COP31 Supply Commitment to 4X SZEF Production for the Maritime Sector

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The remaining years of this decade are critical for decarbonizing the maritime sector. Integrated energy planning, accelerated action, and ambitious policy implementation are vital to keep international shipping on track to reach net-zero emissions by or around 2050. Increasing the use of scalable zero-emission fuels (SZEF) — defined within the Climate Action in Shipping report as e-fuels including e-ammonia and e-methanol — is vital to ensuring the sector achieves meaningful decarbonization before the end of the decade in line with long-term ambitions and the 2023 IMO Strategy on Reduction of GHG Emissions from Ships.

Building on the momentum established at COP30, where the Action Agenda shifted toward concrete real-economy implementation, the maritime sector is now working to translate high-level commitments into market development and deployment. **By uniting real economy actors — ports and terminals, fuel suppliers, producers, regulators, shipping companies, and cargo owners — the shipping sector can generate the supply and demand signals required to achieve at least 5% SZEF adoption by 2030 and keep the transition to net-zero emissions by 2050 within reach, in line with planetary boundaries.**[1]

The 2026 *Climate Action in Shipping* report suggests current annual SZEF production volumes for the maritime sector have potential to reach 4.2 million metric tons per year by 2030 — falling short of the goal set out by the Belém 4X Fuels Pledge.[2] Long term, SZEF demand exceeds supply in all but the report's "high" adoption scenario despite new project announcements and offtake agreements and projects under development noted within the IEA Global Hydrogen Review, an output of the CEM Hydrogen Initiative.[3]

In light of this, commitments by real economy actors to supply fuel volumes to the maritime sector in support of the Belém 4X Fuels Pledge simultaneously clear a path to achieving the Maritime 2030 Breakthrough Target for SZEF uptake (5% SZEF adoption, or 15.5 Mt HFOe by 2030). Commitments across fuel supply, production, and regulation demonstrate the coordination and momentum needed to scale SZEF deployment and achieve net-zero emissions by 2050. Supporting partners representing cargo owners, freight forwarders, and carriers can reinforce these supply commitments by aggregating and signaling the end-user demand needed to underpin offtake.

Ambition Statement

We, the signatories, commit to taking the necessary actions to quadruple SZEF production by 2035, in line with the Belém 4X Pledge on Sustainable Fuels, and accelerate SZEF uptake to at least 5%, striving for 10%, of energy used in international shipping by 2030.

This commitment brings together real world actors to elevate the sector's decarbonization activity profile and generate global demand and supply signals, working with supporting partners from the cargo owner and carrier community.

Collectively, the signatories of this ambition statement agree to:[4]

- Share experiences, best practices, and success stories through public engagement;
- Ensure that efforts to scale up SZEF be conducted in an environmentally and socially responsible manner, in line with the Belém 4X Pledge;
- Advance project development and offtake agreements supportive of the Belém 4X Fuels Pledge;

- Engage cargo owners, freight forwarders, and carriers to activate demand and connect SZEF supply with end-users, including through high-integrity book-and-claim and environmental attribute certificate mechanisms, while avoiding double-counting risks;
- Identify and address barriers to scaling production of SZEF and associated maritime demand;
- Review and report on signatory actions through transparent annual stocktakes aligned with best-in-class methodologies and established frameworks — such as the Greenhouse Gas Protocol, the GLEC Framework, ISO 14083 and ISO 19870 series; and
- Encourage governments globally to support the development of SZEF for the maritime sector through reductions to policy and regulatory barriers, support for upskilling and technical capability for SZEF across maritime and other sectoral uses, and enhanced dialogue to ensure development of market-led supply and procurement mechanisms, including high-integrity book-and-claim and other market-based approaches that strengthen demand certainty and investment.

