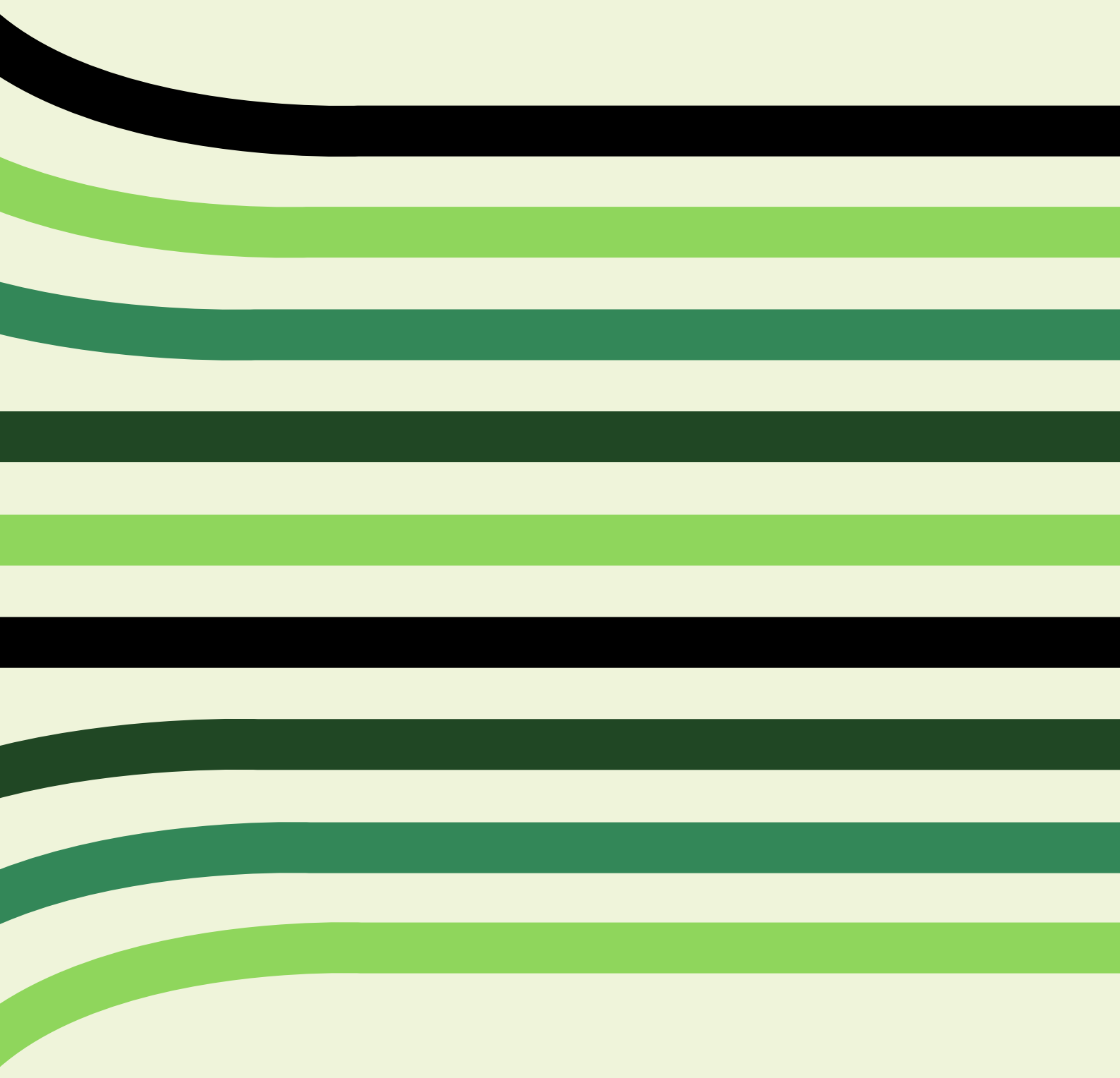


A Call to Action

# Green Hydrogen and Green Shipping

Amplifying the Power of  
Hydrogen in a Just and  
Equitable Transition



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# The Context at COP 29 and our call for further action

