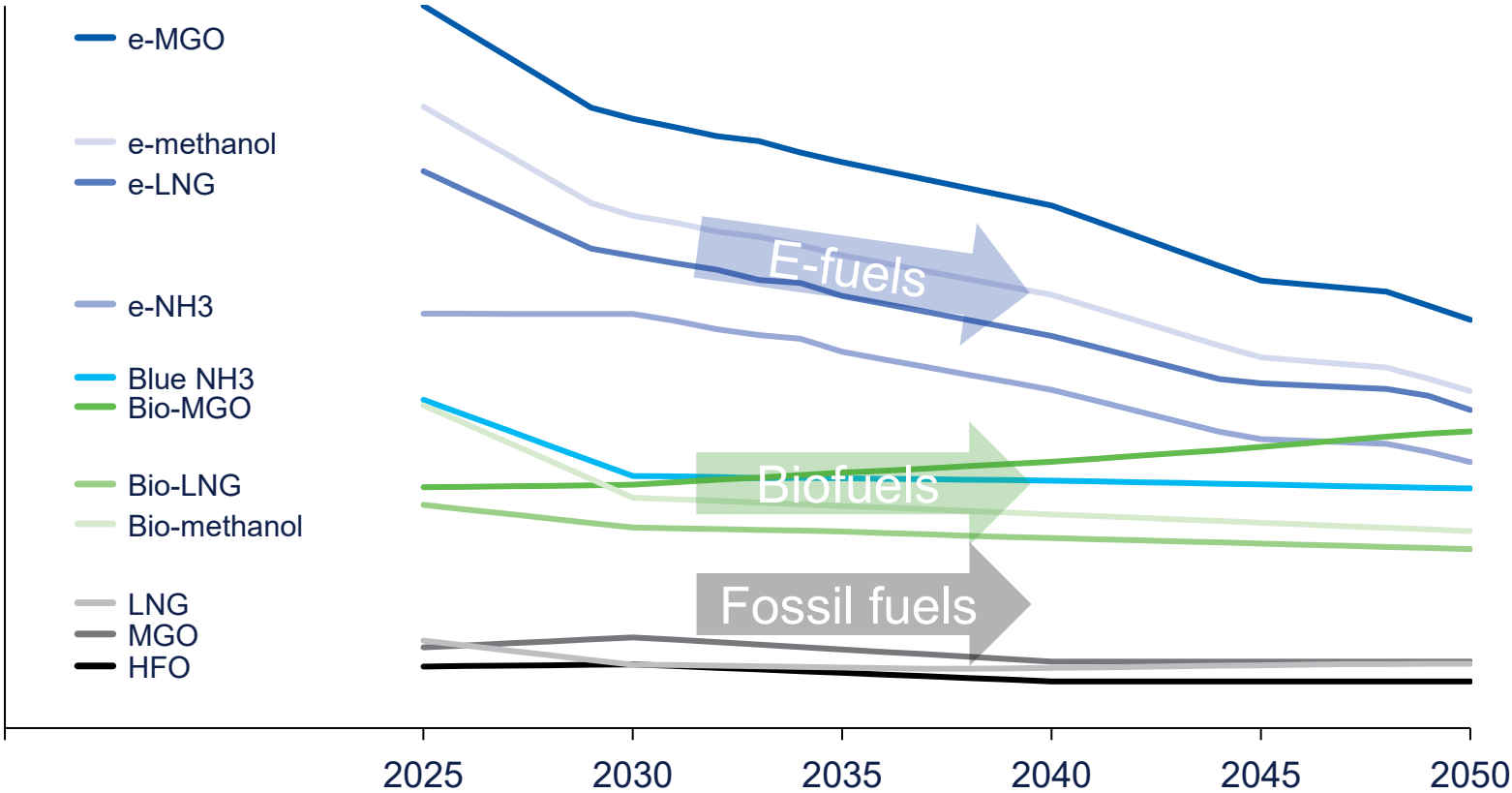
Nuclear

Carbon-neutral energy. Challenges on various aspects; technical, regulatory, societal acceptance.

