Green transition of shipping in developing countries

Key results:

- Maritime administrations and seafarers in Africa have increased knowledge on green shipping offered opportunities and capacity to reduce GHG-emissions.
- Developing states in Africa have improved their national policies on green shipping, creating an enabling environment for increased investments in energy efficient solutions, green technologies and fuel infrastructure for green shipping.
- Voices from the global South are increased and have an impact on the outcome of the IMO GHG-negotiations on future regulatory measures for global shipping contributing to an inclusive process and an equitable transition.

Justification for support:

- The green transition of global shipping is a political priority for the government of Denmark, as evidenced by its commitment to ambitious climate targets and participation in international agreements such as the Paris Agreement and the revised IMO GHG Strategy 2023.
- The IMO's GHG Strategy aims to reach net-zero GHG-emissions from global shipping by or around 2050. It also identifies barriers such as the need for capacity building among maritime authorities and creating opportunities for developing countries. These efforts will enable them to participate in the green transition e.g., in producing and distributing zero or near-zero emission fuels, energy sources for global shipping and port infrastructure. This project aims to support developing countries in creating growth, jobs and local development.
- This project has a specific focus on developing countries in Africa, and is thus aligned with the Danish Strategy for Africa of 2024 and the development policy strategy The World We Share of 2001- both by the MFA. Both aim at creating growth, jobs, income and local development in especially African countries.

Major risks and challenges:

- Contextual risks are global geopolitical conflicts such as the war in Ukraine, the blocking of the Suez Canal for six days by the container ship Ever Given and at the moment the security risks caused by Houthi attacks in the Red Sea.
- At the programmatic level, risks of failing to contribute to the project objectives primarily stem from the ability to maintain a political commitment at all levels and engagement among the stakeholders within the programme activities.
- A series of internal institutional risks, where shortcomings in the design of the project or lack of resources could threaten a successful implementation.

File No.	24/47076					
Country	Global					
Responsible Unit	KLIMA					
Sector	21040/Water transport					
Partner	International Maritime Organization (IMO)					
DKK million	**2024**	**2025**	**2026**	**2027**	**2028**	**Total**
Commitment	20	-	-	-	-	20
Projected disbursement	-	3.5	7	7.5	2	20
Duration	2025-2028					
Previous grants	None					
Finance Act code	06.43.01.40 - Andet					
Head of unit	Anne Hougaard Jensen					
Desk officer	Anne Sofie Kinnerup, Merete V Pedersen					
Reviewed by CFO	Jacob Strange-Thomsen					

Relevant SDGs *[Maximum 1 – highlight with grey]*

No Poverty	No Hunger	Good Health, Wellbeing	Quality Education	Gender Equality	Clean Water, Sanitation
Affordable Clean Energy	Decent Jobs, Econ. Growth	Industry, Innovation, Infrastructure	Reduced Inequalities	Sustainable Cities, Communities	Responsible Consumption & Production
Climate Action	Life below Water	Life on Land	Peace & Justice, strong Inst.	Partnerships for Goals	

Strategic objectives:

An accelerated just and equitable green transition of shipping in developing countries, with a specific focus on Africa, by building financial, technical and human capacities of developing countries. By addressing capacity barriers, the project seeks to create enabling environments that attract investment in green technologies and infrastructure, thereby fostering sustainable green growth and unlocking development opportunities.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%		**100%**		
Total green budget (DKK)		**20 million**		

Justification for choice of partner:

The IMO is a specialized agency of the United Nations which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships. The IMO is one of its kind within the maritime sector and the only player within its field with 176 member states. The IMO is a first-time receiver of funds and thus a new partner to the MFA.

Summary:

Zero GHG emissions are needed to combat climate change, including from the shipping sector. In 2023 the IMO acknowledged its responsibility and adopted a climate strategy with an ambition to reach net-zero GHG emissions from global shipping by or around 2050 in a way that leaves no one behind. To accelerate the transitioning, the global south will need development support in order to benefit from the green transition. This project signifies an enhanced Danish support for global green shipping by addressing barriers and opportunities for developing countries. The overall objective of this project is an accelerated just and equitable green transition of shipping in developing countries, with a specific focus in Africa. Capacity building can contribute to development, growth and jobs. E.g., by establishing green corridors in developing countries.

Budget:

All support costs: IMO GHG Technical Cooperation Trust Fund, Green Voyage 2050 Phase II and Voluntary Multi-Donor Trust Fund for Participation	18.810.000 DKK million
Administration fee (5 %)	940.500.00 DKK
Review and analysis	249.500.00 DKK
Total	**20 DKK million**

INDHOLDSFORTEGNELSE

Abbreviations 3
1. Introduction 4
2. Institutional Context, Strategic Considerations and Justification 5
2.1 Institutional context 5
2.2 Alignment with current Danish policies 9
2.3 Strategic Relevance for Denmark 9
2.4. Lessons learned and implications for proposed project 10
3. How to Address the Key Challenges 13
3.1 Supporting Two IMO funds and a Program to Address Identified Challenges and Opportunities 13
3.2 Project Objective and Outcomes 16
3.3 Theory of Change 19
4. Summary of the results framework 21
5. Summary of budget 22
6. Institutional and Management arrangement 23
7. Financial Management, planning and reporting 25
8. Risk Management 27
Annex 1: Context Analysis 30
Annex 2: Partner Assessment 48
Annex 3: Result Framework 54
Annex 4: General project risks and mitigation strategies 64
Annex 5: Budget 70
Annex 6: Plan for Communication of Results 72
Annex 7: Organisational setup – IMO 74
Annex 8: Literature list 75

Abbreviations

AU: African Union
CII: Carbon Intensity Indicator
COP: UN Climate Change Conference
DMA: Danish Maritime Authority
DSA: Daily subsistence allowance
EEDI: Energy Efficiency Design Index
EEXI: Energy Efficiency Existing Ship Index
EIB: European Investment Bank
GHG: Greenhouse Gas
GMF: Global Maritime Forum
GPS: the Green Shipping Programme of Norway
IAPH: International Association of Ports and Harbours
ICS: International Chamber of Shipping
ILO: International Labour Organization
ITCP: The Integrated Technical Cooperation Program
IMO: International Maritime Organization
ISWG: Intersessional Working Group
ITF: International Transport Workers Federation
MARPOL: International Convention for the Prevention of Pollution from Ships
MED: IMO's Marine Environment Division
MEPC: Maritime Environmental Protection Committee
MMMCZCS: Mærsk McKinney Møller Center for Zero Carbon Shipping
MFA: Ministry of Foreign Affairs of Denmark
MoU: Memorandums of Understanding
NAP: National Action Plan
STEM: Science, Technology, Engineering and Maths
VMDTF: Voluntary Multi-Donor Trust Fund

1. Introduction

This project document defines the objectives and outcomes of the Danish support to the IMO and its work to support the transition towards green shipping in developing countries.

The IMO is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. The IMO is responsible for administering various international treaties and agreements related to the safety, security, and environmental aspects of international shipping, including MARPOL. Denmark has been a member of the IMO since 1959, and has as a large maritime nation traditionally played an important role as an active member both in negotiations and regulatory development and as chair/vice chair of different (sub)committees.

Since the first meeting of the COP in 1995, where the COP invited IMO to control emissions from the international shipping, the IMO has been responsible for monitoring and regulating emissions from international shipping sector (Decision 4/CP.1). Recently, in July 2023, the IMO member states adopted a revised climate strategy. The strategy is a significantly strengthening of the initial strategy from 2018 and includes an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e., close to, 2050, and a commitment to ensure an uptake of minimum 5 % alternative zero and near-zero GHG fuels by 2030.

For Denmark, achieving a climate neutral shipping sector by 2050 is a political priority, and the DMA has in recent years been supporting the work of the IMO in relation to the reduction of the GHG-emissions from shipping. The project is a part of the Danish contributions to the Norway-US led Green Shipping Challenge and was announced by the Prime Minister, Mette Frederiksen, at COP28 December 2023 in United Arab Emirates under a new Danish led track on support for the implementation of the 2023 IMO GHG strategy in developing countries. The project signifies an enhanced Danish support for global green shipping especially in relation to addressing barriers and opportunities for developing countries.

The overall objective of this project an accelerated just and equitable green transition of shipping in developing countries, with a specific focus in Africa. The project covers the period from 1st January 2025 to 31st of December 2028 with a budget of DKK 20 million.

The project document was created through close cooperation between the MFA, DMA, the IMO MED Secretariat, and the IMO Green Voyage Project team. It includes a comprehensive assessment for the IMO's onboarding as a new partner with the MFA, which has provided valuable guidance (see annex 2). The MFA is supporting the IMO financially for the first time, while the DMA has previously worked with and funded the IMO's work on reducing emissions from shipping.

Previous support from the DMA:

- In 2020, the DMA donated 10.000 USD to a comprehensive impact assessment of the short-term reduction measures.
- In 2021, the DMA donated 100.000 USD to a comprehensive impact assessment to evaluate the consequences and impact on countries' economies of suggested mid-term measures.

- In 2022, prior to the adoption of the revised GHG strategy, the DMA donated 60.000 USD for strengthening the dialogue on the green transition of international shipping.

This project therefore follows up on previous Danish donations to the IMO, but with a significantly strengthened focus on addressing the needs of developing countries.

2. Institutional Context, Strategic Considerations and Justification

2.1 Institutional context

The maritime sector emits over 1 billion tonnes of GHG-emissions every year (around 3 % of global GHG-emissions) and with current growth trends in maritime trade, emissions are projected to rise by up to 30 % by 2050 compared to 2008 levels under a business-as-usual scenario (IMO 4th GHG study). Shipping is also responsible for a significant share of air pollution. About 15 % of premature mortalities associated with air pollution from transportation are attributed to shipping. Air pollution from shipping causes roughly 60,000 premature deaths annually, especially in coastal and urban areas near major ports (Green Voyage concept note).

To tackle this issue the member states of the IMO adopted in 2018 the initial IMO GHG Strategy with the overall aim of reducing emissions from international shipping by 50 % in 2050. However, it soon became clear for many member states in lieu of recent IPCCC reports, that the targets of the initial strategy were not adequate in terms of the shipping sector contributing its fair share to reach the goals of the Paris Agreement. During the two-year negotiations of the planned revision of the initial strategy agreement was reached to significantly strengthen the levels of ambition and the member states of the IMO adopted in July 2023 a revised GHG Strategy. The strategy includes an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e., close to, 2050, a commitment to ensure an uptake of minimum 5 % alternative zero and near-zero GHG fuels by 2030, as well as indicative check points for 2030 and 2040. The strategy also recognizes the need to support developing countries and address their needs to ensure a transition of the shipping sector that is just and equitable.

2.1.1 Opportunities for developing countries

The shipping sector heavily relies on heavy fuel oil – a high-carbon fossil fuel – consuming 300 million annually. Decarbonizing the global fleet of around 100.000 is a massive challenge requiring new regulations, energy efficient technologies, changes to the fuel supply chain, and significant investments. According to a Global Maritime Forum report “Shipping’s Energy Transition: Strategic Opportunities in South Africa”, achieving net-zero emissions by 2050 globally will require between $1.4-1.9 trillion US dollars in investments, with 87% of the investments needed for land-based infrastructure for low carbon fuels and 13 % for ship technologies. A World Bank report “The Potential of Zero-Carbon Bunker Fuels in Developing Countries” highlights that energy efficient technologies, though a key component, will not be enough to decarbonize the shipping industry. Instead, adopting green fuels like green ammonia and hydrogen is essential for decarbonisation, offering significant development opportunities for developing countries with renewable energy resources.

2.1.2 Challenges to be addressed

The 2023 IMO GHG Strategy identifies key barriers to achieving its goals, such as the need for capacity building among maritime authorities and stakeholders in the maritime value-chain, and creating opportunities for

developing countries, especially LDCs and SIDS. These efforts will enable them to participate in green transition e.g., in producing and distributing zero or near-zero emission fuels, energy sources for international shipping and/or other related opportunities in or around the infrastructure in the ports. However, many developing countries need support to overcome these barriers and build the necessary capacity to keep up with the maritime sector's green transition and not be left behind.

Low level of financial, regulatory and human capacities

Firstly, developing countries face an evident challenge when it comes to the financial aspects of the energy transition. For the countries that stand to benefit from the energy transition, support is needed in terms of unlocking the development potential; not least support for securing investments at scale in renewable energy (solar, wind and biomass), power-to-x production facilities for alternative fuels, development of the grid and pipes, bunkering infrastructure and more efficient and greener ports capable of providing on-shore power supply etc. In many developing countries, there is a lack of resources and technical knowledge needed to identify opportunities, develop prefeasibility and feasibility studies that can be presented to investors as foundation for viable business models and investments.

Secondly, in order to unlock national benefits, there is a need to develop a stronger policy framework capable of facilitating the transition to zero emission shipping. Forward-looking policies can accelerate the required shift, mitigate uncertainties, and ensure maximum benefits of the energy transition. This would require more clearly defined national objectives to ensure benefits are realized through development of National Action Plans, which is likewise often a prerequisite for securing finance from for example regional development banks.

The revised IMO GHG Strategy envisages a 'just and equitable transition', including the need to upskill and support seafarers. As mentioned above, there is a significant opportunity for especially upskilling of maritime jobs as around 800.000 seafarers will need new training and reskilling to be able to handle the new green fuels and technologies. Likewise, port workers and employees along the maritime value chain will also need additional training, but as this requires both technical knowledge and is associated with extra costs support is needed to unlock green maritime jobs in developing countries.

Low level of support for and knowledge of technical energy efficient solutions

As the most cost-effective and fuel-efficient way to transport goods, maritime transport is the backbone of world trade and globalization. All year round, ships carry cargoes to all corners of the globe. World trade and maritime transport are fundamental to sustaining economic growth and spreading prosperity throughout the world. Shipping will continue to grow with the anticipated increase in world trade, and improved access to basic materials, goods and products is expected to lift millions of people out of poverty and, thereby, contribute to achieving SDGs 1 (no poverty) and 2 (zero hunger).

Particularly, developing countries are major players in international shipping. More than 75 % of international commercial ships are flagged in, and 36 % of shipping gross tonnage is built in developing countries. Developing countries also accounts for most global seaborne trade flows, both in terms of exports (goods loaded) and imports (goods unloaded) and supply the biggest share of seafarers to international shipping. The great impact of developing countries on international shipping indicates that the decarbonisation of maritime

transport will not be successful if strong engagement from developing countries is not secured (Green Voyage concept note).

Investments in a more inclusive and decentralized bunker fuel market can support developing countries' general economic development, as well as help them achieve wider energy transition at a lower cost. The transition of the global shipping sector can unlock significant benefits for developing countries by creating a good business case and an increased demand for green alternative fuels thereby accelerating the development of renewable energy. Under the right policies and framework conditions, the transition of the shipping sector can open the door for large infrastructure investment, clean energy technology transfers, skills development of local workforce and be a driver for job creation and as such to achieve SDG 1 (no poverty) and SDG 8 (decent work and economic growth).

However, regardless of countries' ability to produce green fuels at scale, or a location close to major shipping routes, the transition of the shipping sector offers opportunities for new and more high-skilled jobs in the maritime value-chain, not only in ports but also on-board ships. According to a report by the Maritime Just Transition Taskforce 1.450.000 seafarers will require some kind of additional training by 2030, and 800.000 by the mid-2030's. Shipping's decarbonisation will require new ways of training and educating seafarers, with increased focus on Science, Technology, Engineering and Maths (STEM) skillsets, which also has the potential to attract more female employers to the industry, which is currently heavily male dominated as only approx. 2 % of the workforce is currently women.

The alternative fuels for the shipping industry will come at an increased cost – some estimates that the fuel cost will be at least double from the 2030s to the 2050s across different fuels with the largest price gap projected at around ten times the price of fossil fuels.[1] For many developing countries heavily dependent on import by ships, for example pacific SIDS, the increased cost can be an obstacle for development, as these countries already face relatively high transport and logistical costs.

One of the most effective ways to mitigate increased fuel costs is to implement technical and operational energy efficiency solutions that can lower the amount of fuel needed for a journey, which in turn mitigates increased freight rates due to rising fuel costs. Therefore, the capacity to pilot test and implement new alternative energy efficient solutions and create the right regulatory incentives locally and nationally will be crucial not only to the transition of the shipping sector, but also for companies and countries wider economies. However, energy efficient solutions are across the international fleet not being implemented in the scale needed, this is true not least for developing countries that lack both technical capacity as well as finances to support feasibility studies and pilot projects.