**The maritime industry is at a crossroads**, awaiting the Marine Environment Protection Committee's (MEPC83) milestone convening in April 2025, where mandatory measures will be agreed to achieve the International Maritime Organization's net zero by 2050 goal.<sup>1</sup> The meeting will lead to crucial decisions related to global fuel standards, flexibility mechanisms, greenhouse gas (GHG) pricing mechanisms, and revenue disbursement policies. These decisions must also ensure the transition is just, equitable, efficient, and cost-effective.

The consequences for the industry can not be overstated. **This milestone will influence the fuel mixes of the future**, set the **pace of off-take and investment**, and **either diminish or raise barriers to entry** for new fuel-producing nations.

## The need for hydrogen-derived fuels

**Hydrogen production** – with an emphasis on those pathways considered “renewable” or “green” – **must roughly double** (compared to today's committed capacity) in order to meet the expected global demand levels in 2030 for a 1.5°C-aligned pathway.<sup>2</sup> It is estimated that positioning the global shipping sector on the same 1.5°C-aligned path requires the use of green hydrogen-derived fuels starting in the middle of this decade,<sup>3</sup> with a minimum of a green hydrogen target of 5 million tonnes by 2030 to achieve a 5% uptake of scalable zero-emission fuel (SZEF)<sup>4</sup> and 11 million tonnes (Mt) per annum of green hydrogen to achieve a 10% uptake, growing rapidly to up to 90 million tonnes by 2040.<sup>5</sup>

Longer term, a decarbonized global shipping sector will become one of the largest demand sources for green hydrogen, projected to account for approximately 15 percent of total green hydrogen demand by 2050, providing a clear long-term dependable demand signal to the industry.<sup>6</sup>

**Fortunately, this provides an opportunity to engender a just and equitable transition for the maritime sector.**

Many developing nations are uniquely positioned with key advantages that give them a powerful edge in the booming green hydrogen industry.<sup>7</sup> Scaling green hydrogen production for maritime fuels offers developing countries the ability to attract capital to build state-of-the-art ports and establish scalable zero-emission fuel production export industries. Moreover, it allows for the opportunity to create highly skilled jobs, diversify economies and domestic energy supply chains, and improve energy security outlooks by reducing reliance on imported fossil fuels.

**Investing in green hydrogen production in developing countries creates a unique chance for the maritime value chain to not only be a leader in climate change but also to advocate for a just and equitable energy transition.**

1 [Revised GHG reduction strategy for global shipping adopted](#) (2023, July), International Maritime Organization

2 [Shipping off track to meet 5% zero-emission fuel target by 2030 as new report issues 'serious wakeup call'](#), (2024, September), Climate Champions

3 Acknowledging that bio-derived fuels will play a part in the shipping sector's energy transition as its scalability (including accounting for competition from other sectors) allows.

4 A 5% uptake of SZEF equates to around 29.8 Mt of ammonia or 28.1 Mt of methanol.

5 Five percent zero emission fuels by 2030 needed for Paris-aligned shipping decarbonization. (2021, March). Getting to Zero Coalition.

6 [Making the Hydrogen Economy Possible. \(2021, April\). Energy Transitions Commission.](#)

7 [The Africa hydrogen opportunity for a just transition \(2024, March\). Hydrogen Council](#)

**Ensuring a policy design that will support hydrogen-derived scalable zero-emission fuels (SZEFS)<sup>8</sup> (especially in the short to medium term) is paramount – and still possible.**

In fact, the International Maritime Organization commissioned a [Comprehensive Impact Assessment](#) to evaluate the swathe of regulatory proposals under consideration. This set of reports analysed both the impact on fleets (e.g., changes in costs associated with owning and operating ships), and the impacts on states (e.g., changes in trade volumes, GDP, and consumer prices as a consequence of the policies).<sup>9</sup> The results show that scenarios with a high GHG price, a GHG fuel standard, and subsidies for SZEFS had lower long-term transport cost increases than those without early support for SZEFS. The results also showed that generally, transport cost increases are regressive – they affect lowest-income countries the hardest. But, if a portion of revenues are used to address delivering a just and equitable transition, targeted in the countries with the most negative economic effects, the outcomes can be less regressive.