Biofuels cheapest compliant future option, but scarce – e-fuels will remain expensive, except for NH3

Forecasted marine fuel cost – baseline scenario [USD/GJ]

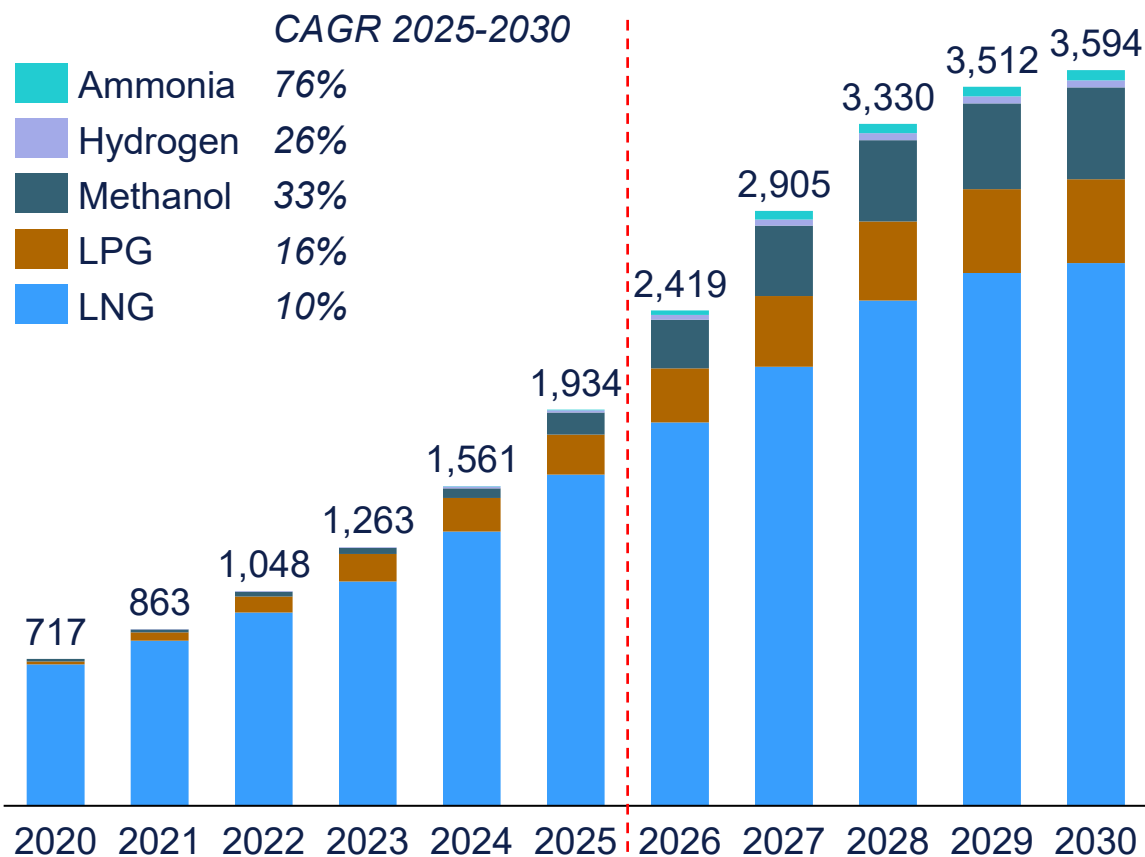
INDICATIVE TREND



Source: DNV Maritime Forecast to 2050, 2026 edition, base case scenario
Note Global median average, regional differences apply

