1. Transitioning Energy, Industry and Transport **Plan to Accelerate Decarbonizing the Maritime Sector**

Axis: 1 Energy, Industry and Transport
Key objective: 2. Accelerating zero♂and low emission technologies in hard-to-abate sectors
Solution: Decarbonizing the Maritime Sector
Host initiative: Green Hydrogen Catapult (GHC)
Action / Committed Initiatives: IMO, Getting to Zero Coalition (GtZ), Zero-Emission Shipping Mission (ZESM), ZEMBA, ICCT, Sustainable Freight Transport Framework (UNCTAD), Kuehne Climate Center, Environmental Defense Fund (EDF)
Interested Initiatives: CEM Future Fuels, Global Biofuels Alliance, Hydrogen Breakthrough, IEA Bioenergy Task 39, COP29 Green Energy Zones, Green Ocean Energy Alliance,Scope:

- Geographic: Global
- Sectoral: International Shipping and Maritime (and its relation to land-side energy transition)
- Other aspects: Landside-related energy production, supply and distribution facilities, including on-shore power systems; zero-near-zero fuels (ZNZ) and non-emitting propulsion systems; Just and Equitable Transition (JET); cargo emissions reduction technologies such as refrigerated maritime transport; mitigation measures; and public and private finance.

Levers assessment: *(each lever is described in the guidance document)*

- **Risk-informed decision-making:** Low maturity
    - *Rationale: For specific aspects of the maritime ecosystem, such as zero and near zero fuels development, there are clear risk profiles inherent in technology selections to minimize stranded asset risk and over-competition or reliance on maturing technology pathways like biofuels.*
    - *Given the range in solution pathways it is difficult to assess for the global maritime sector as a whole; it depends on technology/element/stakeholder/perspective on a specific trade route perspective.*
    - *Ports are looking into wide infrastructure changes and financial costs, and have since October 2024 be able to make a self-assessment on their readiness for handling new fuels - via the International Association for Ports and Harbours' digital: Port Readiness Level Tool (further information: https://mission-innovation.net/missions/shipping/port-readiness-level-prl-framework/).*
- **Technology shifts[1]:** Medium maturity
    - *Rationale: Biofuels and other enabling fuels for achieving net-zero by 2050, like green methanol and ammonia, are still at varying degrees of maturity and face a significant cost gap relative to fossil fuels. The scale of the global shipping industry will require deployment of a suite of solutions over time–for example, ranging from biogas to e-ammonia to wind propulsion and ship-to-shore power. Further outlined here. From pilots to practice: Methanol and ammonia as shipping fuels \| Global Maritime Forum*

[1]Synergies with the Sustainable Fuels PAS and Hydrogen PAS

- *Technology improvements through efficiency gains, as well as technology shifts with the use of emerging zero-near zero fuels, have the potential to bring high impact solutions to market quickly, and at scale with proper capital availability.*
- *Onshore power and low GWP refrigerants are established technologies, just not deployed at scale in international maritime transport*
- *Onboard ship technology - in particular, engine development - is a higher maturity, and both methanol and ammonia engines are commercially available on the market*
- *There is a risk in setting up non-scalable near zero-emission fuels production to get started with the green transition. While the use of these fuels will be a beginning to start impactful GHG reductions, lock-in risks might make it more difficult to unlock economies of scale for scalable zero-emission fuel production, which is needed in order to reach the 2050-goals.*
- *The 2025 Climate Action in Shipping Report concludes that the Technology lever is partially on track for achieving the 2030 goals and details examples of specific action*