### 3

## Actions Since COP28

Building on the momentum created by the COP27 Call to Action and amplified by the COP28 Statement,<sup>10</sup> a number of key steps have been taken:

- Ship owners are taking deliveries and placing further orders for dual-fuel, zero-emission ships. **Around 300 dual-fuel methanol vessels have been ordered, and around 40 vessels have been delivered or are in operation.** Yet, that is still “not on track” as defined by industry observers. A rapid acceleration of planning and ordering on the fleet size is needed.<sup>11</sup>
- Twenty more governments – **for a total of around 60** – have now formulated national hydrogen strategies primarily for supply/production,<sup>12</sup> but also in some cases referring to demand/use.
- There has been continued and rapid growth of production/supply project announcements, both intended projects and investment. The production scenarios are increasingly clarifying, with certain projections showing a clean hydrogen pipeline of **48 million tonnes by 2030.**<sup>13</sup> However, the volumes available specifically for maritime decarbonization use remain unclear and constitute a large part of the uncertainty of supply.
- There are clear commitments by governments both to support end use,<sup>14</sup> and furthermore, end use in lower-income countries.
- Cargo-owner alliances have taken more concrete actions in securing tenders for zero-emission-fueled shipping services.<sup>15</sup>

8 Including ammonia and methanol or other fuels that meet the Life Cycle Assessment guidelines which are currently being devised by the IMO.

9 Task 1: Literature Review (World Maritime University); Task 2: Assessment of Impacts of the measure of the fleet (DNV); Task 3: Assessment of the Impacts of the measure on States (UNCTAD); Task 4: Complementary qualitative/quantitative stakeholders' analysis including relevant illustrative case studies (Starcrest); Task 5: Identification of areas of missing data, quality assurance and quality control (QA/QC), uncertainty and sensitivity analyses and integration between various tasks (nominated external reviewers by members of the Steering Committee).

10 [Call to Action at COP27; Call to Action at COP28](#)

11 [Climate Action in Shipping: Progress Towards Shipping's 2030 Breakthrough, 2023. UMAS and UN Climate Change High Level Champions](#)

12 [What Do National Hydrogen Strategies Tell Us About Potential Future Trade?, \(2024, May\), Centre on Global Energy Policy, Columbia University](#)

13 [Hydrogen Insights 2024, \(2024, September\), Hydrogen Council](#)

14 [U.S. Department of Energy Seeks Independent Entity for New Demand-Side Initiative to Accelerate Clean Hydrogen Economy \(2023, September\), Office of Clean Energy Demonstrations.](#)

15 [Zero Emission Maritime Buyers Alliance reveals winner of first tender \(2024, April\), Sam Chambers](#)

## Key Recommendations

As we approach the halfway point of this decisive decade, we are at an inflection point. **Cross-sectoral action and international cooperation** have increased significantly in the past twelve months, but **must now be strengthened** and move **away from announcements and feasibility studies** to increased tangible **action and investment**.

We believe this requires **faster and bolder action**. This can be achieved by technological innovation, strong policies, and collaboration across the value chain, leveraging what has emerged as a clear opportunity for the shipping sector and green hydrogen producers to mutually reinforce each other's actions.