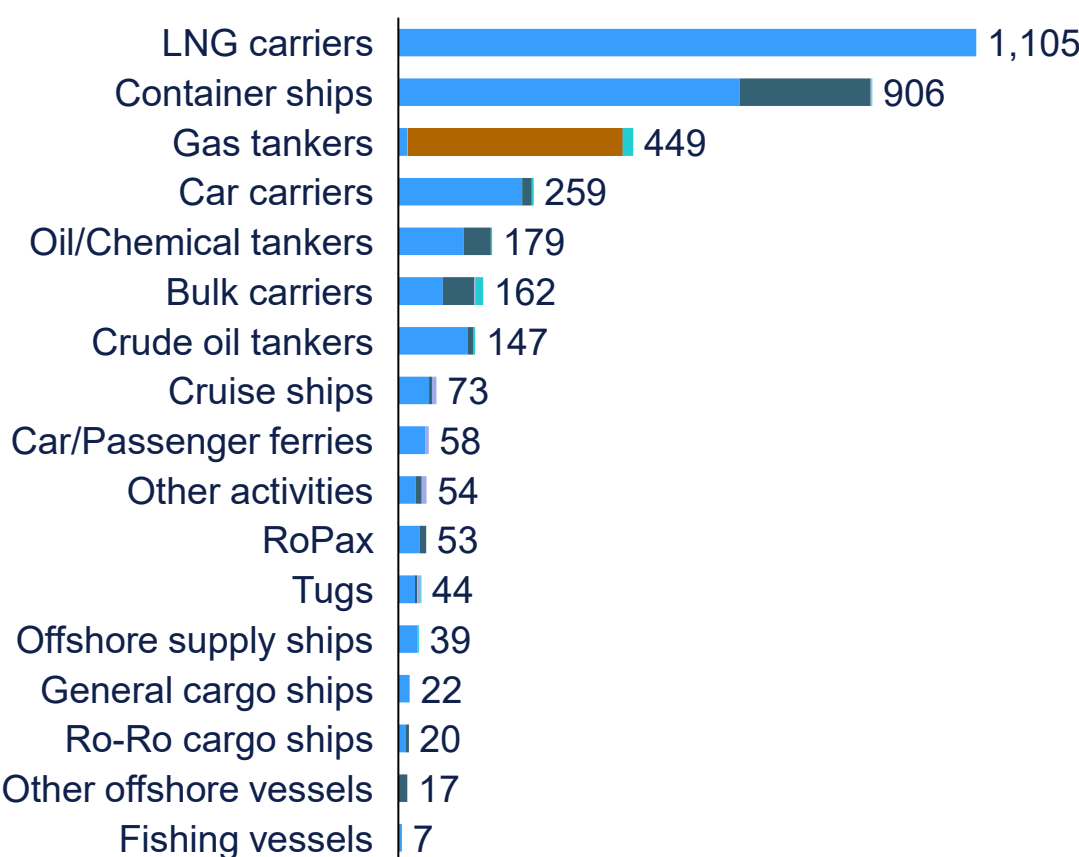
LNG is the leading alternative fuel choice today

Alternative fuel uptake by year (# vessels)