Impacts

Through coordinated ambition and engagement between public and private organizations, the maritime sector can achieve significant global impacts, including emissions reductions and economic benefits. Notably, signatory party actions aim to collectively:

- Enable 5%–10% of all fuels used by the shipping industry in 2030 to be scalable zero-emission fuels (SZEF), the tipping point dubbed "shipping's 2030 breakthrough," to put the sector on track to meet the International Maritime Organization's 2023 GHG Reduction Strategy. Reaching this target would require approximately 0.6–1.2 exajoules (EJ) of SZEF, equivalent to roughly 15–30 million metric tons (Mt) per year of HFOe or the annual fuel demand of approximately 600–1,200 large containerships, according to the 2025 edition of *Climate Action in Shipping*. Evidence that this market is beginning to take shape can already be seen across the value chain:
    - **Scaling of SZEF production and binding fuel offtake**: Early producers and buyers are beginning to move beyond expressions of interest toward long-term commercial commitments. Examples include offtake agreements signed by ACME Green Molecules (for greater than 100k Mt of e-methanol annually), ETFuels, Goldwind (green methanol offtake with major shipping lines Maersk and Hapag Lloyd), AM Green Ammonia (for 500k+ Mt of e-ammonia), and L&T Green Energy (for 300k+ Mt of e-ammonia to support bunkering operations in Singapore). These agreements provide important demand certainty for producers, but substantially greater volumes will be needed to meet anticipated demand from the growing fleet of methanol-capable vessels.
    - **Deployment of SZEF-capable vessels and demonstration of real-world operations**: Market progress has also been made through first-of-a-kind ship deployment and bunkering operations. Recent examples include new e-ammonia/ammonia-capable vessels deployed by CMB Tech and Exmar. Bunkering operations for potential SZEF such as methanol and ammonia have been successfully executed at the ports of Shanghai, Rotterdam, Singapore, Ulsan, and Yokohama, showing the potential for real-world deployment of SZEF as supply scales.
    - **Connection of production centers, bunkering hubs, and demand**: As highlighted in the *Oceans of Opportunity* study by RMI and the Global Maritime Forum, green shipping corridors can help match low-cost green methanol and ammonia production with demand at major bunkering ports to decarbonize existing vessels. With projected methanol demand from methanol-fueled vessels alone approaching **8 million Mt** per year by 2030, integrating production, bunkering infrastructure, and vessel deployment through logistics networks will be critical to achieve the IMO's 2030 5% target.
    - **Activation of demand to support offtake and deployment**: Activation of the full value chain, including fuel producers, carriers, and cargo owners is required to share the risk and costs associated with SZEF deployment. As demonstrated by ZEMBA's second tender, voluntary demand from cargo owners can complement fuel offtake agreements by carriers by creating the bankable demand required for multi-year SZEF offtake agreements with delivery as soon as 2027. Supporting ecosystem infrastructure such as Katalist, the not-for-profit maritime book-and-claim registry developed by RMI and the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, was used by ZEMBA members and supports the ongoing connection of voluntary cargo owner demand for low-emissions shipping with emerging SZEF supply.

- Yield corresponding environmental and social benefits, in line with objectives of the Belém 4X pledge.
- Mobilize new project capital and additions of new SZEF-capable vessels to global order books.
- Create positive economic impact through green industrialization activity, specifically for Global South regions, including through green shipping corridors linking high potential SZEF production centers with major bunkering hubs.[5]

Signatories

RMI

Environmental Defense Fund

Smart Freight Centre

GLHA Global Liquid Hydrogen Alliance

ZESTAs.

ZEMBA ZERO EMISSION MARITIME BUYERS ALLIANCE

GH2 Green Hydrogen Organisation

The Decarb Hub LR

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Endnotes

1 The maritime shipping sector's Shipping Breakthrough represents the use of between 5% and 10% of SZEF by 2030 to reach net-zero emissions by 2050, as represented in the *Climate Action in Shipping* 2026 report.

2 The Belém Sustainable Fuels Pledge is based in the International Energy Agency's *Delivering Sustainable Fuels* report.

3 The 2026 *Climate Action in Shipping* report indicates despite a decline in announced supply projects in 2025, meeting the 2030 breakthrough goal remains feasible with an acceleration of project final investment decisions. An example of a recently-announced agreement and executed offtake agreement comes from Jera's November 2026 agreement with AM Green to enable ammonia-operated vessels from Japan.

4 Nothing within this document or ambition statement shall constitute a formal commercial agreement or responsibility to another signatory.

5 Resources on development of SZEF supply chains include the Lloyds Register Maritime Decarbonisation Hub's *Building the Sustainable Maritime Fuel Supply Chain* 2026 report.