- **Knowledge & Capacity building:** High maturity
  - *Rationale: The availability of technical training, skills and institutional capabilities on a global scale is growing, but the maritime transition to net zero remains in its emergence phase. Recent years have seen the establishment of multiple global and regional institutes and initiatives focused on enabling shipping decarbonisation such as the Mærsk Mc-Kinney Moller Center for Zero Carbon Shipping, the Aspen Institute's Ocean and Climate team (secretariat of the Zero Emission Maritime Buyers Alliance), the Global Maritime Forum's decarbonization initiatives, RMI's Maritime Decarbonization initiative, Global Maritime Center for Decarbonization and several others.*
  - *Industry knowledge of required steps for decarbonization is medium-to-high, albeit constrained by current financing structures and regulatory drivers enabling the business case to drive action at scale. Knowledge sharing and workforce development are key, especially in developing countries that have the potential to play a big role as fuel producers or bunkering hubs for ZNZ fuels.*
  - *The Green Shipping Corridor Hub developed by the Zero-Emission Shipping Mission was launched at the end of 2023 - as the only one-stop shop on green shipping corridors. It gathers a corridor routetracker, a potential collaboration matchmaker tool, and several studies of relevance to corridor knowledge sharing, and since its launch has been frequented by industry and organisations.*
  - *The Maritime Just Transition Taskforce has developed the baseline training framework for seafarers in decarbonization and has rolled out the first train-the-trainer with the World Maritime University and MTCC Asia. This is the start and needs to be scaled across the regions. The IMO has approved generic interim guidelines for the training of seafarers on ships using alternative fuels.*
  - *Component 2 of the IMO's GreenVoyage2050 programme specifically focuses on capacity building, national action plan (NAP) and policy development for developing economies as tools for capacity building globally.*
- **Inclusive decision-making governance & design:** Medium maturity
  - *Rationale: Organisations continue advocating for inclusive decision-making processes, increased engagement of SIDs and LDCs is evident alongside engagement from indigenous populations.*
  - *Existing partnership structures provide a framework for advancing civil society's role within maritime sectoral decarbonization activity, and provide frameworks for broader engagement with communities currently most affected by existing and planned just and equitable transition activities, as referenced in the knowledge & capacity building lever above and progress and action on the civil society lever is reported as being partially on track in the 2025 Climate Action in Shipping report.*

- *Engagement with the ultimate customers (e.g. cargo owners, importers), for example on the climate and economic impacts of the transition, could be improved.*

- **Standards & Taxonomies:** Medium maturity
  - *Rationale: Nation states and regional country groupings (e.g. EU) are setting standards for the development e.g. of e-fuels (renewable fuels of non-biological origins, RFNBOs). There is increasing alignment globally, notably due to IMO Guidelines on life cycle GHG intensity of marine fuels (LCA Guidelines). Many countries, particularly in the global majority, are seeking to harmonise standards or develop their own frameworks that enable alignment. However, standards around safety and bunkering for new fuels are still evolving and show differing degrees of maturity; similarly, standardization of government national action plans for the sector remains only partially complete among top shipping countries and Global South countries.*
  - *Industry standards - well developed for existing infrastructure and operations - may need revision or updates to accommodate safety protocols, new materials categorization, etc. to accommodate planned changes. Specifically, safety standards for using new fuels in vessels will be required, and preliminary versions are beginning to emerge from organizations–for example, the IMO has approved interim guidelines for the use of ammonia as a shipping fuel.*
  - *The safety aspect when handling new fuels for shipping and bunkering is also in focus, i.e. in the report Safety of crew when handling low/zero-emission fuels (hydrogen, methanol and ammonia) and in the study on Mapping of seafarer competence on Low/Zero-emission Ships .*
- **Supply[2]:** Medium maturity
  - *Rationale: There are a range of fuel supply solutions in the maritime sector, with biofuels already available and in use, albeit with low uptake and increasing competition from the aviation sector. Alternatives such as e-fuels (green methanol and ammonia) are highlighted within research on early stage production and trade in the 2024 Oceans of Opportunity report, which notes a growing pipeline of production projects and planned infrastructure mirroring demand-side order volume. Reaching final investment decision on production projects remains a challenge, and as a crucial part of this securing offtake over a period of time and price that suits both producer and consumer - the so-called "chicken-and-egg" problem.*
  - *Provided continuing support for early-stage feasibility and development cases - coupled with other lever utilization such as demand, finance and regulatory incentivization - means existing technology developers and first movers are more likely to reach the tipping points to achieve the scale needed to accelerate decarbonization activity to 2030 and beyond target levels.*
- **Demand:** Medium maturity
  - *Rationale: Demand is increasing for zero and near-zero fuels, but a small proportion of first movers still lead the way. The number of vessels capable of using e-fuels is increasing, with more than 40 methanol-capable vessels on the water and more than 300 on order, and additional ammonia-compatible engines coming to market.*
  - *54% of the orderbook in 2024 opted for convention fuels, this is an improvement from the year before. This shift away is a significant improvement. Further evidence of the progress in the demand lever is provided in the 2025 Climate Action in Shipping Report*