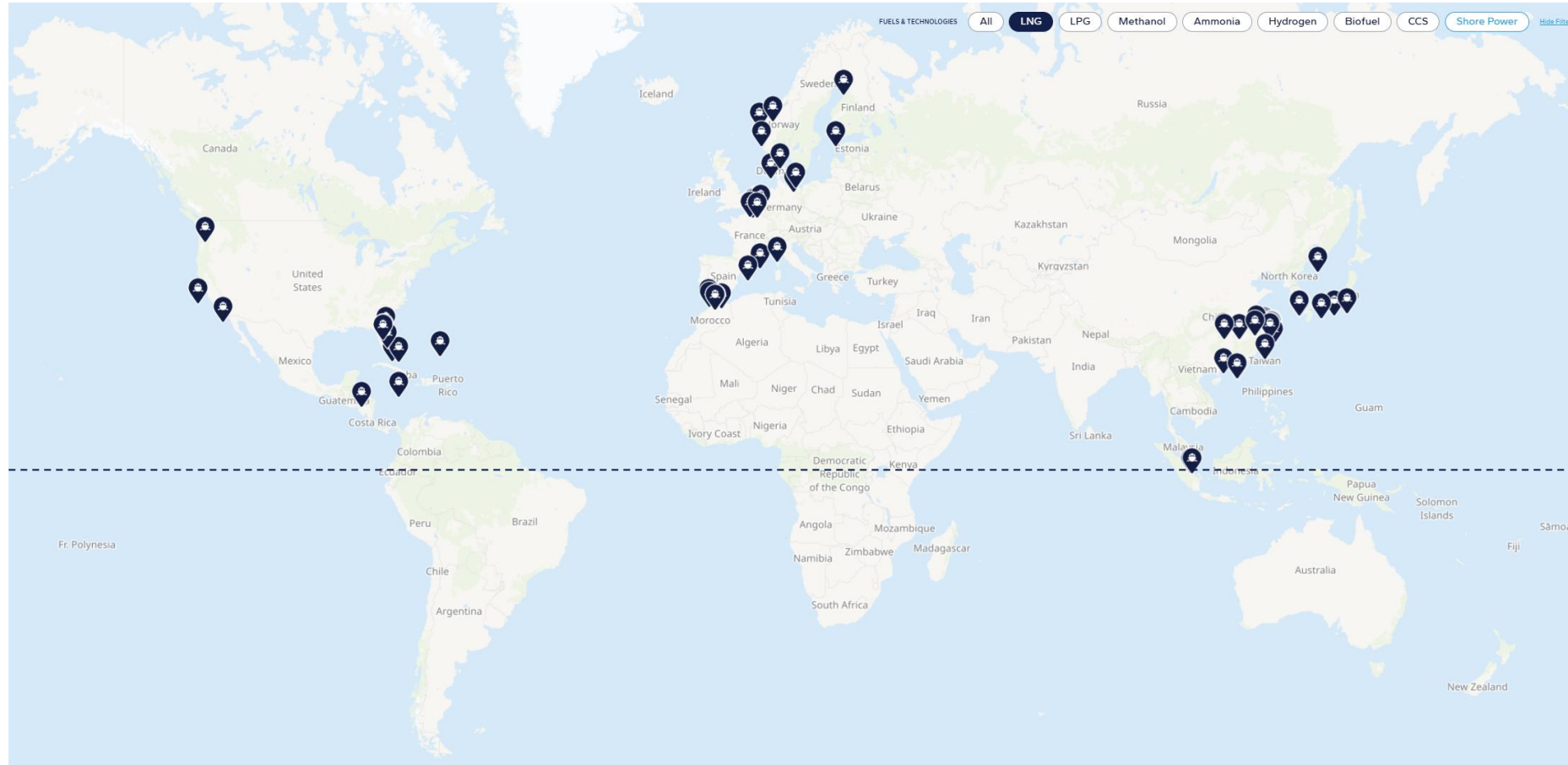


Note: In operation or on order and to be delivered until 2030
Source: DNV AFI (accessed 2026-06-01)

Alternative fuel uptake by ship type (# vessels)