Studies shows, that despite the increasing attention around decarbonisation, ongoing and planned actions are still not enough to translate into sufficient emission reductions to meet the requirements of the IMO

[1] Getting to Zero Coalition and UMAS: A Strategy for the Transition to Zero-Emission Shipping An analysis of transition pathways, scenarios, and. levers for change, s. 86: Transition-Strategy-Report.pdf (u-mas.co.uk)

strategy. Therefore, we need decarbonisation efforts and strategies to reduce the emissions associated with individual vessels, routes, or companies (MMMCZCS, 2022).

Underrepresentation in the IMO GHG negotiations

Equal participation is at the core of the human rights-based approach: everyone has the right to participate in decisions which affect their human rights. Participation must be active, free, meaningful and give attention to issues of accessibility[2]. In addition, the principle to leave no one behind is a centre aim in the 2030 Agenda and the SDGs, as well as in the IMO GHG Strategy. SIDS and LDCs, many of the developing countries are the most effected by the impacts of climate change and as such their participation in climate related negotiations, including in the IMO, are of outmost importance to ensure that the leaving no one behind is enforced in practice.

During the recent negotiations of the revised IMO strategy a lack of attendance from developing countries was apparent. Especially LDC's and African states were poorly represented. This challenge has been identified by the IMO secretariat as well as developing countries as an obstacle for inclusive negotiations, which risks jeopardizing the legitimacy of the regulation[3]. Hence, it is not only an obstacle for developing countries. It also risks undermining the possibility of a just and equitable transition as this is intrinsically linked with the policy process itself[4]. For the process to be procedurally fair, the representation of vulnerable and affected nations in the IMO meetings is needed as the literature shows, that when individuals perceive a political process as fair, they are more willing to accept the outcomes of these processes. This has bearing for the IMO which is a consensus-led organisation dependent on agreement for progress[5]

The challenge for particularly smaller and vulnerable developing countries is related to the lack of capacity, but the challenge is twofold. Firstly, many developing countries lack personnel, as they often have small maritime administrations, and financial resources to participate in the negotiations in IMO in London. Secondly, they lack knowledge and information of the IMO process as well as technical understanding, which makes it inherently more difficult to participate.

The adoption of the revised IMO GHG strategy at MEPC 80 in July coincided with the beginning of phase 2 in the IMO negotiations in regulatory measures that is to be approved at MEPC 83 in spring of 2025. The underrepresentation of especially climate vulnerable countries can have a significant effect on the outcome of the negotiations. Not only in terms of the overall level of ambition, but also on which measures that can be agreed upon, how possible negative effects from the IMO GHG regulation on developing countries' economies should be addressed, and how a potential revenue from a GHG pricing mechanism should be distributed. All matters with the potential to greatly impact the developing and vulnerable countries.

[2] The Human Rights Based Approach (HRBA) - EXACT External Wiki - EN - EC Public Wiki (europa.eu)

[3] Reference is made to discussions at conferences on green shipping in Ghana (2023), Philippines (2023) and Denmark (2024) organized by the Danish Martiime Authority, the IMO Secretariat and partner countries. See also 2023 IMO Strategy on Reduction of GHG Emissions from Ships

[4] Getting-to-Zero-Coalition_Insight-brief_Decarbonizing-shipping-while-ensuring-an-equitable-transition.pdf (globalmaritimeforum.org)

[5] Why should we talk about a 'just and equitable' transition for shipping? | UNCTAD

In order to achieve stronger participation from the most vulnerable countries, the IMO Council, at its 128th session, endorsed the establishment of the Voluntary Multi-Donor Trust Fund (VMDTF) providing financial assistance to representatives of developing countries, in particular SIDS and LDCs, which are IMO Member States, in attending the meetings of MEPC and ISWG-GHG. The Fund is open to voluntary contributions from all States, non-governmental organizations, intergovernmental organizations, other interested entities, and individuals, noting that contributions will remain anonymous, unless otherwise requested, without option of donors to target specific beneficiary States or regions with their contributions, beyond supporting the Fund's overall mandate, in order to prevent undue influence.

Support from more developed countries to ensure that the most vulnerable can benefit from this VMDTF can ensure that no one will be left behind and all interested and most impacted developing countries, LDCs and SIDS can also actively participate in IMO GHG related negotiations, with this supporting that we are building an equal world, with participation of all.

2.2 Alignment with current Danish policies

The green transition of the international shipping sector is a political priority for the government of Denmark, as evidenced by its commitment to ambitious climate targets and participation in international agreements such as the Paris Agreement and the revised IMO GHG Strategy 2023. Regarding the latter agreement, Denmark is currently working actively to ensure the strategy's goals are met through the development and adoption of ambitious global regulations within the IMO.

Additionally, Denmark is promoting green solutions in different sectors, including international shipping, through both multilateral and bilateral cooperation with developing countries, as well as export of green solutions. This project adds significant value to the effort of supporting a just and equitable transition of shipping and contributes to strengthening Denmark's relations with third countries, in alignment with *The World We Share*, Denmark's Strategy for Development Cooperation 2021-2025. In addition, since this project has a specific focus on developing countries in Africa, it is highly relevant to the new Danish Strategy for Africa of 2024 by the Ministry of Foreign Affairs.

2.3 Strategic Relevance for Denmark

Denmark, the 12th largest flag state, is a global leader in shipping and maritime trade, with its shipping industry being the country's largest export sector, exporting DKK 529 billion in 2023. The country's strong maritime industry supports a large network of companies providing equipment and green technology solutions. Denmark is the world's sixth largest exporter of maritime equipment, with many ships globally using Danish products. Danish companies lead in green energy solutions for shipping, offering significant export potential.

Based on strategic considerations, two IMO funds and an IMO program have been selected for this project, as they are seen as relevant and able to support overcome the challenges of transitioning the shipping sector in developing countries. All are existing funds and program, however, with the Danish donations it is possible to expand the engagement/activity level considerably.

The three selected funds/program are as below and described in section 3.3:

A. IMO GHG Technical Cooperation Trust Fund

B. Green Voyage 2050 Phase II
C. Voluntary Multi-Donor Trust Fund for Participation (VMDTF for Participation)

The strategic considerations and Danish relevance for choosing these can be summarized as follows:

- *Capacity building*: The project delivers key input for a green energy transition of a hard-to-abate sector by targeting support to addressing barriers for the transition to take place in developing countries. One aim is to increase the capacity of developing countries to participate and benefit from the transition as a global transition demands the participation of the global south. The project puts emphasize on the African region, as this region especially has high barriers, but also ample opportunities to become new fuel producers and suppliers of seafarers. At the same time, this focus is in line with DMA's previous and future engagement in the region, and as a follow up to the regional conference on green shipping, which the DMA co-organized with Ghana Maritime Authority and the IMO in February 2023.

- *National actions and uptake of energy efficient solutions*: Another related aim is to support the development of conducive framework conditions for green shipping nationally. By supporting the development of national action plans, conducting pilot projects, and producing feasibility studies that can demonstrate the potential and mobilise international financing opportunities. It is clear that the transition of a hard to abate sector requires widespread use of energy efficient solutions to be able to save on the volume of alternative fuels needed.

- *Increase the voices of SIDS and LDC's in the regulatory process:* Often it is the SIDS and LDCs who feel the impact of climate change the most. However, as highlighted above and in Annex 1, their underrepresentation in the climate negotiations on strategy and regulatory development is apparent. Therefore, an aim is to give more climate vulnerable countries a voice in the negotiations by addressing both financial and human capacity barriers

- *Visibility*: It is important that the contribution to the IMO will be visible and output and results are communicated to the beneficiaries. The project can also serve as a political signal to developing countries that their concerns and needs are taken seriously by Denmark.

2.4. Lessons learned and implications for proposed project

The following table describes the IMO's lessons learned from previous work and how these are anticipated to influence the suggested project and work program:

Lessons from previous work	Implications for proposed work program
• Need for a programmatic, thematic approach addressing needs of developing countries; • Need to see shipping decarbonization more as part of overall energy transition, with a long-term, strategic view; • Importance to pilot new maritime fuels, technologies, as well as new ways of operating (and more flexibility to support additional participating countries who showcase ownership and have potential	• Greater number of beneficiaries will be able to benefit from GreenVoyage2050 interventions. Open and transparent invitation calls will allow developing countries to apply for support for concrete activities under this proposed program. • Pilot project identification and development will be scaled-up through augmented efforts of the "GreenVoyage2050 Pilot Accelerator" (a support

for pilots, including in relation to route-based action); • Beneficiary countries require access to affordable capital for the implementation of pilot projects. However, banks (including MDBs/IFIs) have limited interest to invest in pilot projects due to the perceived high risk and the relatively low capital / finance needs (when compared to investments into full-scale projects). • Importance to work closer with IFIs/financial institutions from the beginning, to ensure that pilots result in bankable projects, further investment from private and/or development banks.	mechanism that was launched in Phase 1 and that is now well up and running). • Key MDBs will be involved from early on during implementation of GreenVoyage2050, inter alia through the IMO-EBRD-World Bank FINSMART Roundtable. Launch of a new project-specific fund, the "GreenVoyage2050 Transition Facility" will support partnering countries in accessing gap finance and thereby fast-track delivery of pilot projects. • Stronger partnerships will be established with actors involved in the renewable energy transition, infrastructure development and investment relevant to maritime decarbonization, to support coordination of actions across the value chain.

The following box provides examples of recent results and achievements by the IMO regarding two of the three funds/programs, which the Danish donation will support:

Box 1. Example of Recent Results and Achievements

Results achieved through the IMO-GreenVoyage2050:

IMO-GreenVoyage2050 has, since its operationalization in 2020, positioned itself as a global flagship initiative to scale-up emissions reduction efforts in developing countries by supporting transformative policy shifts, stimulating strategic investments, and delivering tailored-made initiatives in 12 partnering countries (Azerbaijan, Belize, China, Cook Islands, Ecuador, Georgia, India, Kenya, Malaysia, Solomon Islands, South Africa, Sri Lanka). Phase 1 addressed the specific needs for an "**enabling environment" for maritime GHG mitigation efforts by translating them into national maritime legislation and policies** in-line with national priorities and obligations under MARPOL Annex VI, the Initial IMO GHG Strategy and Paris Agreement.

At the national level, the project supported partnering countries to build their **human and technical capacity to meet the energy efficiency requirements under MARPOL Annex VI and the Initial IMO GHG Strategy**. The project enhanced awareness and capacity of countries to ratify, implement and enforce MARPOL Annex VI. Phase 1 also supported partnering countries that have not yet ratified / implemented MARPOL Annex VI in the domestication process, as well as in their efforts to **develop National Action Plans (NAPs)** for green shipping.

IMO-GreenVoyage2050 has been supporting countries to identify potential pilot project opportunities to reduce emissions from shipping, including piloting of new technologies, innovative operational practices and fuels. To address the lack of existing pilot project pipelines in the partnering countries, in 2021 the **GreenVoyage2050 Pilot Accelerator** was launched**,** a targeted support facility to accelerate the deployment of low and zero carbon solutions on-board ships / in ports in partnering countries. Through this support facility, the project is contributing to the development of bankable pilot project proposals that include a strong (economic / technical / environmental) feasibility study, a tailored financial model and implementation and risk mitigation plans. Tailored support for the pilot development is provided through the GreenVoyage2050 Project Coordination Unit in collaboration with the

Green Shipping Programme (GSP) of Norway that has strong expertise in developing and implementing more than 40 pilot projects in Norway.

Also, IMO-GreenVoyage2050 built links with other relevant initiatives and organizations and **established strategic partnerships to ensure the effective implementation of the project objectives**. This included partnerships with ports (through the International Association of Ports and Harbours (IAPH)), as well as with the industry through the IMO-Norway Global Industry Alliance to Support Low Carbon Shipping (Low Carbon GIA) which has collectively been working on innovative solutions to address barriers to the uptake and implementation of energy efficiency technologies, operational best practices and alternative low- and zero-carbon fuels. Dedicated technical cooperation activities were also undertaken on topics such as alternative fuels, addressing emissions at the ship-port interface, developing NAPs and low carbon pilot projects. This involved development of global tools, training packages and guidance documents.

Furthermore, IMO-GreenVoyage2050 signed an MoU in with the Ministry of Climate and Environment of Norway and the Maritime and Port Authority of Singapore (MPA), to cooperate on route-based actions (such as e.g. green corridors) to reduce GHG emissions.

Results achieved through the IMO GHG Trust Fund:

1. Fourth IMO Greenhouse Gas Study 2020 (MEPC 75/7/15);
2. UNCTAD Expert review of the comprehensiveness of the impact assessments submitted to ISWG-GHG 7 (ISWG-GHG 7/2/36);
3. Comprehensive impact assessment of the short-term measure (MEPC 76/7/13);
4. Study to improve the availability of Maritime Transport Costs Data in the Pacific (2022);
5. Regional Roundtable on maritime transport costs data (Fiji, February 2023);
6. Study on the readiness and availability of low- and zero-carbon ship technology and marine fuels (MEPC 80/INF.10);
7. Ad-hoc Expert Workshop on comparative analysis of candidate mid-term GHG reduction measures (GHG-EW 3) (MEPC 80/INF.39);
8. UNCTAD Preliminary expert review of the technical and economic elements, and their possible combinations, of the proposals for candidate mid-term GHG reduction measures submitted to ISWG-GHG and MEPC (MEPC 80/INF.39/Add.1);
9. Comprehensive impact assessment of the basket of mid-term measures (MEPC 81/7); and
10. Baseline Training Framework for Seafarers in Decarbonization (TC 73/15).

3. How to Address the Key Challenges

3.1 Supporting Two IMO funds and a Program to Address Identified Challenges and Opportunities

A. IMO GHG Technical Cooperation Trust Fund

At MEPC 74 May 2019 the Committee agreed to establish a voluntary multi-donor trust fund with the aim of providing a dedicated source of financial support for technical cooperation and capacity building activities to support the implementation of the Initial IMO GHG Strategy (MEPC 74/18/Add.1, annex 17). The resources of the Trust Fund include voluntary contributions from IMO Member states, UN Agencies and other entities. IMO's Marine Environment Division (MED) is the principal implementing office of the Trust Fund and is responsible for coordinating all aspects of the work programme to be financed from the Trust Fund.

As it is the mandate of the fund to support the implementation of the IMO GHG strategy in developing countries, the fund can support a range of activities and is also able to direct contributions towards specific regions. The part of the project that will be managed by the IMO GHG TC Trust Fund will be targeted the African region as the lack of financial, technical and human capacities is eminently lacking in this region. Likewise, a focus on the African region is also a natural extension of the Danish maritime engagement in Africa, where a long-standing bilateral sectoral cooperation with Ghana Maritime Authority has been ongoing since 2016 and a fairly new sectoral cooperation with Kenya is underway. Other African states is currently being evaluated for similar cooperation.

The outcomes and outputs of this part of the project are described in the result framework in Annex 3, but can be summed up to focus on the following areas:

- *Needs assessments*
  To carry out needs assessment in relation to the implementation of the 2023 IMO GHG Strategy to identify regulatory or financial gaps as a foundation for further cooperation with the African Development Bank and others on investments in infrastructure.

- *Enhanced maritime cooperation and coordination across the region*
  In February 2023, the Danish Maritime Authority in partnership with Ghana Maritime Authority and IMO held a regional conference on unlocking the opportunities for green shipping in Africa. Throughout the conference the lack of maritime coordination and sharing of knowledge and best practices was brought up. There is currently no organization, regional maritime department or established framework for continued African cooperation on maritime affairs. Despite being a strategic priority in the "Integrated Maritime Strategy" (AIM 2050 Strategy) and "Agenda 2063: The Africa we want it", that has both been developed under the auspice of the African Union (AU), has not been translated into concrete action. It is not the ambition of this project to establish an African maritime department, but rather for the IMO and African IMO member state to establish a work plan for a framework for regional cooperation on green shipping related matters.

- *Training of seafarers*
  To address the increasing need for upskilling of seafarers from developing countries, the IMO joined the Maritime Just Transition Task Force that was launched at COP26 together with the International

Labour Organization (ILO), International Chamber of Shipping (ICS) and International Transport Workers Federation (ITF). The taskforce has in the last years developed tools and materials for the upskilling of seafarers in relation to being able to handle new green technologies, which will be the basis for a training programme targeted African seafarers.