[2] Synergies with the Sustainable Fuels PAS and Hydrogen PAS

- *Despite current growth, demand needs to further increase substantially to overcome the aforementioned chicken-and-egg problem. Initiatives like the Zero Emission Maritime Buyers Alliance help to capitalise on the demand signals coming from cargo owners, but are in their early stages. The adoption of the IMO Net Zero Framework during the MEPC ES/2 October 2025 session–which was adjourned for 1 year–is an example of a regulatory demand signal needed for market clarity globally.*
- *Existing global initiatives driving international demand aggregation have high potential for scalability but require industry and capital market buy-in, as well as supply availability. Voluntary first-mover initiatives must be complemented by robust regulatory schemes to enable scale.*

Public/private finance: Low maturity

- *Rationale: There are a range of measures that national governments can take to address the cost gap between conventional marine fuels and zero/near-zero fuels as outlined here National and regional policy for international shipping decarbonisation | Global Maritime Forum. There are some significant steps being taken by governments & private financiers globally,but not enough yet to reach 2030 targets set by the sector in particular to achieve the 5% uptake of scalable zero emission fuels as outlined in the Climate Action in Shipping Report 2025, the finance lever is not on track as investment is still flowing into conventional fossil fuelled ships. (i.e. 5% uptake of scalable zero emission fuels)--further action could be achieved by leveraging existing financial mechanism frameworks for the design of new-build maritime port investments and financing, compliance penalty collection, and transition finance for developing economies. Sources exist that point to financing opportunities for green maritime investments, e.g. Mapping of Global Financial Support Opportunities for Zero-Emission Ships and Energy Efficiency - Mission Innovation. This study does not include conventional bank loans, whereas these are too expensive, and as a consequence the study a.o. showcases big gaps in finance opportunities for the green shipping transition in at least two continents.*

- **Partnerships and collaboration[3]:** Medium maturity
  - *Rationale: There have been a substantial increase in international initiatives that seek to accelerate maritime decarbonisation globally, outlined here in the context of green shipping corridors Annual Progress Report on Green Shipping Corridors 2024 | Global Maritime Forum and public-private partnerships Zero-Emission Shipping Mission - Mission Innovation. Further work needs to be done to address key challenges in decarbonising the sector, including re-skilling/training, safety, closing the cost gap and more.*
  - *Further action will be needed to fully operationalize existing initiatives through partnerships across multiple sectors and between multiple regions, i.e., between distanced supply and demand centers, for maximum impact.*
- **Policy & regulatory:** Low maturity
  - *Rationale: The 1 year adjournment of the adoption of the IMO Net Zero Framework in October 2025 makes near-term regional and national action more likely, with the risk of incompatible approaches developing without global regulatory certainty. Development of the crucial guidelines for the IMO Net Zero Framework being developed over the next 18 months will support addressing concerns at all levels. There are a range of measures that regional blocs and national governments can take to address the cost gap between conventional marine fuels and zero/near-zero fuels as outlined here National and regional policy for international shipping decarbonisation | Global Maritime Forum. Some regional and national governments have made strong progress, but many are facing critical regulatory gaps to support the development of zero/near-zero fuels for use in the maritime sector.*