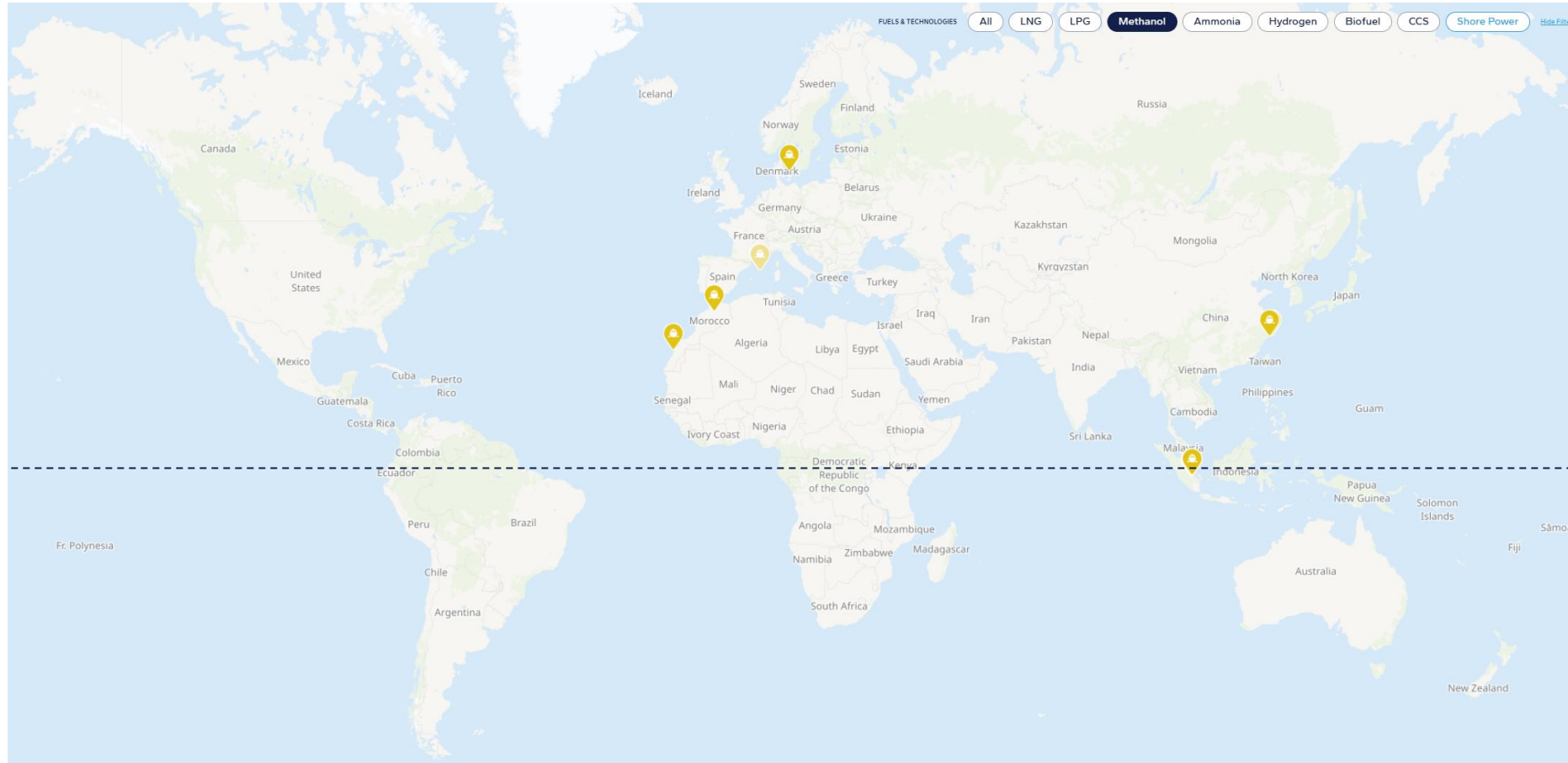


Availability: LNG bunker supply vessels – plenty on the northern hemisphere