- *Strengthen developing countries' capacity to participate in IMO GHG meetings*
  As highlighted in the analysis above there is a lack of participation from developing countries in the IMO GHG negotiations. This is not least due to lack of human capacity. Many developing states have small maritime administration with few people responsible for an array of IMO related tasks covering not only GHG issues, but also other environmental issues as well as safety. It often leads to a knowledge gap and difficulty following manifold often technical and political issues that is being discussed at ISWG as well as the basic understanding of the submissions for suggested regulatory measures put forward. The measures under discussion at the moment is according to the work plan to be adopted late 2025 and can have great potential impact and benefits for developing countries, not least in terms of how distribution of a potential revenue from a GHG price mechanism for the shipping sector should be disbursed and how potential negative effects on developing countries can best be addressed. Therefore, this project will support the IMO in carrying out information activities to inform of the comprehensive impact assessment, current suggestions for future climate regulation, negotiation process and opportunities for support for capacity building in developing countries, etc.

B. GreenVoyage2050 Phase II

In collaboration with developing countries, including especially SIDS and LDCs, maritime industry actors and the IMO, the GreenVoyage2050 programme supports the reduction of GHG emissions through the sharing of operational best practices, work with the uptake of energy efficient technologies, supports development of national legislation, and by exploring possibilities for low emission fuels. The project has gone through a first phase (2019-2023) which has been financed by the government of Norway and implemented by the IMO's project and partnership division. A new four-year phase 2 has recently been launched with Norway as the main donor, but work is being carried out to assemble a group of donor countries, which together will have a strategic role in relation to the programme's further development and priorities. Through this project Denmark will be granted a seat in the steering committee of Green Voyage.
The Green programme has been selected for this project as it is an established programme ready to scale up activities that will address some of the key challenges identified above.

- *Support for enhanced national regulation and policies to address emissions from shipping*
  At the national level Green Voyage phase 1 has been supporting countries in developing National Action Plans (NAPs) to address GHG emissions from ships, as well as domesticating MARPOL Annex VI. The project supported partnering countries to build their human and technical capacity to meet the energy efficiency requirements under MARPOL Annex VI and the Initial IMO GHG Strategy. The project enhanced awareness and capacity of countries to ratify, implement and enforce MARPOL Annex VI. Phase 1 has also contributed to enhancing knowledge and information sharing, e.g. through the publication of the NAP Guide and delivery of a targeted NAP development programme.

Several developing countries, including LDCs and SIDS, across the globe are participating in the project, supported by strategic partners from the private sector who contribute expertise and experience through the project's Global Industry Alliance to Support Low Carbon Shipping.

- *Enabling Energy Efficient technology pilots*
  The Green Voyage programme has initiated pilot projects to demonstrate technical solutions for reducing GHG emissions. Through its "GreenVoyage2050 Pilot Accelerator", the project provides technical advisory services for identification of concrete proposals and development of pilot project feasibility studies.

  The project has been supporting countries to identify potential pilot project opportunities to reduce emissions from shipping, including piloting of new technologies, innovative operational practices and fuels. To address the lack of existing pilot project pipelines in the partnering countries, the project in 2021 launched the **GreenVoyage2050 Pilot Accelerator,** a targeted support facility to accelerate the deployment of low and zero carbon solutions on-board ships / in ports in partnering countries. Through this support facility, the project is contributing to the development of bankable pilot project proposals that include a strong (economic / technical / environmental) feasibility study, a tailored financial model and implementation and risk mitigation plans. Tailored support for the pilot development is provided through the GreenVoyage2050 Project Coordination Unit in collaboration with the Green Shipping Programme (GSP) of Norway that has strong expertise in developing and implementing more than 40 pilot projects in Norway.

Also, the project has built links with other relevant initiatives and organizations and established strategic partnerships to ensure the effective implementation of the project objectives. This includes partnerships with ports (through the International Association of Ports and Harbours (IAPH)), as well as with the industry through the IMO-Norway Global Industry Alliance to Support Low Carbon Shipping (Low Carbon GIA) which has collectively been working on innovative solutions to address barriers to the uptake and implementation of energy efficiency technologies, operational best practices and alternative low- and zero-carbon fuels.

- *Fuel infrastructure feasibility studies*
  Fuel infrastructure related pilots are key for the energy transition of the maritime sector and are necessary to secure long term investment. In phase II of the Green Voyage projects such studies will be a new focus area.

  Feasibility studies will be based on government partners expressed interest, and will be developed to serve as a basis for the decision-making and as a prerequisite for application of co-funding. Co-funding through the Green Voyage projects will be made available for fuel and infrastructure related projects that are key for the energy transition, as well as investments into technical and operational measures that can catalyse emission reductions in the short-term. On a national level and with relevant partners, studies will assess renewable energy potential to produce marine fuels and readiness of countries to become producers of low-carbon fuels for international shipping. At port level, opportunities for developing new or transitioning existing fuel infrastructure for alternative fuels (production, distribution, and bunkering) will be explored.

Overview of GreenVoyage2050 Phase II:

Phase 2A (2024-2025) - Adjustment Phase: This Phase will adjust to the new regulatory/policy landscape and support developing countries achieving the strengthened Levels of Ambition of the 2023 IMO GHG Strategy. Phase 2A will finalize outstanding activities/commitments of Phase 1 to ensure that the momentum is not lost, and that the intended impacts of Phase 1 are achieved. At the same time, Phase 2A will create additional structures and partnerships that are needed to enable an expansion in Phase 2B, and eventual scaling-up and replication of the project (beyond 2030), to support achieving the 2050 Levels of Ambition.

Phase 2B (2026-2030) - Expansion Phase: Following finalization of Phase 1 activities and creation of additional structures and partnerships, Phase 2B will focus on expansion of project activities. Pilot project feasibility studies initiated during Phase 1 will have been completed and, subject to study outcomes, pilots will be ready for implementation. A further pipeline of pilot projects will be created through the development of new pilot feasibility studies in new partnering countries. Phase 2B will mainly focus on the implementation of pilots in developing countries with co-funding support from the GreenVoyage2050 Transition Facility which is expected to be fully operational in 2026. By end of Phase 2 structures will also be in place to enable a full expansion / replication of pilot projects (Green Voyage Concept Note).

C. Voluntary Multi-Donor Trust Fund for Participation (VMDTF for Participation)

The last fund selected for this project is VMDTF for participation as this is the only fund in IMO that directly address the financial barrier for developing countries participation in the IMO GHG negotiations.
The objective of the Fund is to provide financial assistance to representatives of SIDS and LDCs who are IMO Member States in attending the meetings of MEPC and meetings related to greenhouse gases (GHG) matters. The Fund will cover the cost of delegates from Member State to attend MEPC and ISWG-GHG sessions, including economy round-trip air fares and respective daily subsistence allowance (DSA).

The fund successfully supported delegates from SIDS and LDC's to attend ISWG15 and MEPC80 in June and July 2023. Recently a call for new donations to the forthcoming sessions was sent out be the IMO secretariat (See Annex 6).

3.2 Project Objective and Outcomes

The project objective is *an accelerated just and equitable green transition of shipping in developing countries, with a specific focus on Africa*, by building the financial, technical, and human capacities of developing countries, particularly SIDS and LDCs. By addressing these capacity barriers, the project seeks to create enabling environments that attract investment in green technologies and infrastructure, thereby fostering sustainable green growth and unlocking development opportunities in developing countries.

The theory of change set out in this section is based on the recognition that many developing countries, especially SIDS and LDCs, face limited financial, technical and human capacities. National frameworks to ensure an enabling environment for green transition are often inadequate or missing, making it harder for these countries to attract investments in green technologies and infrastructure. Addressing these capacity barriers can help boost development and unlocking jobs in the maritime industry in these countries.

Advancing safe shipping and a global transition in the industry relies on creating conducive regulations at both international and national levels through inclusive processes, involving all relevant countries and stakeholders. It also depends on technological advances and significant investments in energy-efficient technologies and fuel infrastructure. The project addresses both regulation and technology by collaborating with public sector (national and regional authorities, local stakeholders) and the private sector (see annex 1 for details).

The project has three distinct outcomes that target various capacity and policy needs across different countries. Together, these outcomes contribute to deliver on the project's overall objective.

Outcome 1: *Maritime administrations and seafarers in Africa have increased knowledge on green shipping offered opportunities and capacity to reduce greenhouse gas emissions from shipping.*

Outcome 1 addresses key barriers to the African region, namely the insufficient level of skills and knowledge among stakeholders for implementing the IMO GHG Strategy. Building capacity at all levels to handle alternative fuels, green technologies and participate in the transition of the maritime sector, from systemic to individual, is a necessary condition for change. The project will address this by increasing awareness and knowledge in partnering countries before national decisions and actions are taken. The outcome is threefold:

Firstly, the project will contribute to improve regional regulation by supporting the development of a regional action plan for Africa. African maritime administrations have expressed concerns, at the regional conference on Green Shipping in Accra (February 2023) and in regional strategies under the auspices of the African Union, about the lack of satisfactory forums for discussing and coordinating maritime issues. There is limited coordinated approach to green shipping initiatives in the region, which hinders knowledge-sharing and effective cost-benefit outcomes for African countries. Additionally, the low level of a coordinated African approach in the IMO GHG negotiations reduces their influence. While the project does not aim to create an African Shipping Forum, as this is outside the scope of what the project can accomplish due to resource and time constraints, it proposes to start by working with African stakeholders to develop an action plan for regional knowledge sharing and future coordination on green shipping.

Secondly, the project will conduct one comprehensive regional capacity needs assessment of African maritime authorities for implementing the IMO GHG strategy. This will serve as a basis for identifying necessary policy, regulatory actions, or funding gaps.

Thirdly, the project will address the challenge for African seafarers and other maritime workforce to remain relevant for a future job in a sector that is consistently requiring training and reskilling, not least to be able to handle new green technologies. The project will develop a training programme based on tools and materials develop through the ongoing IMO-ILO-ICS-ITF Maritime Just Transition Task Force. The training programme will increase competencies in areas such as: Overview of zero and near-zero carbon fuels and technologies; safety and handling procedures; technical operation and maintenance; regulatory compliance; and case studies and best practices.

Outcome 1 will be implemented using the portion of the Danish grant allocated to the IMO trust fund "IMO GHG Technical Cooperation Trust Fund".

Through its funding and technical support, Denmark is enabling a more robust and coordinated approach to addressing the barriers to green shipping in Africa, and directly contributing to the development of (a) (sub) regional action plan(s) for Africa including follow-up actions and the ability to better monitor and track progress, fostering greater cooperation among African maritime administrations. Without Denmark's support, the necessary resources and expertise to facilitate knowledge-sharing and strengthen capacity-building across the region would be severely limited impeding defined follow-up actions which have been found in the past to hamper progress. Denmark's involvement will ensure that African countries are better equipped to implement the IMO GHG Strategy domestically and effectively engage in international climate negotiations. As such it will enhance the impact of IMO's support to the region. Additionally, Denmark's expertise and resources will help fast-track the development of tailored training programs for seafarers, ensuring that the African maritime workforce is ready to navigate the transition to green shipping technologies.

Outcome 2: *Developing states in Africa have improved their national policies on green shipping, creating an enabling environment for increased investments in energy-efficient solutions, green technologies, and alternative fuel infrastructure for green shipping. This has led to an enhanced ability to attract large scale investments for project implementations.*

Outcome 2 addresses key barriers to the African region relating to investment needs. Infrastructure and fuel production projects are currently very few in developing countries due to a lack of commercial viability as well as a lack of sufficient competencies and analytical basis among national and local authorities on how to create the right conditions for attracting investments. The development of National Action Plans (NAP) for green shipping will play a crucial role in this process by providing a structured approach for countries to identify priorities, set national targets, and establish regulatory frameworks that foster investment in green shipping solutions. These NAPs will support the creation of enabling environments by improving governance structures, fostering intersectoral coordination, and identifying opportunities for public-private partnerships, which are key to driving sustainable growth in the maritime sector. Outcome 2 will also support green pilot project owners in developing comprehensive feasibility studies for zero or near-zero emissions pilot projects that are considered finance-ready.

Outcome 2 will be implemented through the IMO-GreenVoyage2050 Programme. Denmark's financial contribution will greatly expand and accelerate the activity levels of the Programme by doubling the number of partnering countries that will be added to the Programme in 2025 and that will receive support in the development of NAPs (doubling from 2 countries for which donor funding has already been secured, to 4 countries) and well as pilot project proposals / feasibility studies (doubling from 2 countries for which donor funding has already been secured, to 4 countries). The expanded and accelerated activities enabled by Denmark's contribution will create a more conducive environment for green shipping investments, setting the stage for long-term environmental and economic benefits in Africa's maritime sector.

Outcome 3: *Voices from the **global South** are increased and have an impact on the outcome of the IMO GHG negotiations on future regulatory measures for international shipping contributing to an inclusive process and an equitable transition.*

Outcome 3 addresses key barriers for developing countries, especially SIDS and LDCs, in the IMO GHG negotiations. A just and equitable green transition requires inclusive participation in both implementation and regulation. However, many developing countries, especially climate vulnerable countries as many SIDS and LDC's, have limited influence due to a lack of financial resources and technical knowledge in the IMO process. To address this, the project will provide funding to the Voluntary Multi-Donor Trust Fund for participation of SIDS and LDC's to attend IMO GHG meetings. This aims to improve their participation and influence in the negotiations.

Additionally, to increase knowledge the project will organize webinars and online workshops to provide in-depth discussions on specific aspects of IMO GHG negotiations, and fund representatives from African developing countries to attend a regional conference on green shipping. The conference could focus on understanding the challenges and opportunities of the green transition in the maritime sector from an African perspective. It could also cover the IMO GHG negotiations, the economic impacts on Africa, and how to mobilize and unlock finance for the green transition of shipping in Africa.

Addressing these barriers will not automatically guarantee that SIDS and LDC's will influence the negotiations' outcomes but removing them is essential for their active participation. This could have an impact, especially if these countries align their efforts in the same direction.

Outcome 3 will be implemented using the portion of the Danish grant allocated to both of the IMO trust funds, 1) Voluntary Multi-Donor Trust Fund for Participation (VMDTF for Participation) and 2) "IMO GHG Technical Cooperation Trust Fund". It is foreseen that the Danish contribution will achieve 25% increase of developing country (especially SIDS/LDCs) participation in IMO GHG related meetings.

Coherence and cooperation between the three outputs will be ensured through the IMO Secretariat, internally in day-to-day work, through the GHG cross-divisional group, while further coordination and if need be, risk mitigation will be addressed in the Green Voyage 2050 Steering Committee group.

3.3 Theory of Change

<table>
<tr><td colspan="3">If the MFA supports the IMO's collaboration with countries and partners aiming to advance green shipping but facing regulatory, technological and institutional capacity challenges</td></tr>
<tr><td>And if
The IMO uses their network and specialized knowledge to engage African maritime authorities and stakeholders to agree on a regional action plan for coordination.

The IMO completes a regional capacity needs assessment identifying needed policy, regulatory actions or funding gaps for implementing the IMO GHG strategy.</td><td>And if
GreenVoyage2050 supports the development of National Actions Plans for maritime green transition and feasibility studies on energy-efficient solutions and/or potential for establishment of alternative fuel bunker infrastructure leading to bankable project proposals.

GreenVoyage2050 is able to cooperate closely with developments</td><td>And if
IMO conducts capacity developing activities (webinars, online workshops, a conference) focusing on the IMO GHG negotiations and implementing decarbonisation measures.

IMO makes funding to attend IMO GHG meetings available for delegates' from SIDS and LDC's, and countries applies to be supported.</td></tr>
</table>

The IMO conducts a training program on new green fuels and technologies for African seafarers.	banks and conducting financial Roundtables.	
Then, regional maritime coordination between maritime authorities and regional bodies as AU and ADB is improved to facilitate knowledge sharing on policies, positions, and best practices. African seafarers have increased skills in order to handle new green fuels and technologies and states will be better positioned to implement IMO GHG regulation.	**Then**, National Action Plans defining clear targets and a policy framework capable of facilitating the transition to green shipping are developed in two developing countries. Green pilot project owners have developed feasibility studies on bankable pilot projects to guide their next steps.	**Then**, delegates from developing countries will be better able to actively participate in the IMO GHG negotiations based on enhanced technical knowledge of the IMO process and of current regulatory proposals as well as financial support to attend IMO GHG meetings.
Which will contribute to maritime administrations and seafarers in the African region having increased knowledge and capacity to implement the IMO GHG Strategy and participate in the green transition of the shipping sector as well as a stronger and coordinated African approach in the IMO. *(outcome 1)*	**Which will contribute** states develop improved national policies on green shipping, fostering an environment that encourages adoption of energy-efficient solutions, green technologies, and alternative fuel infrastructure, ultimately attracting large-scale investments for project implementation. *(outcome 2)*	**Which will contribute to** amplify voices from the **Global South,** allowing them to significantly influence the outcome of the IMO GHG negotiations on future international shipping regulation. If the most climate vulnerable countries reach consensus, it will foster an inclusive process and contribute to an equitable transition. *(outcome 3)*
And then, based on the enhanced technical, financial and human capacities in developing countries a just and equitable green transition of shipping in developing countries, with a specific focus on Africa, has been accelerated. *(Objective)*		

Overall assumptions

- Partnering countries' commitment to a green maritime transition is maintained during the project.
- IMO is able to successfully locate and engage relevant staff from maritime authorities and other stakeholders to participate in project activities.
- Despite staff turn-overs in IMO and in the partner countries, knowledge capacity and skills relevant for the programme are sufficiently institutionalized with proper hand-over processes.
- Partner countries continue to support the mandates of the maritime authority and other key partner institutions.