[3] Potential synergies with Green Transport Corridors PAS

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- **Public opinion:** Low maturity
  - *Rationale: Public awareness of the impact of shipping emissions is low generally, exacerbated by its often lack of inclusion in the UNFCCC process (due to the mandate of the IMO) and lack of interest from national governments as a result. For countries where importing essential goods relies on shipping (e.g. SIDS), awareness of the centrality of shipping as a function (and therefore its future development) is often higher, compared to countries where shipping is only a very small proportion of a good's end cost or connectivity relies on more than seaborne transport.*
  - *Public support of industry decarbonization will be critical to driving successful adoption at a regional level, and overcoming public awareness and perception hurdles of the economic and environmental benefits of the sector remains a challenge for the industry.*

Expected impact of this plan on the 2030 targets (if any): High

Decarbonizing international shipping is a vital step toward achieving a net-zero global energy system and avoiding the most severe consequences of climate change. With over 80% of global trade transported by sea, the shipping sector accounts for approximately 3% of global greenhouse gas (GHG) emissions—a share expected to rise without urgent, transformative action.

The 2025 report, "Climate Action in Shipping, Progress towards Shipping's 2030 Breakthrough," tracks annual progress towards the target of ensuring that at least 5% of the fuel used in international shipping comes from scalable zero-emission sources by 2030, with the ambition to reach 10% and outlines the current progress and action being taken as well as highlighting key recommendations to accelerate progress

This plan targets the achievement of Shipping's Breakthrough Goals of 5% (striving for 10%) adoption of scalable zero-emission fuels by 2030 and upskilling and retraining at least 400,000 seafarers by 2030. This goal would be reflected by the use of 16MT of VLSFO equivalent in the form of e-fuels, available at 20 ports across 3 continents, and the equivalent of 600 large ocean-going vessels running on such fuels.

Key elements needed to achieve commercial maturity to achieve this goal are the adoption of key international frameworks via the IMO that enable the production and use of these fuels including in the Global South; the existence of policy incentives from first-mover countries; and increasing consolidation from the industry on technological, operational, and commercial models for zero-emission shipping.

The actions to achieve this are set out in this plan and mobilizes action through the critical levers identified below.

Focus levers of this plan:

- **Technology shifts**

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- Continued focus on fostering progress around first mover projects to explore challenges in deploying zero-emission solutions, and identify, test and demonstrate solutions and generate learnings to increase the deployment of these new green technologies in the maritime sector.
- Generating alignment around the purpose of green corridors: to drive the technology transition to 2030. Anticipated impact of green corridors delivered by the GtZ Coalition by 2030 estimates to see 50-60 zero-emission vessels deployed, with more than 500,000 tonnes of VLSFO displaced, more than 1.2 million tonnes of ZEF used by 2030. Indirect/spillover impact is much more difficult to measure.
- Continued efforts for uptake of technically viable zero- near - zero energy sources and technologies including electrification and wind assist

Knowledge & capacity building

- Continuing to roll out the upskilling and retraining programme for seafarers and port workers,
- Continuing to support developing countries in preparing their National Action Plans
- Support continued capacity-building for ports in developing countries to develop and implement alternative fuel bunkering infrastructure, ensuring compliance with international safety and quality standards, as well as establishing reliable distribution systems for domestic and export markets.

- **Inclusive design**
  - increased representation of key geographies that are underserved by global maritime collaborative efforts, and could benefit from improved access to decarbonized fuel production and port infrastructure development–both particularly essential to ensuring an equitable transition.
  - Continue to seek to ensure a just and equitable process as part of the implementation of the IMO's Net Zero Framework, which will remain a key priority through to 2030 to ensure the disbursement of revenue can mitigate any negative effects of the IMO's mid-term measures in the global majority.
- **Supply & demand**
  - Partnerships across public and private entities that could deliver both focused technical and commercial actions and open dialogue for the purposes of value chain and public-private coordination.
  - Encourage development of necessary supply chains and manufacturing/transport/port infrastructure across both supply and demand sides to enable successful transition at scale.
  - Full scale bunkering trials to take place in more bunkering hubs.
- **Public/private finance**
  - Advance consideration of more innovative commercial structures (investment vehicles, joint ventures, demand pooling etc.) to overcome barriers, share costs & risks.
- **Policy & regulatory**
  - Establish the role of national governments in delivering national and/or bilateral policy action.
  - Adoption and Implementation of IMO Net Zero Framework
  - National and Regional regulatory action to incentivise and set standards for the use of onshore power.
  - Encourage and support the development of national action plans.
- **Partnerships and collaboration**

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- Pursue collaboration across industry and governments to deliver progress on decarbonisation; leverage public-private partnerships for infrastructure development, green shipping corridor development
- Leverage existing partnerships and collaboration across public / private stakeholders to focus on action and sharing of lessons learned.