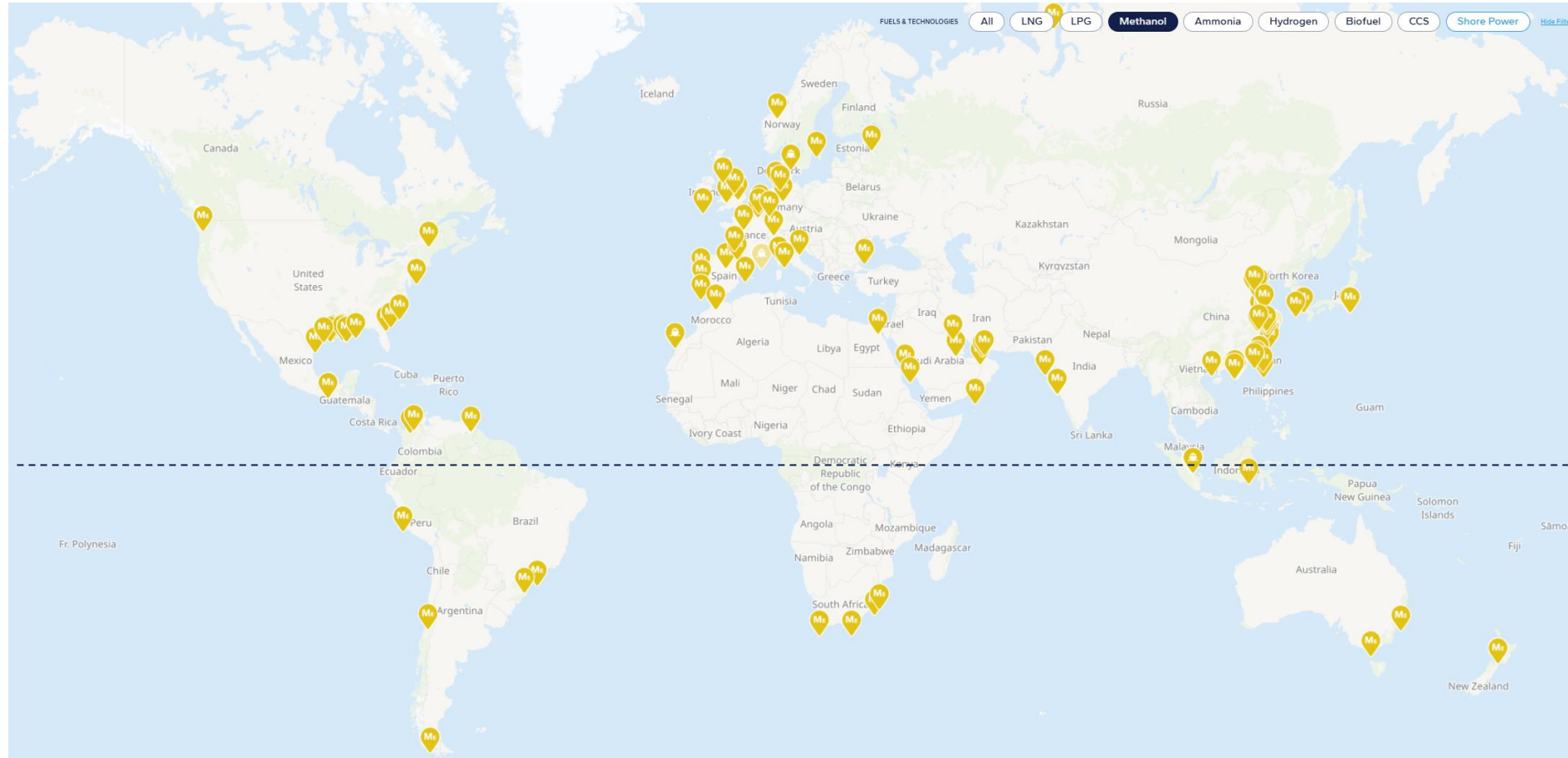
Note: In operation or decided / contract signed
Source: DNV AFI (accessed 2026-06-01)