4. Summary of the results framework

Project title	**Green transition of shipping in developing countries**
Project objective	*Just and equitable green transition of shipping in developing countries, with a specific focus in Africa has been accelerated.*

Outcome 1	**Maritime administrations and seafarers in Africa have increased knowledge on green shipping offered opportunities and capacity to reduce greenhouse gas emissions from shipping.**
Output 1.1	A regional action plan for Africa has been developed and promoted through a regional conference. Both aimed at enhancing knowledge sharing and coordination on maritime decarbonisation in Africa.
Output 1.2	A comprehensive regional capacity needs assessment of African maritime authorities for implementing the IMO GHG Strategy has been completed.
Output 1.3	African seafarers and other maritime workforce have participated in a training programme aimed at enhancing their knowledge and skills in handling new green fuels and technologies.

Outcome 2	**Developing states have improved their national policies on green shipping, creating an enabling environment for increased investments in energy efficient solutions, green technologies, and alternative fuel infrastructure for green shipping. This has led to an enhanced ability to attract large scale investments for project implementations.**
Output 2.1	Two developing countries have developed National Action Plans (NAP) to address their shipping greenhouse gas (GHG) emissions. For each country, the plan has been endorsed by an inter-ministerial National Task Force (NTF).
Output 2.2	Two green pilot project owners in developing countries have developed comprehensive feasibility studies for zero or near-zero emissions pilot projects that are considered finance-ready. This should enable them to make informed decisions about the next steps for implementing their pilot projects.
Output 2.3	Two pilot project owners in developing countries have developed action plans to address financial barriers and have connected with donors and International Financial Institutions (IFIs) with a view to securing funding for their project implementation.

Outcome 3	**Voices from the global South are increased and have an impact on the outcome of the IMO GHG negotiations on future regulatory measures for international shipping contributing to an inclusive process and an equitable transition**
Output 3.1	IMO delegates from developing countries, especially Small Island Developing States (SIDS) and Least Developed Countries (LDCs), have participated in capacity developing activities such as webinars, online workshops and one regional conference. All focusing on how to navigate the IMO GHG negotiations and implementing decarbonisation measures.
Output 3.2	Financial support has been provided for country representatives from developing countries, particularly Small Island Developing States (SIDS) and Least Developed Countries (LDCs), to attend IMO meetings focusing on GHG-related matters.

A more detailed result framework can be found in Annex 3 including indicators, baselines and annual targets.

5. Summary of budget

A budget of DKK 20 million will be made available by the MFA for this project. In accordance with Danish procedures for projects funded by Official Development Assistance, the project will include administration cost of maximum 5 %. A budget of DKK 19.75 million is allocated for project planned activities and the remaining DKK 249.500 is allocated to the DMA/MFA for consultancy services in relation to a possible mid-term review or other relevant activities. The grant contribution of DKK 19.75 million will be managed by the IMO under a donor agreement with the MFA and adhering to the budget below.

Summary of budget

		2025	2026	2027	2028	Full Plan
Outcome 1 MED GHG	Technical Advisory Services*	400.000,00	260.000,00	610.000,00	530.000,00	1.800.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	620.000,00	730.000,00	1.310.000,00	600.000,00	3.260.000,00
	Travel and DSA	280.000,00	410.000,00	1.000.000,00	600.000,00	2.290.000,00
	Communication and Visibility	0,00	30.000,00	130.000,00	60.000,00	220.000,00
	All cost elements	**1.300.000,00**	**1.430.000,00**	**3.050.000,00**	**1.790.000,00**	**7.570.000,00**
Outcome 2 TCID GV2050	Technical Advisory Services*	670.000,00	845.000,00	800.000,00	0,00	2.315.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	825.000,00	2.190.000,00	100.000,00	0,00	3.115.000,00
	Travel and DSA	400.000,00	410.000,00	600.000,00	0,00	1.410.000,00
	Communication and Visibility	120.000,00	240.000,00	0,00	0,00	360.000,00
	All cost elements	**2.015.000,00**	**3.685.000,00**	**1.500.000,00**	**0,00**	**7.200.000,00**
Outcome 3 MED GHG	Technical Advisory Services*	0,00	410.000,00	300.000,00	0,00	710.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	0,00	270.000,00	270.000,00	0,00	540.000,00
	Travel and DSA	0,00	700.000,00	1.950.000,00	0,00	2.650.000,00
	Communication and Visibility	0,00	70.000,00	70.000,00	0,00	140.000,00
	All cost elements	**0,00**	**1.450.000,00**	**2.590.000,00**	**0,00**	**4.040.000,00**
All + Support costs	All Output Sub-Total	3.315.000,00	6.565.000,00	7.140.000,00	1.790.000,00	18.810.000,00
	IMO SC (GHG TC TF - 5%)	165.750,00	328.250,00	357.000,00	89.500,00	940.500,00
	Total	**3.480.750,00**	**6.893.250,00**	**7.497.000,00**	**1.879.500,00**	**19.750.500,00**
DMA + MFA	Contractual services: Review and analysis	0,00	0,00	249.500,00	0,00	249.500,00
Full project	IMO	3.480.750,00	6.893.250,00	7.497.000,00	1.879.500,00	19.750.500,00
	DMA + MFA	0,00	0,00	249.500,00	0,00	249.500,00
	Total	**3.480.750,00**	**6.893.250,00**	**7.746.500,00**	**1.879.500,00**	**20.000.000,00**

A more detailed budget on output level can be found in Annex 5.

6. Institutional and Management arrangement

The IMO will be the implementing partner of this project and will exercise all matters of coordination on the programme. A chart of the IMO's organizational structure can be found in Annex 7, information on IMO's capacity to implement the project can be found in Annex 2 (partner assessment) and further information on Anti-corruption and Prevention of Sexual Exploitation, Abuse and Harassment (SEAH) can be found in Annex 1 (context analysis).

The management arrangement of the programme described in this section aims to ensure adequate reporting and dialogue on the project results to enable all partners to make timely decisions about the project and activities, including possible adaptions. In managing the project IMO will ensure alignment with the IMO GHG strategy and the GreenVoyage2050 Programme Document.

Organizational set-up and reporting
Programme results as outlined in the project results framework (Annex 3) will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results.

For outcome 1 and 3 the IMO Marine Environment Division in the IMO Secretariat will be the implementing entity, whereas the implementation of outcome 2 and the day-to-day coordination of the GreenVoyage2050 programme will be provided by the GreenVoyage2050 Programme Coordination Unit (PCU) that is based at IMO under the direct oversight and supervision of the Head of Projects, Sub-division of Partnerships and Projects of IMO's Technical Cooperation and Implementation Division (TCID). The IMO will assume day to day operational control of the project and will directly liaise with counterparts at country and regional levels.

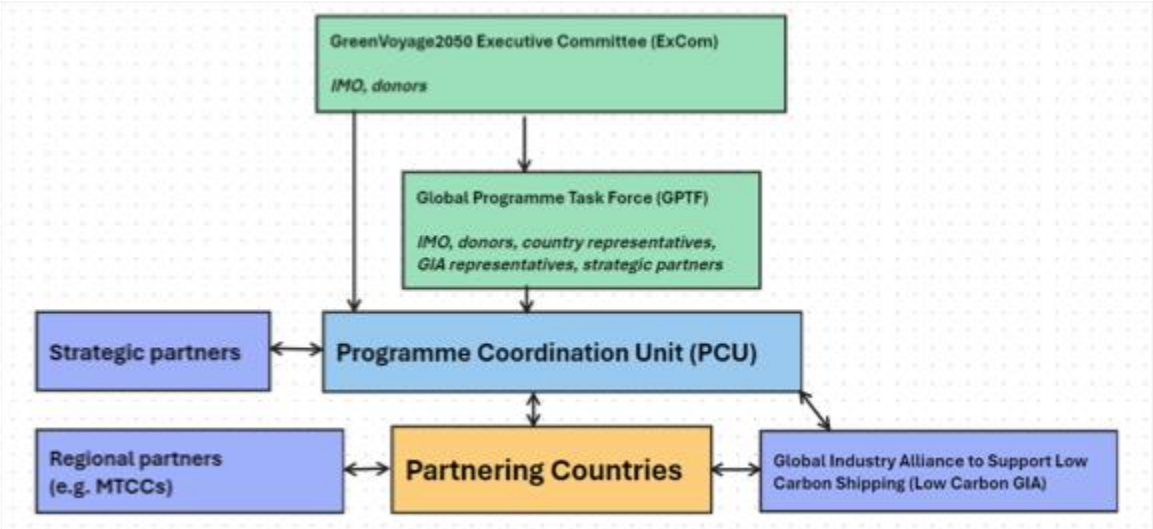
At the end of January every year, IMO will prepare an annual report that analyses and compares planned and actual progress on project activities and outcomes. The report will outline the results achieved so far, unexpected challenges or opportunities that arose, and present the action taken or to mitigate such changes.

A project Steering Committee consisting of DMA, IMO MED, GreenVoyage2050 PCU and the MFA will be formed and meet at least annually following the submission of the result progress report. The DMA will provide technical feed-back and ensure synergy with on-going bilateral maritime partnerships (Strategic Sector Cooperation). The Steering Committee will evaluate and monitor the progress to ensure delivery of outputs, address issues related to implementation, and provide input and advice on potential adaptations to the programme. The Steering Committee should also assess the risk management assessment and assumptions made and revised accordingly if needed. A schedule related to deadline for activities related to the project Steering Committee is set out below. The final progress report of the project will be submitted January 2028.

Specifically for outcome two (Outcome 2), additional high-level coordination and implementation support will be provided through the GreenVoyage2050 programme **Executive Committee (ExCom)** comprising of the IMO GreenVoyage2050 Secretariat and all GreenVoyage2050 donors, including Denmark. GreenVoyage2050 donors will be further invited to join the GreenVoyage2050 **Global Programme Task Force (GPTF)**, the GreenVoyage2050 main governance and oversight body with representatives from IMO, programme donors, country and regional representatives, the private sector, NGOs and strategic partners. The GPTF will

meet biannually to review progress, provide strategic advice and guidance, and support adaptive project management. The GPTF will also approve relevant Action Plans and major project outputs.

	Activities relevant for Project Reporting
January	31st of January Progress report bases on the result framework sent to MFA
February	Project Steering Committee meeting with back-to-back GreenVoyage2050 Ex-com Meeting
March	Request for funds sent to MFA
May/June	Audited GHG Trust Fund financial statement sent to MFA
June	Annual IMO financial statement sent to MFA



Two Technical Analysts will be hired for the purpose of delivering the technical outcomes of the project (one with the responsibility of delivering outcome 1 and 3, one with the responsibility of delivering outcome 2 of the results framework). The two staff members will work under the direct supervision of the Head, Climate Action and Clean Air (IMO MED) and the GreenVoyage2050 Manager respectively.

Extensive use of technical expertise existing within IMO MED and the GreenVoyage2050 PCU will ensure cost-efficient provision of technical assistance, and external expertise will be hired only to augment the technical expertise within the PCU. In each partnering country, dedicated national project teams will be established that will work very closely with IMO and ensure that respective activities move forward as planned via engaging of the relevant stakeholders.

Plan for communicating the results

Progress and achieved results will continuously be communicated through already existing IMO platforms such as the IMO webpage, IMO LinkedIn, and the GreenVoyage2050 programme website. DMA will also use its existing platforms such as website and LinkedIn page to communicate results or bigger milestones achieved. In relation to the signing of the agreement by the IMO Secretary General and the Danish Minister for Industry, Business and Financial affairs a press release will be prepared and promoted on both DMA and

IMO communication platforms. A more detailed planned for communication of the results can be found in Annex 6.

Supervision and evaluation
The MFA shall have the right to carry out any technical or financial supervision mission that is considered necessary to monitor the implementation of the project.

After the termination of the project, the MFA reserves the right to carry out evaluations in accordance with this article. "

Anti-corruption and Prevention of Sexual Exploitation, Abuse and Harassment (SEAH)
The IMO enforces a zero-tolerance policy on prohibited practices. Its Policy and Procedures on the Prevention and Detection of Fraud and Serious Misconduct (Appendix F of the IMO Staff Regulations
And Staff Rules) outlines responsibilities, reporting mechanisms, and investigation procedures.

All staff, contractors, and partners must prevent and report fraud, with the Internal Oversight and Ethics Office (IOEO) serving as the reporting facility and initiating investigations.

For preventing Sexual Exploitation, Abuse, and Harassment (SEAH), the IMO follows its Policy and Procedures for Investigation of Alleged Breaches of the right to a Harassment-Free Workplace (Appendix E of the IMO Staff Regulations and Staff Rules). This policy covers responsibilities, prevention, corrective measures, and investigation procedures for SEAH.

7. Financial Management, planning and reporting

The Danish support is earmarked to the activities outputs and outcomes specified in the result framework (Annex 3). The financial management and reporting of the project will adhere to the requirements in the DANIDA Financial management guidelines[6]:

Disbursements
Disbursement of the contribution shall be made upon written disbursement requests from IMO to the MFA in instalments based on the agreed disbursement schedule and the actual progress made of the project and shall take into account that payment shall be made in advance of the implementation of planned activities. IMO will issue a Letter of Agreement accompanied by an invoice for payment by the donor for the contribution to the IMO GHG TC Trust Fund. The MFA will transfer the annual amount according to the agreed budget in US Dollars to the IMO GHG TC Trust fund once a year following a request from the IMO.

The planned disbursement schedule is:

- 2025: DKK 3.480.750
- 2026: DKK 6.893.250

[6] Financial-Management-Guidelines-October-2019.pdf

- 2027: DKK 7.497.000
- 2028: DKK 1.879.500

Partner procedures pertaining to financial management
IMO will be fully responsible for administering the contribution in accordance with the Terms of Reference of the Trust Fund in accordance with the Organization's Financial Regulations and Financial Rules, which are supplemented by area-specific policies and procedures, and administrative instructions.

Funds are programmed on an annual basis in the Organization's ERP system, SAP, on the basis of a Project Initiation Document (PID) which sets out the plan and budget for the year – release of funds is controlled by the Organization's Finance and Budget Services team. SAP provides a robust budgetary control over the use of funds, with all expenditure going through the system, including where relevant, salary costs, travel, procurement of goods and services, and other expenditures. All expenditures require appropriate approvals by budget holder and procurement teams, with appropriate segregation of duties built into the system controls.

The contribution is subject to a charge of 5% for IMO's programme support and administration services, which will be applied to all programme resources expended in the implementation of the activity. Any interest earned by the IMO on the contribution will form part of the Trust Fund. Any residual funds remaining on completion of the activity will remain in the Trust Fund and be applied in accordance with the purpose of the Trust Fund.

Procurement
In implementing the Project, IMO shall affect all procurement of goods, services or works in accordance with its Rules and Regulations relating to procurement. The Procurement and Contracting Unit (PCU) shall be responsible for managing the procurement services in a transparent, accountable and efficient manner. IMO carries out its procurement process under strict adherence to the principles of transparency, fairness, impartiality, effective competition and best value for money, as well as international best practices.

For the procurement of goods, services or works, PCU of IMO will launch bidding exercise, with an aim to solicit offers from a wide and diverse range of vendors and provides equal access and fair opportunity to compete for contracts for required goods or services.

Depending upon the complexity, market conditions, nature of the requirement (i.e., goods, services, or works) and anticipated procurement value, four main solicitation methods are used. Contracts are governed by "International Maritime Organization General Terms and Conditions of Contract (IMOGCC)", which contains standard contractual provisions that are incorporated into every commercial contract that IMO concludes.

IMO reserves the right to accept or reject any bid, and to annul, in whole or in part, or to suspend the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the reasons for the IMO's action.