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Output	Action Scope	Action	Type of action	Implementation Lever	Responsible	Time horizon	Stakeholder engagement[4]	Committed Stakeholders
Adoption of the IMO Guidelines on the definition of Zero-near-zero fuels that aligns with a 90-100% GHG reduction on a lifecycle basis and scalable (Autumn 2026 TBC)	Global	Provide technical input into the development of the IMO Guidelines for the definition of the zero and near zero emission fuels	Existing a…	Policy & regul…	GHC, GF4GS	Novemb…	Regulators …	GF4GS, GHC
Adoption of the IMO Guidelines on the design of the reward mechanism (Autumn 2026 TBC)	Global	Provide technical input into the reward mechanism design to ensure it is simple and effective enough to allow users relying on it to best anticipate (and collect) revenues.	Existing a…	Policy & regul…	GHC, GF4GS	Novemb…	Regulators …	GHC, GF4GS
All newbuild orders to be zero-emission fuel capable to achieve 600 15,000 TEU equivalent ships running e-methanol or ammonia, or about 150 ships if other segments take up SZEF at a similar pace by 2030	Global	Identify and communicate the risks to both individual shipowners and the broader value chain of failing to order or retrofit sufficient SZEF-aligned tonnage to enable shipowners to make risk-informed decision making on new build ships	Existing a…	Risk-informed…	Kuehne Climate Center	June 20…	Multi-stakeh…	UCL
A fit for purpose and operational IMO Net Zero Fund by 2028 (TBC)	Global	Convene financial and vessel operator groups, alongside state actors, to inform potential pathways for designing the IMO Net-Zero Framework's Net Zero Fund to enable sector transition through crowding in of private capital to generate up to 5X impact by 2030.	New action	Public/private …	GHC	Novemb…	Investors	GHC

[4] Such as countries, companies, investors, cities and local governments, technical institutions, MDBs, regulators & public agencies, utilities & system operators, youth & indigenous groups, multi-stakeholders platform (non-exhaustive)

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Output	Action Scope	Action	Type of action	Implementation Lever	Responsible	Time horizon	Stakeholder engagement[4]	Committed Stakeholders
Operationalise first mover Green shipping corridors (GSC) to achieve at least 5 in operation by 2030 and at least 5% uptake of zero emission fuel by 2030.	Global	Lead or contribute to the delivery of more than five green shipping corridors to yield tangible results with first movers (e.g. vessels on the water) by 2030. Monitor and Track the progress of Green Shipping Corridors and publish an annual report (GtZ/GMF)	Existing a…	Partnerships …	GtZ	June 20…	Multi-stakeh…	GtZ
Expanded knowledge sharing from pre-feasility studies on Green Shipping Corridors completed by Zero-Emission Shipping Mission members	Global	Collect, share knowledge and disseminate learnings from Finance phases and deployment phases of Green Shipping Corridors through the Green Shipping Corridors Hub , Zero-Emission Shipping Mission public-private stakeholder network and similar channels for continued growth in number of green corridor initiatives globally and successful deployment of operational green corridors as soon as possible	Existing a…	Partnerships …	ZESM	June 20…	Multi-stakeh…	ZESM
Successful global north-south green shipping corridors from 2028+.	Global	Execution of ICCT 2026-2028 campaign focused on connecting the global north & global south.	Existing a…	Partnerships …	ICCT	Novemb…	Multi-stakeh…	ICCT
Development of an e-fuels export corridor between South America and Europe, with planning to commence in 2025 and 2026.	Bilateral, Global	Convene, by COP30, ports, vessel operators and regional governments to agree on parameters for the expected launch of a green shipping corridor for export of e-fuels between major international bunkering regions in Brazil and the Netherlands, with an in-service date TBD.	Existing a…	Partnerships …	GHC	Novemb…	Multi-stakeh…	GHC