**We are setting forward the following recommendations the shipping industry can deploy to help support this outcome:**

- Engaging across the value chain, but particularly with key industry forums and member states
- Providing evidence that key milestones for practical use of **SZEFs are already advancing**, which can create and build positive sentiment
- Emphasising that **certainty of supply of SZEF at scale is a function of the IMO's measures**
- Understanding that the **equitable and energy transition are coupled (both are needed and they mutually reinforce each other)** and need the same solution for policy design (a universal levy and GHG price such as 100–150 USD/tonne coupled with a GHG fuel standard,<sup>16</sup> or a policy specification able to achieve equivalent energy transition and equitable transition outcomes).
- **Supporting a balanced approach to revenue distribution in IMO's net-zero framework** – with equal attention to equity between states, stimulus of SZEF, and a mechanism that serves to narrow the price gap. All of these should work together to maximise synergies wherever possible.

In particular, **close collaboration between green hydrogen producers, shipping actors and policymakers** – *exemplified by these joint statements* – is therefore vital to invigorate the confidence of actors on the ground – whether national governments or ports – to further build the enabling conditions and investments that will deliver the transition.

**The signatories of this joint statement include some of the largest and most influential green hydrogen producers and actors in the maritime value chain.** Through our collective action and cross-sector cooperation we are committed to ensuring shipping's zero-emission transition happens smoothly and swiftly.

<sup>16</sup> From the ISWG-17 Proposals. The EU, Japan and Korea have proposed US\$100/tCO<sub>2</sub>e and a number of Pacific Islands and Belize have proposed US\$150/tCO<sub>2</sub>e, on the basis that this level of GHG price, in combination with revenue use both for reward for zero and near-zero GHG emission fuels and for contributing to a just and equitable transition, is required to achieve both the energy transition and equitable transition objectives. Furthermore, as part of the Comprehensive Impact Assessment, Task 2 and Task 3, led by DNV and UNCTAD respectively, and referenced in footnote 9, analysed the effects of a GHG price starting at \$30/tCO<sub>2</sub>e and \$150/tCO<sub>2</sub>e respectively. Policy scenarios analysed at \$150/tCO<sub>2</sub>e were consistently found to have a lower cost of abatement and lower negative GDP impacts (they more effectively incentivised both an energy transition and equitable transition).

## Our Commitments

We, the undersigned members of the global shipping sector, **are committed to full decarbonization of the maritime sector, meeting the goal of at least 5% while striving for 10% of energy used with zero or near-zero GHG emission technologies, fuels, and/or energy sources in 2030**, providing a dependable and ambitious demand signal that will help catalyse investments in at-scale green hydrogen production. In turn, we, the undersigned members of the green hydrogen value chain, will provide at-scale green hydrogen/hydrogen-derived fuels to ensure an affordable and minimally disruptive transition for the global shipping sector.

More specifically:

We, companies that work across the shipping value chain, are committed to **supporting ambitious IMO mandatory measures** with shared disbursement of revenue that help bridge the cost gap between fossil fuels and hydrogen-derived fuels and contribute to a just and equitable transition.

Similarly, we **commit to sharing knowledge and lessons** as we advance this transition – publishing reports and key findings to accelerate the transition and reduce the costs of learning.

We all commit to **participating in public/private platforms, initiatives, pilot projects, and demonstrations** that help further incentivize the production and off-take of green hydrogen and hydrogen-derived fuels across all geographies represented in this Call to Action.