Work planning

Representatives of the Donor and IMO shall have formal consultations once a year as part of the GreenVoyage2050 Steering committee. Unless otherwise agreed, IMO shall convene and chair the consultations, which shall be held at a mutually agreed place and date. Each party shall bear their own costs for participating in these consultations. The consultations shall deal with the following issues: Review the progress of GreenVoyage2050 activities, discuss possible revisions of annual work plans and budgets, discuss issues of special concern for the implementation of the activities.

Narrative progress reports and financial reports
IMO shall prepare reporting on results which shall:

a. Report on the Project's progress in delivering its planned Outputs in relation to the baseline, indicating the extent to which it is on track to achieve the targets as per the results framework, and reporting progress towards outcomes.

b. Indicate how resources have been distributed across Outputs, i.e., Project/Programme's direct deliverables, based on the overall results framework.

c. Indicate major deviations from plans and problems encountered, including a brief assessment of underlying conditions and account of materialised internal and external risk factors to the Project, and explain the extent to which those within the Project's control have been handled, and

d. Include other information, as relevant, related to the implementation of the Project.

An annual financial statement on the Trust Fund, expressed in United States dollars in IMO's standard format will be prepared. For the purpose of recording receipts and/or payments, all transactions will be converted into United States dollars at the prevailing United Nations Operational Rates of Exchange (UNORE) at the time of the transaction. Any exchange difference arising from such transactions and any bank charges incurred will be charged to the Trust Fund.

Accounting and auditing
IMO prepares annual financial statements for the Organization as a whole, in compliance with international Public Sector Accounting Standards (IPSAS). The Organization has an External Auditor appointed by the IMO Assembly for a four-year term, which must be the Auditor General or equivalent of an IMO Member State. The current External Auditor is the Auditor General of Indonesia. IMO also has an Internal Oversight and Ethics Office which is independent of management, and which is complementary to the role of the External Auditor.

8. Risk Management

As the project takes part in or involves countries from fragile regions, an assessment of risks and their potential implications for the project is carried out and actions to mitigate the risks are identified. Monitoring risks through the implementation of the project is important to determine whether adjustments are needed. Three main categories, in line with the DANIDA (MFA) Aid management guidelines, have been considered. *Contextual risks* are general risks and fragility factors external to the programme that potentially can have an influence on the project. *Programmatic risks* concern risks in regards to a programme failing to reach its objectives and/or the risk of causing harm to the external environment. Finally, there are a series of internal *institutional risks,* where the shortcomings in the design of the programme itself, or a lack of resources could threaten its successful implementation.

Contextual risks

As shipping is a sector that operates internationally it is susceptible to global disruption and major geopolitical changes. In past years, major geopolitical contextual changes have had a significant impact on the maritime sector, not least the war in Ukraine, the blocking of the Suez Canal for six days by the container ship Ever Given, and the global COVID-19 pandemic, that resulted in an increased demand for shipping services and increases in freight rates, but also posed a challenge for seafarers working globally. At the moment the conflict in Israel and Palestine has led to increased security risks caused by Houthi attacks on ships sailing in the Red Sea. Additionally, natural disasters like the earthquake and tsunami that happened in Sulawesi, Indonesia in 2018, severely impacted the port of Palu, disrupting shipping and logistics as well as leading to a shift in focus and resource allocation by the Indonesian government. The context in which the industry has to operate can be unpredictable, and situations such as those just mentioned are likely to influence both the economics of maritime trade or raise serious security and safety concerns. Addressing this is likely to change priorities or influence decisions to invest in green technologies. The project must therefore be ready for possible geopolitical situations to emerge and manage the risk of external factors. As shifting geopolitical political landscapes and priorities in partnering countries can affect the ability of the project to stay relevant, the project is flexible in its design and accessible for adaptive management.

Programmatic risk

At the programmatic level, risks of failing to contribute to the project objectives primarily stem from the ability to involve the right stakeholder with will to engage constructively in the programme activities. When working with governments challenges can arise in terms of political buy in, capacity, elections and changing political priorities. IMO must prepare for periods where governments become more inward-looking, by ensuring that its work is addressing national priorities, while remaining aligned with international frameworks of addressing climate change. However, risk can be managed through a strong network of partners and stakeholders, within government and civil society, and ensuring that partnerships are built on strong regional, national and local engagement. It is likewise important not to duplicate efforts and ensure aligning the support from several donor countries to maximize impacts.

Institutional risks

At the institutional level the IMO is responsible for ensuring adequate resources to carry out the planned program activities and create the desired impact. This includes the need to leverage funding from Denmark alongside funding from other donors so that resources are sufficient. This also includes human capacities in terms of sufficient staff to implement the project and activities. It is likewise the responsibility of the IMO as the implementing partner to monitor participating countries and stakeholder's adherence to human rights and ethical practices and take action as appropriate. Potential corruption involving Danish funds would be an institutional risk factor.

The risks associated with contextual, programmatic and institutional risks as well as the risk responses is outlined in the matrix below.

Environmental risks

At the institutional level the IMO is responsible for assessing and ensuring that the implementation of the project does not cause adverse impacts to environment including biodiversity and natural resources. This

entails adopting environmentally friendly policies, strategies and work practices. The planned project activities like in-person trainings and conferences which involve travels, use of printed materials and meeting refreshments result in carbon emissions and generation of waste (e.g., food packaging waste, plastic drinking bottles). This would be an environmental risk factor to be considered.

Annex 4 provides a table, which elaborates the general project risks and mitigation strategies, including risk factor, likelihood, impact on project, risk response, residual risk and short background to the assessment.

Annex 1: Context Analysis

1. Poverty and inequality analysis

The law on international development cooperation as well as the Danish strategy on development[7] policy recognize that climate action and poverty reduction are interlinked. Access to renewable energy and alternative green fuels are central to many of the world's major challenges and opportunities be it jobs, food production and security and access to education, etc. In the multidimensional concept of poverty, a holistic view is taken. Poverty thus relates to access to a range of resources such as education, health, access to energy, and rights – and is therefore not only focused on income.

The impacts of climate change are being felt by all, but it is widely recognized that climate change will disproportionately affect poorer countries and poorer individuals within countries. The most impacted and vulnerable such as small island developing States (SIDS) and the least developed countries (LDCs) are often at the frontline, despite carrying little historic responsibility for causing climate change. The World Bank estimates that climate change will have significantly impacts on global poverty incidence in this decade pulling between 37,6 - 100,7 million people into extreme poverty by 2030.[8]

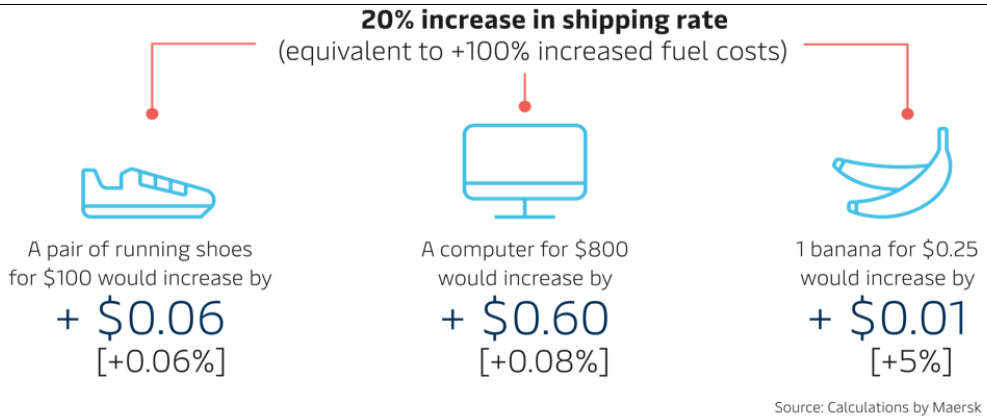
The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, sets out 17 sustainable development goals with the aim to provide "peace and prosperity for people and the planet, now and into the future". These Sustainable Development Goals are "set in recognition that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests."[9]

The shipping sector is inherently tied to trade, economic development, food security and energy, as the sector carries over 80-90 % of all world trade in volume, including transportation of energy worldwide. Therefore, the transition of the sector has global impacts, not only on reduced emissions and increased air quality especially around ports, but also potentially a future impact on countries' economies in terms of increased fuel costs stemming from more expensive alternative fuels. Higher costs will initially be borne by the industry, before being passed on to the end consumers. In rich countries, these costs may be relatively easy to bear, representing only a small share of total shipping costs. As shown in the figure below, based on calculation from Mærsk, on impacts on commodities following a 100% fuel cost increased, the largest increase in percent will be on low value commodities like food.

[7] Udviklingsstrategi_faelles_om_verden_2021.pdf

[8] World Bank, 2020: Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030: World Bank Document

[9] Why should we talk about a 'just and equitable' transition for shipping? | UNCTAD



However, developing countries may see their already relatively high shipping cost increase, exacerbating the cost of living beyond the current inflationary pressure arising from geopolitical tensions and crop failure due to climate change. This means that shipping decarbonisation may make raising living standards for the world's poorest difficult, costing developing opportunities, as already limited resources would be consumed by higher shipping costs.[10] Thus support and mitigation actions for especially SIDS and LDC's is needed. However, the green transition of the maritime sector also offers great developmental potential.

Figure 1:

Source: Green Voyage 2050 concept note

Developing countries are major players in international shipping. More than 75 % of international commercial ships is flagged in, and 36 % of shipping gross tonnage is built in developing countries. Developing countries also accounts for most global seaborne trade flows, both in terms of exports (goods loaded) and imports (goods unloaded) and supply the biggest share of seafarers to international shipping. The great impact of developing countries on international shipping indicates that the decarbonisation of maritime transport will not be successful if strong engagement from developing countries is not secured (Green Voyage Concept note).

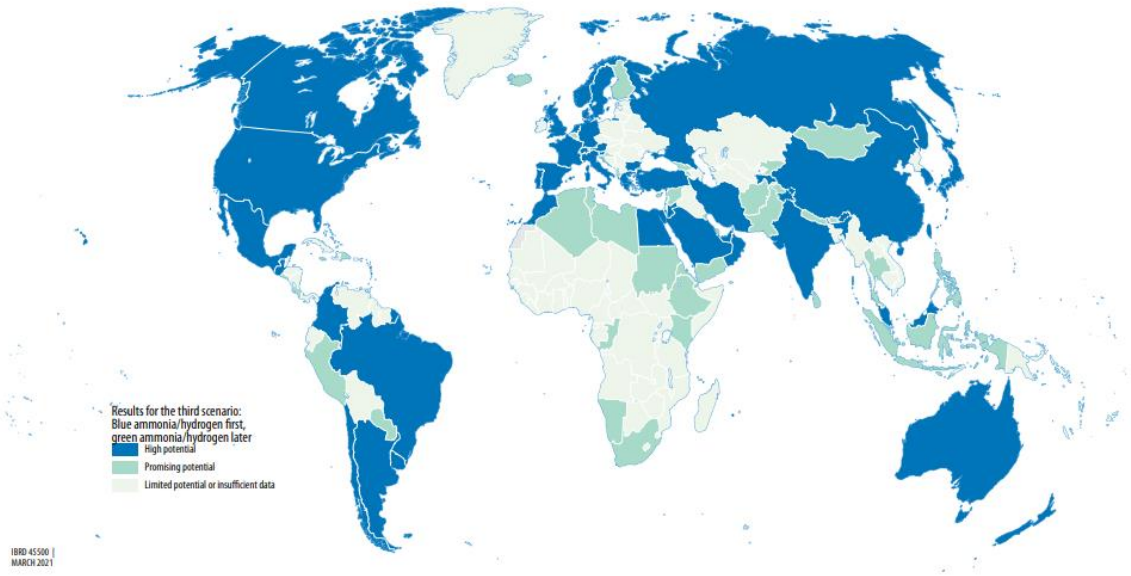
A report from the World Bank (The Potential of Zero-Carbon Bunker Fuels in Developing Countries) finds that energy efficient technologies, though a key component, will not be enough to decarbonize the shipping industry. Rather, the feasibility of reaching a net-zero target depends on the adoption and use of zero or near-zero green fuels like green ammonia and hydrogen. A report from Global Maritime Forum (GMF) estimates that investments needed to reach net-zero emission shipping in 2050 will amount to between 1.2 and 1.6 trillion US dollars. The biggest share of investments is needed in the land-based infrastructure and production facilities for low carbon fuels, which make up around 87% of

[10] Why should we talk about a 'just and equitable' transition for shipping? | UNCTAD

the total investments. The remaining 13 % of investments needed are related to the ships themselves, for example in more energy efficient technologies.[11]

The transition of the industry towards these fuels is likely to change the landscape of the bunker fuels market. This creates huge sustainable development opportunities for developing countries, particularly for those with significant renewable energy resources to produce the new green fuels at scale. Well-positioned countries include a number of developing countries, characterized by their low-cost renewable energy sources combined with other advantages, such as a strategic geographic proximity to major shipping routes.[12]

FIGURE 11: HEATMAP INDICATING THE POTENTIAL FOR COUNTRIES TO PRODUCE BLUE AMMONIA/BLUE HYDROGEN INITIALLY, AND GREEN AMMONIA/GREEN HYDROGEN EVENTUALLY



Investments in a more inclusive and decentralized bunker fuel market can support developing countries' general economic development, as well as help them achieve wider energy transition at a lower cost. The transition of the global shipping sector can unlock significant benefits for developing countries, by creating a demand for green alternative fuels creating a good business case and thereby accelerating the development of renewable energy. Under the right policies and framework conditions the transition of the shipping sector can open the door for large infrastructure investment, clean energy technology transfers, skills development of local workforce and be a driver for job creation. Realignment of the global bunker fuel market gives policymakers from developing countries the opportunity to leverage national comparative advantages during the expected period of growing demand for zero-carbon bunker fuels from 2030 onwards. Policymakers could strategically harness demand for zero-carbon bunker fuels to support investments in the decarbonization of their domestic energy systems.

[11] Getting-to-Zero-Coalition_Insight-brief_Scale-of-investment.pdf (globalmaritimeforum.org)

[12] World Bank, 2021: The potential for zero-carbon bunker fuels in developing countries

Obvious synergies between both systems could be exploited: for instance, ammonia/hydrogen could be used as an energy carrier to help compensate for the intermittency of renewable electricity generation; they could be marketed as a commodity for further industrial use within the country, or they could be exported as a low-cost renewable energy resource to other countries where no physical connection through power transmission lines exists. Additionally, these investments are able to create further development opportunities like, for instance, maritime and non-maritime infrastructure modernization and contributions to the country's wider energy transition.[13]

South Africa is an example of a country which is well positioned to benefit from international maritime decarbonization due to its vast renewable capacity and unique location close to major shipping routes at the gateway between the Atlantic and Indian oceans. Tapping into these opportunities holds the potential to accelerate the transition to cleaner forms of energy across the economy, creating several opportunities for the country[14] .

Another country is Namibia that according to cost-projections can theoretically produce some of the most cost competitive green hydrogen globally. Namibia is quite advanced in their plans to produce green hydrogen, and has already received public and private investment into the production. The European Investment Bank (EIB) and Namibia signed a Joint Declaration to unlock up to EUR 500 million in concessional finance to support the construction of key infrastructure needed for renewable generation and green hydrogen production. Namibia has also signed several Memorandums of Understanding (MoUs) on green hydrogen cooperation with industrialised economies including the European Commission, Germany, Belgium, and Japan. Its state-run port authority entered into partnership with the Port of Rotterdam to build infrastructure for hydrogen transportation and private investors have also jointly invested in the Hyphen energy project – the largest green hydrogen project in Sub-Saharan Africa[15]

Regardless of a country's ability to produce green fuels at scale or the location close to major shipping routes, the transition of the shipping sector offers an opportunity for new and more high-skilled jobs in the maritime sector across the board, not only in ports but also on-board ships. Job creation in the shipping industry's green transition plays a significant role in lifting people out of poverty in developing countries. As shipping adopts greener technologies, the demand for skilled labour grows in areas like renewable energy and eco-friendly shipbuilding. This creates new jobs that can be learned and applied locally.

According to a report by the Maritime Just Transition Taskforce[16] under a decarbonisation scenario 450.000 seafarers will require some kind of additional training by 2030, and 800.000 by the mid-2030's. Shipping's decarbonisation will require new ways of training and educating seafarers, with increased focus on Science, Technology, Engineering and Maths (STEM) skillsets, which also have the potential to attract more female employers to the industry, which is currently heavily male dominated as only approx. 2 % is women.