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Improve Operational Efficiency to reduce carbon intensity by 40% from 2008 levels by 2030	Global	1. Improve operational efficiency in the bulk shipping sector, with particular emphasis on port call optimisation 2. Raise awareness and strengthen collective action on efficiency through: pilot projects, collaborative workshops, policy dialogue	New action	Technology sh…	Getting to Zero Coalition	June 20…	Companies	Members of the initiative incl. BIMCO, Blue Visby Services Ltd, Bunge SA, Cargill, Chevron Shipping Company, Copenhagen Commercial Platform, Inmarsat, NAPA, NorthStandard, Port of Acu, Port of Rotterdam, Siglar Carbon AS, Signol, Stephenson Harwood LLP, Teqplay, UCL Energy Institute, ZeroNorth
Leverage current ambitious domestic decarbonization policies and increased hydrogen production commitments to support near-term corridor formation and development of measures addressing adoption cost gaps.	Global	1. Advance at least six national / regional policy engagements/dialogues to create conditions for the shipping sector to deliver on international climate goals 2. Secure wider implementation of measures that respond to the cost gap between conventional fuels and zero/near-zero fuels.	Existing a…	Policy & regul…	Getting to Zero Coalition	Novemb…	Regulators …	Getting to Zero Coalition members

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Output	Action Scope	Action	Type of action	Implementation Lever	Responsible	Time horizon	Stakeholder engagement[4]	Committed Stakeholders
Aggregate freight buyer demand for the emissions reduction (environmental attributes) associated with clean energy-powered shipping.	Global	Mobilize collective demand for clean energy-powered shipping - 17 ZEMBA members collectively avoid at least 82,000 metric tonnes of CO2e in 2025 and 2026 by collectively procuring Hapag-Lloyd's independently certified and exclusively waste-based biomethane service.	Existing a…	Demand	ZEMBA	Decemb…	Companies	ZEMBA's 17 member companies including founding members Amazon, Patagonia, and Tchibo alongside Bauhaus, Brooks Running, DB Journey, Green Worldwide Shipping, Meta, New Balance, Nike, REI Co-op, and Sport-Thieme, winning carrier Hapag-Lloyd
Stimulate the first commercial deployment of e-fuels in the maritime sector through aggregated freight buyer demand	Global	Mobilizing collective demand to kickstart the maritime e-fuels market- ZEMBA's second tender intends to aggregate approximately 86 billion tonne nautical miles of demand (equivalent to 1.5 million twenty-foot containers transported on an example transpacific route, e.g., Shanghai to Los Angeles) for the emissions abatement associated with e-fuel-powered shipping over five years, to be deployed starting in 2027. Total emissions avoided are anticipated to equal 500+ metric tonnes CO2e. The results of this second tender are expected around the end of this year (2025).	Existing a…	Technology sh…	ZEMBA	Decemb…	Companies	ZEMBA's almost 50 member companies and carrier(s)