Availability: Methanol bunker supply vessels – few but growing



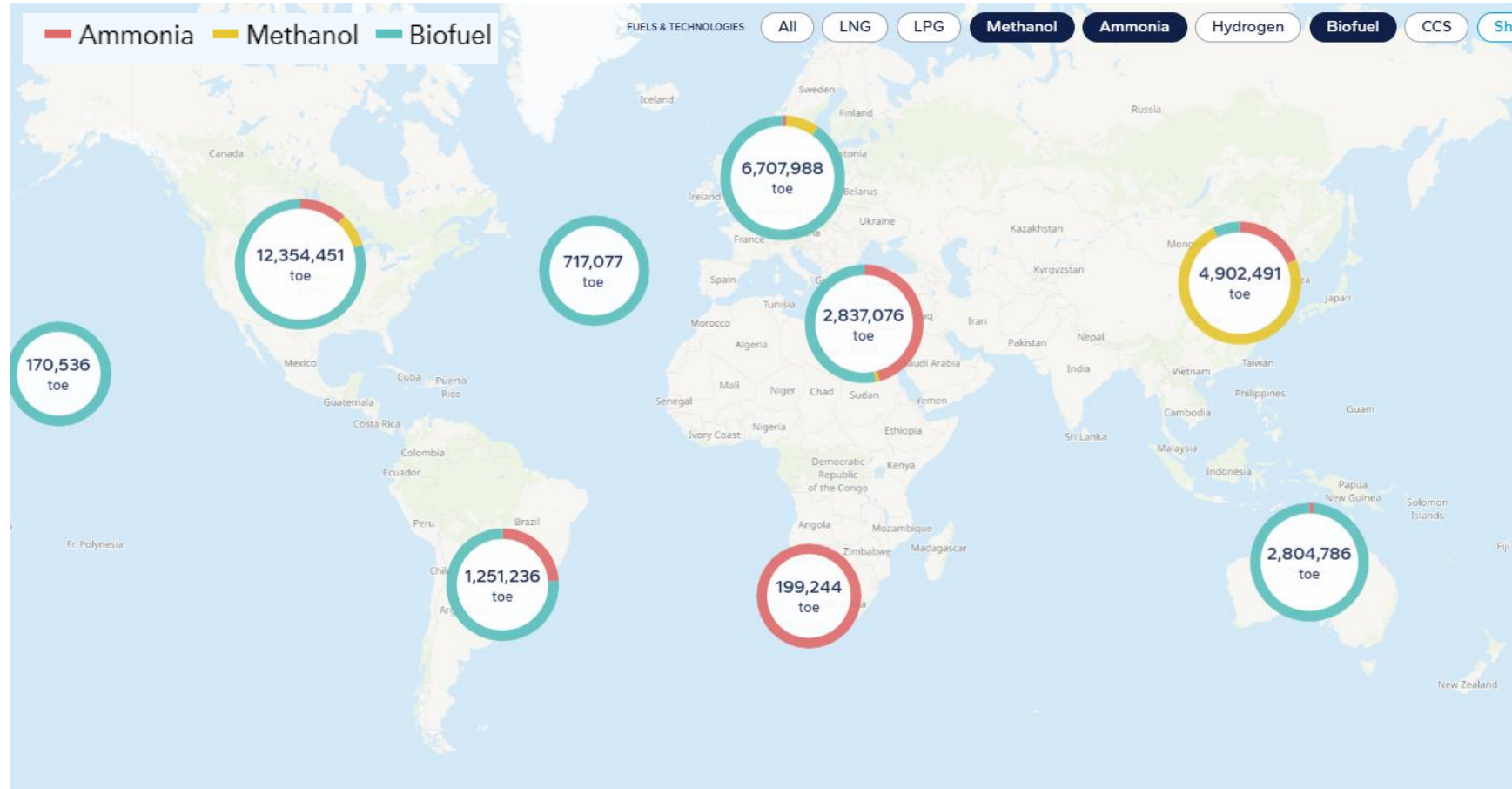
Note: In operation or decided / contract signed
Source: DNV AFI (accessed 2026-06-01)

Availability: Methanol bunker supply vessels + methanol terminals



Note: In operation or decided / contract signed
Source: DNV AFI (accessed 2026-06-01)

Fuel production capacity to all sectors visible today ~32 mn – falling short of maritime demands