[13] World Bank, 2021: The potential for zero-carbon bunker fuels in developing countries

[14]Global Martime Forum: Shippings-Energy-Transition_Strategic-Opportunities-in-South-Africa.pdf (globalmaritimeforum.org)

[15] The landscape of green hydrogen in Namibia (newclimate.org)

[16] Maritime Just Transition Task Force – Position Paper – Mapping a Maritime Just Transiiton for Seafarers: Position-Paper-Mapping-a-Maritime-Just-Transition-for-Seafarers—-Maritime-Just-Transition-Task-Force-2022-OFFICIAL.pdf (ics-shipping.org)

Moreover, as green shipping becomes a priority, developing countries with access to maritime routes can position themselves as key players in the global supply chain. This strengthens their economies, increases employment opportunities, and empowers individuals to achieve financial stability, ultimately reducing poverty.

No risks have been identified that would negatively impact vulnerable or impoverished groups. On the contrary, this program is designed to support developing countries, with a particular focus on Least Developed Countries (LDCs) and Small Island Developing States (SIDS), which are recognized as being among the most vulnerable. For more detailed information on specific groups, please refer to the risk matrix in Annex 4.

Relation to the SDG's

The project delivers key inputs for a just and equitable green transition of a hard-to-abate sector. It has a strong focus on SDG13 on Climate action and SDG9 on Industry, Innovation and Infrastructure by targeting emission reductions from the shipping sector and implementation of the IMO climate strategy through capacity building in developing countries. One overall objective of the 2023 IMO GHG Strategy is ''enhancing IMO's contribution to global efforts by addressing GHG emissions from international shipping. International efforts in addressing GHG emissions include the Paris Agreement and its goals and the United Nations 2030 Agenda for Sustainable Development and its SDG 13: *"Take urgent action to combat climate change and its impacts"*; (from the strategy text)

The project also addresses SDG8 on decent work and economic growth and SDG7 on Affordable Clean Energy by supporting the development of feasibility studies investigating investment opportunities within alternative fuel infrastructure. The focus on energy efficient pilot projects also directly relates to the SDG7 sub target of doubling the pace for improvements in energy efficiency before 2030.

Furthermore, as Green Voyage 2050 foresees the development of Gender Action Plan, which will support women empowerment in an impactful manner, specific to the needs of the project, the project is also positively affecting SDG5.

Are additional studies/analytic work needed? How and when will it be done?

As Green Voyage phase II has been informed by the lessons learned from the first phase and a concept note on this basis has already been formulated, no additional studies or analytical work required prior to the Danish support. Studies on concrete pilots will be carried out throughout the project.

IMO's GHG Technical cooperation Trust Fund will carry out a study to assess needs in relation to the implementation of the IMO GHG Strategy in four lead countries.

2. Political Economy and Stakeholder Analysis

IMO process and stakeholders

In the shipping sector, IMO is the central institution for development and implementation of regulation, setting standards for safety, seafarer training, and environmental protection. The IMO was established in 1958 as the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. Today the IMO has 175

member states. The IMO is responsible for administering various international treaties and agreements related to the safety, security, and environmental aspects of international shipping, including the International Convention for the Prevention of Pollution from Ships (MARPOL).

Since the first meeting of the UNFCCC Conference of Parties (COP) in 1995, where the COP invited IMO to control emissions from the international shipping, the IMO has been responsible for monitoring and regulating emissions from international shipping sector (Decision 4/CP.1). The member states of the IMO adopted the initial GHG strategy to reduce emissions from shipping in 2018, which was followed up with the adoption of short-term measures targeting energy efficiency of both new and existing ships (CII, EEXI, and EEDI) in June 2021. Recently, in July 2023, the member states of the IMO have adopted a revised climate strategy. The strategy significantly strengthens the initial strategy from 2018 and includes an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e., close to, 2050, and a commitment to ensure an uptake of alternative zero of minimum 5% in 2030. Negotiations on regulatory medium-term measures to implement the revised strategy is currently ongoing and is according to the agreed timeline set to be adopted in late 2025.

IMO strives to reach decisions by consensus. The 2023 IMO GHG strategy was adopted unanimously and it is therefore expected, that all states will approve of support towards its implementation, especially when focusing on the needs of developing countries, as also highlighted in the strategy. After the MEPC has reached a decision, amendments to mandatory IMO instruments, such as MARPOL Annex VI, follow an 'approval' and 'adoption' stage. Adoption follows 'silent approval', which means that unless a Party states an explicit (partly) reservation, it deems to accept the amendment.

In 80th session of the Marine Environmental Protection Committee (MEPC80) which was the committee meeting of the adoption of the revised strategy approximately 100 flags were raised, including industry and environmental NGO's which are also represented. During the negotiations of the strategy, it however became apparent that there is a lack of representation of certain regions and that especially voices from climate vulnerable countries were missing (see point 4 below).

The central countries and actors essentially driving the negotiations with continuous statements, co-sponsorships to important submissions with details proposals, and participations in informal meetings is much fewer and can be found a handful of strong maritime states, big economies and large flag states. These states are representative of large like-minded country groups which support GHG-related interventions because of various reasons (e.g., similar maritime interests, regional interests, or geopolitical alignment). The IMO secretariat is also a central player in facilitating the discussions and implementing programmes and project supporting the green transition.

IMO funds and programmes to address the needs of developing countries

IMO manages a range of funds and programmes aimed at enhancing the capacity of developing countries within areas connected to the green transition – for example training of seafarers, energy efficiency improvements, awareness raising, and creating analysis as background information for regulatory decision-making. Related to green shipping the following can be highlighted;

- **The Integrated Technical Cooperation Program (ITCP):** Many developing countries cannot yet benefit from to the IMO's instruments. For this reason, the IMO established in 2019 the ITCP with the purpose of assisting countries in building up their human and institutional capacities for uniform and effective compliance with the IMO regulatory framework. The ITCP engages within a range of maritime subjects including environmental protection.

- **IMO GHG TC-Trust Fund:** MEPC 79 in May 2019 agreed to establish the GHG technical cooperation fund because of the need to provide a dedicated source of financial support for technical cooperation and capacity-building activities to support the implementation of the initial IMO Strategy. IMO's Marine Environment Division (MED) is the principal implementing office of the Trust Fund.
- **Voluntary Multi-Donor Trust Fund for financial support to attend IMO GHG meetings (VMDTF for participation):** The IMO council endorsed in March 2023 the establishment of the VMDTF providing financial assistance to representatives of developing countries, in particular SIDS and LDC's, in attending the meetings of MEPC and ISWG-GHG. MED is the principal manager of the fund that sponsored participant for the first time for ISWG15 and MEPC80 in June and July 2023.

In addition, the Subdivision of Partnerships and Projects supports long-term implementation efforts of developing countries, through various projects, including ones related to the implementation of the 2023 IMO GHG Strategy:

- **Global Maritime Network – Maritime Technologies Cooperation Centers (GMN):** is a network of five regional maritime centers working to promote energy efficient technologies and operations. Developing countries and especially SIDS and LDCs are the primary beneficiaries. This global project, which is the second biggest in IMO's GHG project portfolio, is funded by the EU with 10 million USD over a four-year period and is currently in phase II.
- **GHG SMART**: Is a maritime training programme funded by South Korea which aims to support the implementation of the IMO GHG Strategy by initiating capacity building activities for SIDS and LDCs through a series of training courses.
- **IMO Cares**: is an IMO implemented project, funded by the Kingdom of Saudi Arabia, focused on technology solutions for domestic shipping (under 5,000 GT) and ports.
- **Green Voyage 2050**: is a rather large global project, primarily sponsored by Norway, with above 27 million USD, providing support to developing countries in their efforts to reduce GHG emissions from ships, in line with the levels of ambition set out in the IMO GHG Strategy. It is envisaged that the project will strengthen MARPOL Annex VI compliance, facilitate sharing of operational best practices, support the development of NAPs, catalyse the uptake of energy efficient technologies and explore opportunities for low- and zero-carbon fuels.

Also, outside IMO a few countries led initiatives like the Green Shipping Challenge led by the United States and Norway, supported by Denmark, aims to engage actors all along the shipping value chain to contribute to a green transformation of the shipping sector in line with the 1.5-degree temperature goal of the Paris agreement. Denmark at COP28 announced an initiative under the Green Shipping Challenge to enhance capacity building in developing countries to enable implementation of the IMO GHG Strategy. This project, which is one of Denmark's main contributions to this initiative, will engage with some of the key actors working to build capacity in developing countries to implement the IMO strategy including the IMO secretariat, who will be the key implementing actor, and donor countries to Green Voyage to ensure that knowledge and capacity of developing countries to take part in and benefit from the transition of the shipping sector.

Are additional studies/analytic work needed? How and when will it be done?

No additional analysis needed

3. Fragility, Conflict and Resilience

Developing countries are the target group of the project with a specific focus on Africa. Opportunities for economic growth and wider energy transition through production of alternative fuel and development of alternative fuel infrastructure, socio-economic opportunities for maritime job creation, as well as reduced climate impacts and local pollution can all be relevant factors in strengthening resilience and mitigating against conflicts over energy and unemployment.

While Africa and other developing regions/countries addressed by the project have seen and can be still be seen as areas prone to conflict, in line with recent UN SDG reports, general trends showcase positive developments in relation to all SDGs related to socio-economic factors, including SDG5.

IMO has a strong network of partners in all the beneficiary countries, including many times developing countries permanent representations based in London (IMO Headquarters), maritime administrations, IMO regional presence scheme, as well as project level established wider government engagement forums, stakeholder networks.

IMO has been also working closely with multilateral development banks through its FINSMART Roundtable, highlighting decarbonization investment needs particularly in developing countries and supporting its ongoing pilots both to ensure co-financing and follow-up to project results with impactful investment.

In addition, IMO has been collaborating with other UN Agencies to ensure mitigating geopolitical and other relevant risks and link more closely to energy ministries, overall, to alternative fuel transition (including ongoing cooperation with IRENA, UNCTAD, FAO and UNDP).

By collaborating with national, regional, and international partners, including governments, civil society organizations, and multilateral agencies, GreenVoyage2050 seeks to maximize the impact of its engagements and contribute to broader efforts aimed at promoting peace, stability, and sustainable development in maritime regions. Entry points for partnerships include capacity-development programs, pilot project development, and policy advocacy initiatives that also can have a positive impact on the empowerment of women and youth in the maritime sector.

Are additional studies/analytic work needed? How and when will it be done?

No additional analysis needed.

4. Human Rights, Gender, Youth and applying a Human Rights Based Approach

Given the role of shipping as a broader enabler of trade and economic development, it continues to be strongly interconnected with basic rights such as the right to food, health, energy, and education. Concretely, the project is related to several of the principles of the human rights-based approach; hereunder especially non-discrimination, inclusion, and transparency.

Underrepresentation in the IMO GHG negotiations

During the recent negotiations of the revised IMO strategy a lack of attendance from developing countries was apparent. Especially LDC's and African states were poorly represented (see box below). The challenge for particularly smaller and vulnerable developing countries, especially SIDS and LDC's, is related to the lack of capacity, but the challenge is twofold. First of all, countries lack both personnel, as they often have small maritime administrations, and financial resources to participate in the negotiations in IMO in London. Secondly, they lack knowledge and information of the IMO process as well

as technical understanding, which makes it inherently more difficult to participate actively in the negotiations.

The adoption of the revised IMO climate strategy at MEPC80 in July coincided with the beginning of phase 2 in the IMO negotiations in regulatory measures that is to be agreed upon at MEPC82 in the autumn of 2025. As there is a large overlap between the two agendas and it generally is the same persons following both, the underrepresentation of developing countries is a challenge that persist going forward in the negotiations of future regulatory measures for the international shipping sector that is to implement the strategy.

Analysis of attendance of African region at December 2022 IMO meetings

Of the 45 African Member States of the IMO:
24 Members (53 %) were registered for MEPC 79
10 Members (22%) had representatives at the WG on GHG either online or in person
7 Members (16%) spoke at MEPC 79 on GHG Emissions:

- Kenya, Liberia, Morocco, Namibia, Nigeria, South Africa, Ghana

Analysis of attendance of LDCs at July 2023 IMO meetings

Of the 33 LDC Members of the IMO:
10 Members (30%) Registered for MEPC 80
8 Members (24%) Spoke at MEPC 80 on GHG Emissions:

- Angola, Bangladesh, Kiribati, Liberia, Madagascar, Solomon Islands, Tanzania, Tuvalu

12 Members (36%) Registered for ISWG 15
6 Members (18%) Spoke at ISWG 15:

The underrepresentation of especially climate vulnerable countries can have a significant effect on the outcome of the negotiations. Not only in terms of the overall level of ambition, but also on which measures that can be agreed upon, how possible negative effects from the IMO climate regulation on developing countries' economies should be addressed, and how a potential revenue from a GHG pricing mechanism should be distributed. All matters with the potential to greatly impact the development of vulnerable countries.

MEPC recognizes the challenge of participation and in the IMO strategy it is therefore stated that *"The Committee recognizes the challenges that some delegations of developing countries, in particular LDCs and SIDS, may face in participating in the work of the Organization, in particular on GHG related matters. In this regard, the Organization should periodically assess the provision of financial resources through the Voluntary Multi-Donor Trust Fund as established by the Organization for the purpose of assisting developing countries, in particular LDCs and SIDS, in attending the meetings of MEPC and the Intersessional Working Group on Reduction of GHG emissions (ISWG-GHG)."*

Transparency:
In the part of the project that relates to support for Green Voyage it is a Danish priority in line with the Green Voyage Programme, that analysis and studies are publicly available with the aim of informing stakeholders and society as a whole. It is also a priority that vulnerable groups are taken into account in the dialogue on new regulation and policy where relevant.

Gender:
MO is strongly committed to the UN Sustainable Development Goals (SDGs), particularly Goal 5: Achieve gender equality and empower all women and girls. Accordingly, Member States are encouraged to include women when they nominate candidates for delegations to attend IMO meetings. IMO also cooperates with a number of regional organizations for women in maritime. The IMO Secretariat Gender Equality Strategy, led by the Executive Office of the Secretary General and supported by a cross-divisional gender group, establishes an institutional framework within IMO with a view to creating an enabling work environment that embraces equality and diversity, and reduces bias for all IMO staff, in full alignment with the UN System-wide Action Plan on Gender Equality and the Empowerment of Women (UN-SWAP) and resolution A.1147(31) (Preserving the legacy of the World Maritime Theme for 2019 and achieving a barrier-free working environment for women in the maritime sector) and in accordance with the Seven Women's Empowerment Principles.

To align with the common efforts and to accelerate the gender mainstreaming in the UN System, IMO has been taking part in the UN System-Wide Action Plan on Gender Equality and Women's Empowerment (UN-SWAP). Launched in 2012, UN-SWAP calls to align or develop respective specific gender strategies and implementation plans and provides a baseline with measurable indicators on standardized institutional functions and results, with a comprehensive set of gender equality requirements to achieve the full implementation of Sustainable Development Goal (SDG) 5. The participation in UN-SWAP survey has resulted in indications of progress in several areas of improvement, especially on the side of oversight; human and financial management; and knowledge, communication and coherence.

The 2019 World Maritime Theme: "Empowering Women in the Maritime Community" and IMO Assembly resolution A.1147(31) "Preserving the legacy of the World Maritime Theme for 2019 and achieving a barrier-free working environment for women in the maritime sector" served as pivotal foundations to solidify IMO's longer-term commitment.

Furthermore, the Organization's Strategic Plan for 2024-2029 highlights the principles of inclusivity, equality, diversity and empowerment of women. These provide a clear and definitive direction, establishing the groundwork that emphasizes the importance of sustained efforts.

IMO has been advocating for greater gender diversity in the maritime sector and have highlighted the importance of participation of women in maritime professions. Women make up only an estimated 2% of the world's maritime workforce17 with women often underrepresented in technical and leadership positions, and most women seafarers working mainly in the cruise and ferries sectors.

IMO's Women in Maritime Programme has been supporting for past decades women empowerment in maritime and past few years, also under the slogan: "Training-Visibility-Recognition", IMO has taken a strategic approach towards enhancing the contribution of women as key maritime stakeholders. IMO continues to support the participation of women in both shore-based and sea-going posts.

In addition to Women in Maritime, now under the IMO Secretariat's Gender Strategy, IMO also prioritizes mainstreaming gender equality considerations into programming and planning to ensure proactive steps to address disparities and promote equitable outcomes. In relation to this, the Secretariat has developed, following best practice from other UN agencies, but in a maritime specific manner, gender markers, which are to enable marking gender contribution of all projects on activity level with aim to establish a positive trend and more knowledge and requirement to establish gender as much as possible on activity level.