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Implement Innovative Finance mechanisms to increase public finance flows to $6-10bn by 2030 and mobilise private finance to achieve $25bn by 2030	Global	1. Provide knowledge on gaps and evidence to support investment decisions on production capacity, ports infrastructure and bunkering facilities and new ship build and retrofitting of ships for zero-emission fuels.	Existing a…	Public/private …	Zero-Emission Shipping Mission, GHC	Novemb…	Multi-stakeh…	Member countries and member organisations
Implement Innovative Finance mechanisms to increase public finance flows to $6-10bn by 2030 and mobilise private finance to achieve $25bn by 2030	Global	1. Move to commercial viability and pilot at least one of the financial concept of explored in the Financing Shipping Decarbonisation report	New action	Public/private …	EDF & LR MDH	Novemb…	Investors	Banks, Shipowners, fuel developers and public finance institutions
Upkilling and Retraining 400,000 Seafarers for Zero emission shipping by 2030	Global	1. Collect and share knowledge on safety management on board vessels using zero-emission fuels as propulsion. 2. Roll out the basic and advanced training framework for ammonia, methanol and hydrogen across Marine Education and Training Institutions in Africa, Asia, Latin America and Europe. 3. At least 5 shipping companies to implement onboard familiarisation programmes for the use of	Existing a…	Inclusive deci…	Zero Emission Shipping Mission Maritime Just Transition Taskforce Maritime Just Transition Taskforce	Novemb…	Companies	

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		alternative zero-emission fuels						
A dedicated maritime nexus group in the MPGCA to strengthen collaboration of the maritime sector in the action agenda	Global international shipping and ports	1. Identify ways the maritime value chain can be strengthened by the Marrakech Partnership for Global Climate Action (MP GCA), leveraging the action agendas (SAA and Breakthroughs) and contribution of the Races (RtR and RtZ) to help deliver the system transformation needed including through UNFCCC, IMO and CBD. 2. Elevate the role of the maritime sector by COP 30 through delivery of partners' own work programmes and joint collaborative work programmes across the MP GCA thematic groups. 3. Craft recommendations to the MP GCA on how the maritime sector can be embedded to truly deliver impact needed across the thematic groups and action agendas (Sharm Adaptation Agenda and Breakthroughs) and Races (RtZ and RtR).	New action	Partnerships …	EDF	Novemb…	Multi-stakeh…	MPGCA stakeholders with a maritime interest
Support developing countries in advancing	Developing countries,	Through research and analysis (e.g; UNCTAD Review of Maritime	Existing a…	Knowledge & …	Sustainable Freight	Novemb…	Multi-stakeh…	Sustainable Freight

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maritime decarbonization and climate action	SIDS, LDCs, and LLDCs	Transport), data-driven policy advice (UNCTAD maritime data and analytical tools), and technical assistance and capacity-building activities helping countries align maritime and port policies with their NDCs and climate strategies, and mitigate cost implications, and measures to ensure compliance and promote sustainable practices, as well as build capacity of ports (through workshops, trainings, exchange of experiences) to shift to clean energy (renewable energy production and consumption, electrification of equipment, fleet and vehicles, clean fuel bunkering, storage, infrastructure and distribution), promote collaboration, and address technology and financing issues to 2028.			Sustainable and Resilient Transport Framework, UNCTAD			Sustainable and Resilient Transport Framework, UNCTAD
Adoption and implementation of the IMO Net Zero Framework for the entry into force date	Member States, Shipping Companies	Implementation of roadmap to deliver the IMO Net Zero Framework guidelines	Existing a…	Policy & regul…	IMO	Novemb…	Countries	IMO Member States and Observer Organizations
5 developing countries develop National Action Plans by 2026	Member States	Provide support to developing countries to develop National Action Plans as detailed in IMO Circular 5062	Existing a…	Knowledge & …	IMO Green Voyage	Novemb…	Countries	Bangladesh, Egypt, Ghana, Mexico, and Nigeria
Large scale shift to Greener Refrigerated Maritime Containers (with very low GWP)	Container manufacturers, shipping	Rapid introduction of Greener Reefers with more energy efficient design and low GWP refrigerants (e.g. R290 or CO2). Approx. 1300	Existing a…	Technology sh…	German Development Co-operation (GIZ) and	Novemb…	Companies	

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	lines	new reefers enter the market every day.			Kuehne Climate Center			
Increased availability and use of (renewable) Shore Power instead of HFO	Ports, renewable energy, shipping lines	Scale up use of (renewable) electric shore power through facilitation of measures which improve shore power installation rates from 2025 onward.	New action	Public/private …	Kuehne Climate Center, World Bank	June 20…	Multi-stakeh…	Organisation of Eastern Caribbean States (OECS),