- We, **ship owners and operators**, will:
  - Seek to increase investments in vessels capable of operating on fuels that offer the most significant emission reductions (at least 90% reductions compared to fossil fuels on a well-to-wake basis);
  - Use green hydrogen-derived fuels to support the development of a nascent market, which can be produced in both developed and developing countries to further a just and equitable transition; and
  - Invest in training and upskilling our workforce for operating zero-emission vessels.
- We, **financiers**, will:
  - Support investments in dual-fuel vessels (specifically powered by green hydrogen-derived fuels) and port infrastructure for bunkering of green hydrogen-derived fuels; and
  - Facilitate access to capital in developing economies for fuel developers and reduce the transaction cost of accessing capital.
- We, **ports and port service companies** (storage, distribution/logistics and supply/bunkering players, bunker suppliers, storage terminal operators), will:
  - Support investments in green hydrogen (hydrogen-derived fuel) infrastructure; and
  - Establish safe bunkering protocols to ensure port and community readiness for green hydrogen-derived fuels.
- We, **equipment manufacturers**, will:
  - Accelerate the RD&D efforts of machinery and equipment that enables on-land and onboard use of green hydrogen and hydrogen-derived fuels; and
  - Commit to training initiatives in developing economies for green hydrogen plant construction and maintenance to ensure servicing is available in both developed and developing economies.
- We, **cargo owners**, will:
  - Commit to only procuring zero-emission shipping services powered by zero-emission fuels by 2040;
  - Aim to participate in a larger number of platforms, pilot projects, and initiatives out of developing economies; and
  - Develop “Scope 3” GHG emission reduction strategies and commitments.
- We, **green hydrogen producers**, will:
  - Commit to supply sizable shares of the “striving” 11 million tonnes 2030 production target for use by the shipping sector; and
  - Commit to supply 50% of the required volumes out of developing economies by 2030.

**We are confident these collaborative actions will have lasting implications for both shipping and green hydrogen, as well as for the global climate.**

## Our Call to Action In Support of These Commitments

Recognizing the current status and key needs, we also call on national governments and the International Maritime Organization (IMO), which regulates international shipping, to match and support our actions and help us collectively maximise the success of the 2030, 2040, and 2050 goals of the IMO's 2023 GHG Strategy, and minimise the cost of shipping's transition. We call for:

### Call for IMO and Multilateral Policy

- **The IMO and member states must adopt an ambitious mandatory measure package in 2025** for entry into force in 2027.
- The key specifications of measures affecting investment decision-making must be clear in 2025 and not postponed to guidelines developed in 2026.
- The measure package must include a GHG Intensity fuel standard on a well-to-wake basis that is aligned to the IMO's 2030 and 2040 WtW GHG reduction objectives, and with a strong penalty for non-compliance.
- The IMO and member states must **adopt a universal and sufficiently-priced** (e.g., such as \$100–\$150/t WtW CO<sub>2</sub>e,<sup>17</sup> or a policy specification able to achieve equivalent energy transition and equitable transition outcomes) **GHG pricing mechanism, a levy**, in combination with the GHG Fuel Standard, as the most appropriate mechanism to achieve both a cost-effective energy transition and a just and equitable transition (as evidenced through IMO's Comprehensive Impact Assessment).
- Rewards for new fuels must be clear and predictable and recognize that different fuel production pathways may need differing levels of reward.
- Similar prioritisation should be given to both **energy transition** (incentivizing early adoption and RD&D of SZEf/hydrogen-derived fuels) and **equitable transition** in the design of IMO's net-zero framework and specification of revenue distribution – there should be no competition between these equally important objectives.
- Lower-income countries with strong technical potential to be early adopters and drivers of energy transition must be given the means to do so.

### Call for National Policy

- **National governments must align supply-side policy incentives with demand policies** and ensure access to these for maritime actors, including mechanisms to provide **long-term price certainty for producers** while reducing risk for offtakers (e.g., H<sub>2</sub> global).
- **There should be alignment of national, regional, and global standards for well-to-wake GHG accounting frameworks and sustainability criteria** that focus on cost-effective absolute emission reductions.

<sup>17</sup> Pricing at this level implicitly includes a partial feebate with reward for e-fuels set sufficiently.





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## Supporting Organizations



## Facilitated in Collaboration with:



Supporting organisations and initiatives support the content and objectives of the Statement, but this support does not imply commitment by these organisations/initiatives' member and partner companies to undertake specific actions or hold specific positions, except in the case where the member company endorses the statement individually.