IMO has in line with the above, not just Women empowering specific flagship programmes and projects (next to Women in Maritime, the SMART-C Women project is also fully dedicated to helping increase women employment opportunities and career advancement in the maritime sector in the ASEAN and Pacific region) support gender equity in IMO, but gender mainstreaming is ensured in all IMO major projects, including GreenVoyage2050, IMO CARES, GloFouling Partnerships, GloLitter Partnerships, SENSREC, GHG SMART and TEST Biofouling, both on objective and monitoring levels, with generation of gender specific data as well.

Examples of this include but not limited to, the organization of regional workshops specifically targeting women in maritime under IMO CARES project in Africa and Caribbean regions and under GloFouling Partnerships in the MENA region), also through specific panel discussions in R&D biofouling forums under GloFouling and TEST projects. 'She Champions' are identified under TEST Biofouling project, in addition to the male candidates supporting women under 'HeForShe' programme, and Women in Biofouling networking group is established.

Similarly, women leaders who are active in promoting MPL reduction are connected through a global forum, while GreenVoyage2050 is already promoting women working in the maritime sector through a Careers in sustainable shipping video series.

Further impactful gender activities include, the SENSREC project prompting the review of existing legislation and addressing other barriers that prevent women incorporation to the ship recycling industry in Bangladesh. Actions include gender sensitisation events and a careers fair to increase women awareness about transferable skills and career opportunities. Under MPL portfolio, the idea of seed funding pilot initiatives to encourage women to get engaged in MPL from fisheries with support from local women NGOs (FAO) is implemented.

GHG SMART project ensures gender balance by establishing that 50% of the trainees participating to the programme must be women. The same gender ration is applied to the World Maritime University (WMU) Scholarship programme, with one female and one male trainee selected.

Gender is included, as described and showcased by few examples in all IMO major projects, but in a project specific manner, to enable maximum impact.
Green Voyage 2050 also foresees the development of a project-specific Gender Action Plan, which will lay out the most effective and impactful actions to contribute to gender mainstreaming within the project (to be developed in 2025). Furthermore, the project is closely collaborating with other relevant IMO projects which have a gender element as well as with the IMO Women in Maritime Programme.

Human Rights:

In addition to providing technical support and directing its efforts to realizing positive changes on national and policy levels, IMO aims also through its projects to widen its social impact by including human rights and gender equality at the core of its focus, both on the planning, as well as on the implementation levels of its ongoing projects in a project specific manner.

The Human rights-based approach and its principles will be ensured throughout also the Green Voyage 2050 project to ensure participation, non-discrimination, accountability and transparency. The project will have an indirect impact on the citizens of the participating regions and beyond by contributing to their right for safe environment, clear air and water, sustainable and safe transport and transparent information. The project will respect the UN Guiding Principles on business and Human Rights by states and business enterprises.

Green Voyage 2050 will also pay attention to ensure and enable the participation of people with disabilities in the activities, and to ensure that the achieved results will be accessible for people with disabilities. The principle of Leave No-one Behind will be mainstreamed to ensure that the creation of decent job can benefit persons with disabilities.

Furthermore, important to note, that the objective of the project, reducing GHG emissions of particularly in developing countries where many people are reliant on the socioeconomic benefits of their marine resources and vulnerable to effects of climate change has strong positive impact in terms of protecting the rights of people to a clean and healthy, sustainable environment.

The project also aims to establish a global stakeholders' partnership, with a particular focus on developing countries and thereby supporting local actions for green recovery, including by empowering local communities as engines for systemic change for sustainable development. To date there has been limited participation of developing countries in addressing GHG emissions from shipping on the ground. Therefore, assisting these countries, and their respective stakeholders, to raise awareness of the issue, to build capacity, and to collect information to assist the policy dialogue on GHG emissions from shipping will therefore enable people form those countries to participate in decision-making processes in a non-discriminatory and transparent manner, in line with the human-rights based approach.

Anti-corruption and Prevention of Sexual Exploitation, Abuse and Harassment (SEAH):

The IMO has a policy of zero-tolerance regarding proscribed practices. The IMO's Policy and Procedures on the Prevention and Detection of Fraud and Serious Misconduct as appended to the Staff Regulations and Staff Rules (Appendix F) outlines responsibilities, reporting mechanisms, and investigation procedures related to fraudulent acts. All staff, contractors, and partners share the responsibility for preventing and reporting fraud with a function operating independently of other parts of the Organization called Internal Oversight and Ethics Office (IOEO) being responsible to function as a reporting facility and to initiate the investigation of suspected fraud.

As part of the prevention of Sexual Exploitation, Abuse and Harassment (SEAH), IMO applies its Policy and Procedures for Investigation of Alleged Breaches of IMO Policy on right to Work in a Harassment Free Environment. This policy is appended to the Staff Regulations and Staff Rules (Appendix E). It outlines responsibilities, preventive and corrective measures, as well as investigation procedures for the prohibited conduct falling under the definitions of SEAH, also stipulated in the policy.

Are additional studies/analytic work needed? How and when will it be done?
No additional analysis needed.

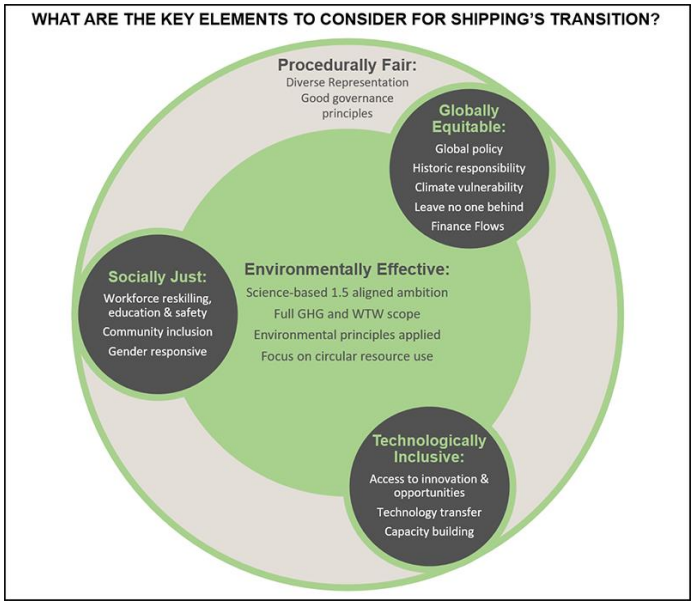
5. Migration

The project does not target issues around migration directly, but can have positive indirect effects on the basis of improved socio-economic conditions and creation of job opportunities. As shipping is a global sector not tied to a particular country or context, job opportunities for migrants with seafaring skills is universal regardless of being displaced or not.

Are additional studies/analytic work needed? How and when will it be done?
No additional analysis needed

6. Inclusive sustainable growth, climate change and environment

The project has throughout all the activities a strong focus on climate change mitigation as well as inclusive sustainable growth. A global sector like the shipping sector requires a global transition where also developing countries are able to benefit and take advantage of strategic economic growth opportunities – for example within scalable green fuel production – and green job creation. The climate targets of the IMO climate strategy will not be reached if the global south is left behind, hence the call for a just and equitable transition.



The green transition of shipping is not only technological - it is a socioeconomic transition that is part of a wider context of sustainable development. The overarching political mandate for an equitable transition can be found in the UN goals, frameworks, and principles, particularly the UN 2030 Agenda for Sustainable Development. At COP26 in 2021, the Climate Vulnerable Forum with its 55 developing country members adopted the Dhaka-Glasgow Declaration, which among other issues, recognizes the need for shipping's transition to be equitable. Developing countries, SIDS, and LDCs are at risk of losing out in the transition of the shipping sector. They may get 'left behind', with investment and innovation primarily favouring developed economies, leaving them burdened with environmentally damaging ships and technologies for much longer than other parts of the world. [17] At the same time, they will experience rising costs and potentially reductions in trade-driven economic development.[18] The project will aim to address these challenges in targeting investment needed for the transition in developing countries by facilitating further funding based on carried out pilot project in energy efficient solutions and feasibility studies as well as support for the development of conducive national framework conditions and national action plan, that is a prerequisite to attract investments and is missing in many developing countries.

Lack of knowledge of technical energy efficient solutions to reduce emission reductions and economic impacts

The alternative fuels for the shipping industry will come at an increased cost – some estimates that the fuel cost will be at least double from the 2030s to the 2050s across different fuels with the largest price gap projected at around ten times the price of fossil fuels.[19] For many developing countries heavily dependent on import by ships, for example pacific SIDS, the increased cost can be an obstacle for development, as these countries already face relatively high transport and logistical costs.

One of the most effective ways to mitigate increased fuel costs is to implement technical and operational energy efficiency solutions that can lower the amount of fuel needed for a journey, which in turn

[17] UNCTAD:

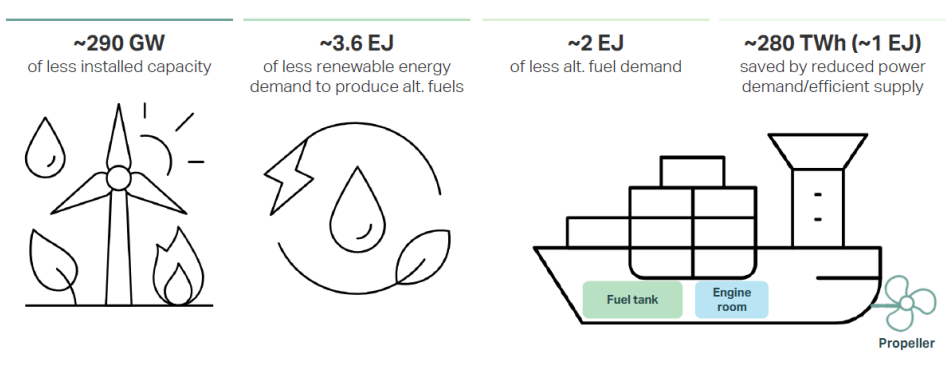
[18] Getting-to-Zero-Coalition_Insight-brief_Decarbonizing-shipping-while-ensuring-an-equitable-transition.pdf (globalmaritimeforum.org)

[19] Getting to Zero Coalition and UMAS: A Strategy for the Transition to Zero-Emission Shipping An analysis of transition pathways, scenarios, and levers for change, s. 86: Transition-Strategy-Report.pdf (u-mas.co.uk)

mitigates increased freight rates due to rising fuel costs. Therefore, the capacity to pilot test and implement new alternative energy efficient solutions and create the right regulatory incentives locally and nationally will be crucial not only to the transition of the shipping sector, but also for countries wider economies. However, energy efficient solutions are across the international fleet not being implemented in the scale needed, this is true not least for developing countries that lack both technical capacity as well as finances to support feasibility studies and pilot projects.

Studies show, that despite the increasing attention around decarbonisation, ongoing and planned actions are still not enough to translate into sufficient emission reductions to meet the requirements of the IMO strategy. As global maritime trade is forecasted to grow, we can expect emissions to grow by 10-20% in 2050 compared with today. Therefore, we need decarbonisation efforts and strategies to reduce the emissions associated with individual vessels, routes, or companies.

Figure: Energy savings on ships leads to multi-fold reductions in the value chain



Source: Mærsk McKinney Møller Center for Zero Carbon Shipping

Reducing fleet energy demand also has a multi-fold reduction on the resource demand upstream in the value chain. The current global fleet energy consumption of 12.6 EJ (exajoule) results in 1.2 GtCO2eq[20] of GHG emissions every year. Improving on board energy efficiency by just 8 % could save 1EJ, equivalent to 24 million tonnes of fuel each year, or the equivalent of the energy consumed by a country like Mexico in a year. Saving 1 EJ of energy across the fleet could reduce demand for alternative fuels by, for example, 50 million tonnes of e-ammonia, therefore reducing the demand for renewable electricity by approximately 140 GW of installed capacity, creating a good business case for energy efficiency not only in relation to fuel cost savings, but also reducing the needed installed renewable energy capacity on land (MMMCZCS, 2022). Reducing the energy demand from shipping on the upstream value chain is also likely to contribute towards national NDC's.

Are additional studies/analytic work needed? How and when will it be done?
No.

7. Capacity of public sector, public financial management and corruption

The capacity issue of developing countries receiving support through the IMO funds and the Green Voyage programme is the main challenge the project will address. Capacity of states to participate in the development of international regulation, enforce current IMO regulation, engage in projects and

[20] GigaTon CO2-equivalents

partnerships, and transform public policy informed by the development of National Action Plans (NAP) or act based on feasibility studies is central to the project.

The 2023 IMO GHG Strategy identified key barriers that need to be addressed in order to achieve its ambitions. They include capacity building of authorities and the need for creation of opportunities for developing countries, LDCs/SIDS to take part in the value chain of production and distribution of zero and near-zero emission fuels and/or energy sources for international shipping. As well as the importance to initiate efforts to explore renewable fuel production opportunities to be made available to international shipping, notably in developing countries, including LDCs and SIDS (see context analysis point 1 above). However, to realize these opportunities many developing countries need support to overcome the barriers and built more capacity in several areas in order to not be left behind in the green transition of the maritime sector. The project is designed to address the barriers related to lack of capacity in several ways.

Lack of financial, regulatory and human capacities
First of all, developing countries face an evident challenge when it comes to the financial aspects of the energy transition. Many developing countries, but especially SIDS and LDCs, will require technical and financial support to mitigate the cost of adjusting to climate neutral shipping. For the countries that stand to benefit from the transition, support is needed in term of unlocking the development potential; not least support for securing investments at scale. In many developing countries, there is a lack of resources and technical knowledge needed to identify opportunities, develop prefeasibility and feasibility studies that can be presented to investors as foundation for viable business models and investments.

Secondly, in order to unlock national benefits, there is a need to support the development of a stronger policy framework capable of facilitating the transition to zero emission shipping. Forward-looking policies can accelerate the required shift, mitigate uncertainties, and ensure maximum benefits of the energy transition. This would require more clearly defined national objectives to ensure benefits are realized through development of National Action Plans, which is likewise often a prerequisite for securing finance from for example regional development banks. Capacity building and assistance will continue to be required for the transformation of policy into concrete actions at the national level, and the project will therefore support developments of NAPs in selected developing countries.

Thirdly, the project will also support the development of an African regional action plan to support capacity building in the maritime administrations through knowledge sharing on national best practices on green shipping and coordination among regional stakeholders to enhance the impact of African countries in the IMO. The lack of a forum for regional maritime coordination was highlighted at the regional conference on green shipping (February 2023 in Accra, Ghana) as a serious issue impacting African states possibilities to participate in the transition.

Capacity to participate in programme and implement project outcomes
The capacity of IMO to implement the project is explained further in Annex 2: Partner Assessment. The capacity of partnering countries to participate in the project and absorb learning is a key concern, that will be continuously evaluated to target the support. In all project activities, an expressed wish to participate in the programme is a prerequisite for support to ensure engagement. Therefore, partnering countries will be selected based on open calls and local wishes for support for needs assessments etc.

Anti-corruption measures and SEAH policies

The donation will not be given as grants to partnering countries, but as support to specific projects or funds keeping the financial management from receiving states at a minimum. The total budget cannot be exceeded and shall be used for the agreed purposes only. IMO will produce an annual report reflecting progress made on the result framework (See Annex 3) as well as publish annual financial statements for the VMDTF for participation, the IMO GHG TC Trust Fund, and the Green Voyage 2050 programme.

In relation to anti-corruption policies and measures, important to note that IMO has a zero-tolerance policy on fraud and our anti-fraud policy is embedded in the Staff Regulations and Staff Rules.

In addition, in case implementation is supported not just by IMO staff, but also by implementing partners, all our Implementing Partnership Agreements also include lengthy clauses on proscribed practices including fraud, corruption, harassment, sexual harassment, sexual exploitation and abuse and defines the IMO's authority to investigate these allegations.

We also have a stand-by investigation consultant who is ready to launch an investigation anytime and a stand-by contract with an investigation firm that would require more specialized skills in forensic investigations as well.

Quality and capacity of PFM in general and at sector level, including budget credibility, comprehensiveness and transparency as well as control and external scrutiny/audit in all phases of the budget process.

Under the Implementing Partnership Agreement (IPAs):

The Partner is to commit to fulfilling the requirements defined in the IMO Standard Clauses on Ethics, Oversight and Illegal Activities, to refrain from accepting instructions from any Government or authority external to IMO or any conduct that would adversely reflect on IMO, shall not engage in any activity which is incompatible with the mandate of IMO, and is responsible for selecting reliable persons who will perform effectively, respect human rights as defined in the Universal Declaration of Human Rights and the local customs as applicable and conform to a high standard of moral and ethical conduct. When placing orders or awarding contracts, the Partner shall ensure safeguarding the principles of highest quality, economy, efficiency, transparency, and value for money.