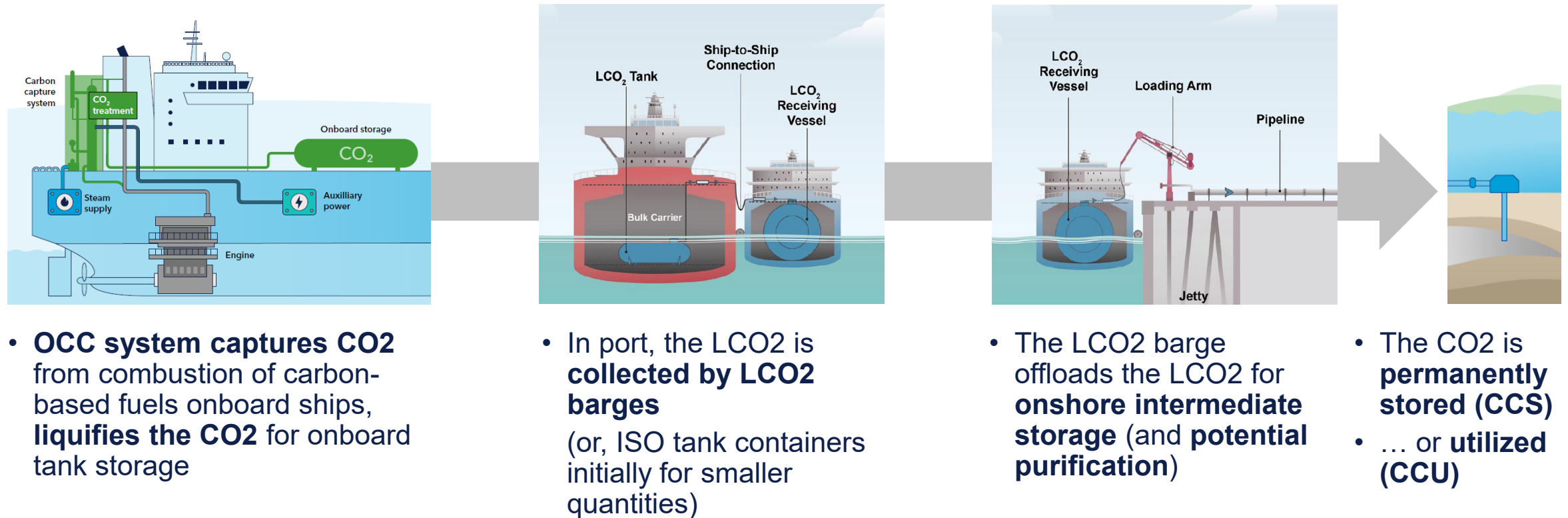
Note: In operation or decided
Source: DNV AFI (accessed 2026-06-01)

Comments

- ~32 mn tons of fuel production capacity “in operation” or “decided” are rather certain
- Additional ~210 mn tons “under discussion” are rather uncertain (not shown)
- Worth noting
 - Fuel production capacity for all sectors – shipping is only one sector, facing competition
 - Forecasted production volumes seem to have shrunk in the last yr

As “green” fuels scarce/expensive, onboard carbon capture might be needed – ports are key enablers

OCC value chain



Source: DNV “The Potential of Onboard Carbon Capture in Shipping”, 2024; GCMD “Concept Study to Offload Onboard Captured CO₂” report, 2024

Conclusion

- Decarb by 2050 is a must – **requiring IMO's Net-Zero Framework**
- New fuels needed to decarbonize. The future will be **multifuel and more costly. Still a challenge: Fuel availability**
- **OCCS** might play a role going forward
- None of the above is as cost efficient as **implementing Energy Efficiency measures**

Thank you

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Access all of DNV's publications around fuels and technologies at dnv.com/maritime/publications



Maritime Forecast to 2050,
report edition 2025



Ammonia in shipping:
Tracing the emergence of a new fuel



Safe introduction of alternative fuels: Focus on ammonia and hydrogen as ship fuels



Biofuels in shipping:
Current market and guidance on use and reporting



FuelEU Maritime:
Requirements, compliance strategies, and commercial impacts



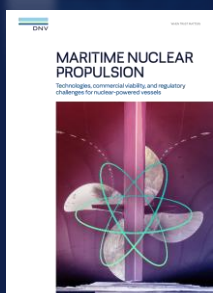
Availability of green and blue ammonia in 2030 to 2050



Alternative Fuels for Containerships:
LNG, Methanol and Ammonia



Energy-efficiency measures and technologies



Maritime nuclear propulsion:
Technologies, commercial viability, and regulatory challenges for nuclear-powered vessels



Wind-Assisted Propulsion Systems (WAPS):
How WAPS can help to comply with GHG regulations



The potential of onboard carbon capture in shipping

Don't miss our upcoming reports on:

LNG, biomethane and biogas, hydrogen in shipping
to be published in 2026