Financial Reports and progress reports of the Project are required in a timely manner. IMO reserves the right to request additional supporting information. Failure to comply with the reporting obligations may lead to termination at no cost to IMO. Accurate and up-to-date records and documents in respect of all expenditures and complete and accurate records of equipment, supplies are to be kept, and proper custody, maintenance and care of all equipment, non-expendable materials, or other property furnished or financed by IMO is to be maintained. In cases of damage, theft or other losses of property, the Partner shall provide IMO with a comprehensive report, including a police report.

The corruption situation and relevant anti-corruption measures and reforms within the IPAs:
IMO requires the Partner to conduct Periodic financial audits by external auditing professionals or by a government's independent supreme audit institution following consultation with IMO (IOEO). IMO may conduct assessments, including, ad-hoc audits, spot checks and/or investigations of the Partner (and its personnel, as appropriate) including the Partner’s capacity to perform its obligations and the Partner’s internal control framework in a manner satisfactory to IMO. The Partner shall provide its full and

timely cooperation with any assessments, audits, spot checks and/or investigations. All assurance and investigation reports will be shared with the Donor upon request.

Either Party may suspend implementation of all or part of the Project, programme or activity if circumstances (such as Force Majeure) make continuation too difficult or dangerous. The Party suspending must inform the other Party without delay and provide all the necessary details. When IMO has given notice of suspension to the Partner and the cause of suspension is not rectified or eliminated within 30 days, IMO may, by written notice at any time thereafter during the continuation of such cause: (a) terminate the Project; or (b) terminate the management of the Project by the Partner, and entrust its management to another institution.

If the Partner materially fails to implement the Project in accordance with the period specified or in the manner required under the Agreement; or if the deliverables do not conform to the requirements under the Agreement; or if the Partner breaches any material obligation, IMO gives the Partner a written notice describing the instances of default and giving the Partner a reasonable opportunity to cure. If the Partner does not cure the default within the period specified in the written notice, IMO may, without prejudice to any other rights available to it, terminate the Agreement for default by written notice, specifying the reason for the default, the portion(s) of the Agreement defaulted and the effective date of termination.

Are additional studies/analytic work needed? How and when will it be done?

No additional analysis is required.

8. Matching with Danish strengths and interests, engaging Danish actors and seeking synergies

Danish strengths and interests

Denmark is, as the 12th largest flag state, one of the world's leading maritime nations. Denmark is one of the largest shipping nations in terms of operated tonnage and shipping is the largest export industry in Denmark exporting DKK 529 billion in 2023.

Due to the size of the Danish shipping industry a sizable network of companies delivering maritime equipment and developing technological as well as green solutions is located in Denmark. As the world's sixth largest exporter of maritime equipment, a major part of the world's fleet has Danish equipment on board. Especially within energy solutions for green shipping Danish companies is leading the way, and a transition of the global sector thus presents a great export potential.

THE DANISH MARITIME INDUSTRY IN NUMBERS

- Danish ship-owners transport approx. 10% of global trade (2018).
- Denmark ranks 5th globally measured on operated tonnage (GT).
- Denmark is the 2nd largest shipping nation in the EU (GT).
- Shipping is the largest export industry in Denmark and accounts for about 22% of total Danish exports

Sources: Annual Report Danish Shipping 2022.

Denmark can be considered a leading maritime hub as stakeholders all along the maritime value chain are gathered. In Denmark maritime actors, being it authorities, private companies, ports or universities, work relatively close to ensure good framework conditions for development and deployment of

green shipping technologies. This also means that extensive experience exists in both the public and private arenas, which can be activated in this project where relevant.

Seeking synergies
The Danish Maritime Authority is engaged in several strategic sector cooperation (SSC) projects with developing countries; two long-standing cooperation in Ghana and China, two newly established ones with Indonesia and India, and an upcoming cooperation with Kenya. The strategic sector cooperation is a long-term cooperation between the Danish Maritime Authority and a relevant maritime authority in a developing country, which tackles selected capacity challenges where the DMA's competences can further improvements, including on topics related to green shipping.

The sector cooperation projects strengthen bilateral relations and can contribute to increased contact between stakeholders in Denmark's maritime sector and their counterparts in partner countries, benefiting both parties. Furthermore, the sector cooperation projects build mutual trust and facilitate the exchange of experiences on best practices and technologies across a wide range of areas, including sustainable solutions. Last but not least it provides a platform for policy dialogue such as the negotiations on Greenhouse gas reductions at IMO.

A maritime sector counsellor is deployed at the Danish Embassy in the partner countries to facilitate the project and its linkages. Through the Danish seat in the Green Voyage Steering committee as well as the yearly meeting in the project steering committee synergies with existing maritime sectoral cooperation will be sought and the maritime sector counsellor should be included where relevant. The relevant maritime counsellor and Danish embassies can also participate if the project activities are being carried out in countries like Ghana or Kenya. This involvement may include providing local insights, facilitating communication with local authorities, and offering support to ensure that the project aligns with local regulations and practices. This could help establish smoother collaboration in these regions.

On a policy level the project is well aligned with the Danish Strategy for Development Cooperation "The World We Share" adopted in 2021, which has a clear focus on supporting developing countries and growth economies to transition from black to green energy solutions as key enabler for a sustainable development as well as a strong focus on the African region. It will also complement other Danish forms of support to accelerate a global energy transition such as the Danish government-to-government support through the Danish Energy Agency, where synergies with the maritime decarbonisation especially in ports can be sought, or the DMA's bilateral sectoral cooperation in several developing countries.

Is any additional analysis needed? How and when will it be done?

No additional studies or analytical work required.

Annex 2: Partner Assessment

1. Brief presentation of partners

The International Maritime Organization (IMO) was established in 1948 as a specialized agency of the United Nations responsible for regulating international shipping. Headquartered in London, United Kingdom, the IMO serves as the global focal point for maritime affairs, setting standards, developing regulations, and facilitating cooperation among its member states to ensure the safety, security, and environmental sustainability of international shipping in cooperation with its 176 Member States, of which more than a third are classified as Small Island Developing States (SIDS) or Least Developed Countries (LDCs). IMO has developed more than 50 international treaties, together with related standards, guidelines and other instruments, which governments are responsible for implementing.

When it comes to defining developing countries, IMO follows the DAC list/developing countries that can receive ODA assistance: DAC List of ODA Recipients | OECD.

With a diverse workforce comprising professionals from various maritime and technical backgrounds, the IMO employs approx. 300 staff members who work collaboratively to address a wide range of maritime issues, including safety, security, environmental protection, and regulatory compliance.

One of the IMO's most critical mandates is to address greenhouse gas (GHG) emissions from the shipping industry. Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL Convention), which entered into force in 2005, contains regulations aimed at reducing air pollution from ships, including provisions for controlling emissions of sulphur oxides (SOx) and nitrogen oxides (NOx), as well as regulation to address GHG emissions from ships. Additionally, in 2023, IMO has adopted the revised IMO GHG Strategy which includes an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e., close to, 2050, a commitment to ensure an uptake of alternative zero and near-zero GHG fuels by 2030, as well as indicative checkpoints for 2030 and 2040. Through these regulatory frameworks and strategic initiatives, the IMO plays a pivotal role in shaping the future of sustainable shipping and mitigating the maritime industry's impact on climate change.

It is the assessment of the MFA that the IMO is one of its kind within the maritime sector and the only player within its field with 176 member states. The IMO is a first-time receiver of funds from the MFA and thus a new partner to the MFA.

2. Summary of partner capacity assessment

IMO has been committed to maintaining the safety, security and environmental performance of international shipping through a fair and effective regulatory framework that can be universally adopted and implemented. However, its Member States all have different levels of capabilities and resources as a flag State, port State or coastal State to meet international obligations and responsibilities. IMO has therefore been delivering technical assistance to support the unique needs of each of its developing Member States and those categorized as Small Island Developing States (SIDS) and Least Developed Countries (LDCs).

Through its Integrated Technical Cooperation Programme (ITCP) IMO has a long history of technical cooperation and capacity-building activities in areas such as maritime safety, security, environmental protection. In recent years, through the additional implementation of long-term thematic projects / programmes, IMO has

augmented its technical assistance related to GHG emissions, reflecting the growing recognition of the importance of addressing climate change in the maritime sector. IMO is currently managing 21 active projects in various areas including GHG and marine environment protection with a total funding portfolio of approximately $160 million spanning over several years, with the longest until 2030. 8 out of the 21 projects focus specifically on GHG. A list of ongoing IMO major projects that are supporting developing countries is available here: https://www.imo.org/en/OurWork/PartnershipsProjects/Pages/default.aspx

In terms of capacity, the IMO employs a diverse workforce with expertise in various maritime and technical fields, including policy development, regulatory compliance, technical assistance, and project management. While the number of staff members directly involved in GHG-related projects is relatively small compared (approx. 25 staff directly involved in GHG matters) to the overall workforce (approx. 300), the IMO leverages its network of experts, consultants, and partner organizations to support the implementation of technical cooperation programs.

Although IMO's track record in delivering long-term GHG projects / programmes is less than 10 years, past and current GHG-focused projects such as GloMEEP (Global Maritime Energy Efficiency Partnerships), the Global Maritime Technology Cooperation Centers (MTCC) Network, GHG Smart, and GreenVoyage2050 provide valuable insights and lessons learned. These initiatives have generated a wealth of knowledge, data, and best practices related to GHG mitigation measures, energy efficiency technologies, alternative fuels, and regulatory compliance. Leveraging this knowledge base can help inform the design and implementation of future initiatives, ensuring that interventions are evidence-based, effective, and tailored to the specific needs of target regions and stakeholders.

Past and ongoing projects have also delivered capacity-building programs, training workshops, and technical assistance activities aimed at enhancing the skills, knowledge, and capabilities of maritime stakeholders, including regulators, port authorities, shipowners, and seafarers. The expertise and resources developed can be harnessed to support similar activities, facilitating knowledge transfer and skill development at the national, regional, and global levels. Furthermore, IMO has Regional Presence Offices (RPOs) in developing regions that effectively promote regional maritime development through national and regional workshops, project support and needs identification.

Collaborative partnerships have been instrumental in the success of GHG-focused projects, with involvement from governments, industry stakeholders, international organizations, research institutions, and civil society. Existing partnerships and networks can facilitate collaboration, resource mobilization, and collective action to address common challenges and accelerate progress towards GHG reduction goals.

IMO GHG projects / initiatives have also supported policy development, regulatory frameworks, and institutional strengthening efforts to facilitate the adoption of sustainable practices and technologies in the maritime sector. Lessons learned from past experiences can inform policy dialogue, advocacy efforts, and technical assistance activities aimed at promoting policy coherence, regulatory compliance, and alignment with international standards and commitments.

Initiatives such as GMN/MTCC and GreenVoyage2050 have also promoted innovation, technology diffusion, and demonstration projects to showcase promising solutions for reducing GHG emissions in the maritime industry. Building on successful pilot projects established through these initiatives can accelerate the uptake of low-carbon technologies and practices in future projects, driving innovation and market transformation.

Overall, the experience gained from past and current GHG-focused initiatives serves as a valuable foundation for informing strategic planning, project design, and implementation of future IMO initiatives aimed at addressing climate change and promoting sustainable development in the maritime sector. By capitalizing on lessons learned, leveraging partnerships, and fostering innovation, IMO can enhance its capacity to deliver impactful and transformative projects that contribute to a more sustainable and resilient maritime industry.

Having that said, while the IMO has a wealth of experience in delivering technical assistance, GHG-related initiatives may still present unique challenges and require innovative approaches to achieve desired outcomes, especially given that the regulatory landscape is constantly evolving and expanding. Therefore, the effectiveness and success of GHG-related initiatives will depend on factors such as stakeholder engagement, resource mobilization, project design, monitoring and evaluation mechanisms, and knowledge sharing.

In terms of resource management, IMO has established mechanisms for receiving, allocating, and reporting on financial resources, including contributions from member states, donors, and other partners through funding mechanisms such as IMO's Multi-donor GHG Trust Fund and the Voluntary Multi-Donor Trust Fund (VMDTF). The organization adheres to transparent and accountable financial management practices, ensuring that resources are spent sensibly and efficiently to achieve desired results. Additionally, IMO regularly reports on the progress and impact of its technical cooperation programs through various channels, including annual reports, publications, and online platforms, demonstrating its commitment to accountability and results-based management

Summary of key partner features

Partner	Core business	Importance	Influence	Contribution	Capacity	Exit strategy
	What is the main business, interest and goal of the partner?	*How important is the project/ programme for the partner's activity-level (Low, med, high)?*	*How much influence does the partner have over the project/ programme (low, med, high)?*	*What will be the partner's main contribution?*	*What are the main issues emerging from the assessment of the partner's capacity?*	*What is the strategy for exiting the partnership?*
IMO	As a specialized agency of the United Nations, IMO is the global standard-setting authority for the safety, security and environmental performance of international shipping. Its main role is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented. IMO measures cover all aspects of international shipping – including ship design,	High. IMO has adopted the Revised GHG Strategy in 2023 with an enhanced common ambition to reach net-zero GHG emissions from international shipping by or around, i.e., close to, 2050, a commitment to ensure an uptake of alternative zero and near-zero GHG fuels by 2030, as well as indicative checkpoints for 2030 and 2040. The Strategy also refers to ensuring that the transition is just and equitable, which is	High. IMO already has in place the necessary mechanisms to fast-track the initiation of the collaboration/project and start implementation of activities. The Voluntary Multi-Donor Trust Fund (VMDTF) is an operational mechanism that provides financial support for representatives from developing countries to attend IMO GHG meetings - thereby directly reducing the financial burden of developing Member States to cover their travel costs.	Through its GreenVoyage2050 programme, the Partner will deliver technical assistance on legal, policy and institutional reforms, as well as catalyse the uptake of low carbon solutions on-board ships by supporting the development of bankable project proposals. The Partner's contribution will directly be linked to several high priority areas such as health, private sector development, climate and energy. Emissions from shipping, the key issue dealt by GreenVoyage2050, have a direct impact on the health of port cities and the coastal population of the regions.	Varying needs of Member States require delivery of targeted / bespoke technical assistance and projects in line with national circumstances. Impact of the collaboration / project will depend, inter alia, on the political support by developing countries to engage in relevant studies, legal and policy development and action planning. To reduce this threat, political buy-in will be considered as key criteria for choice of partnering countries in any project activity. Developing and implementing projects targeting GHG emissions requires specialized technical expertise in ar-	The exit strategy involves carefully planning and implementing measures from the outset to ensure that support is phased out gradually, capacities are institutionalized, and basic competencies are maintained. Focus will be given on: • Building capacity of relevant stakeholders, such as government agencies, maritime institutions, industry associations, and other key actors. • Providing training, workshops, and technical assistance to enhance their knowledge, skills, and competencies in addressing GHG emissions in the maritime sector.

	construction, equipment, manning, operation and disposal – to ensure that this vital sector remains safe, environmentally sound, energy efficient and secure. IMO is actively working towards the 2030 Agenda for Sustainable Development and the associated SDGs. To support developing countries to improve their ability to comply with international rules and standards, IMO provides technical assistance, through its Integrated Technical Cooperation Programme (ITCP) and thematic projects and programmes that focus on human resources development and institutional capacity-building.	key for the transition to be fully global with no country being left behind. The planned project is therefore of high importance as it contributes to IMO's goals to achieve the ambitions set out in the IMO GHG Strategy while ensuring that no country is left behind in the transition. Furthermore, both the IMO-Green Voyage programme and IMO's GHG Trust Fund rely heavily on donor contributions and voluntary donations to sustain their impactful initiatives. The collaborative efforts between the IMO and its donors underscore a shared commitment to safeguarding the marine environment and promoting sustainable development across the global maritime community.	IMO-GreenVoyage2050, through its Phase 1 (2020-2023), has positioned itself as a global flagship programme to scale-up emissions reduction efforts in developing countries by setting foundations for transformative policy shifts, stimulating strategic investments, and delivering tailored-made initiatives in partnering countries. Phase 2 of GreenVoyage2050 (2024 onwards) will continue to be executed by IMO that will exercise all matters of coordination on the project. Building strongly on lessons learned and successes of Phase 1, Phase 2 will scale-up emissions reduction efforts in developing countries in line with IMO's GHG Strategy.	GreenVoyage2050 will also promote industry alliances and partnerships to promote technology cooperation and diffusion, thus promoting private sector development related to maritime technologies. GreenVoyage2050 will also create conditions that may be conducive for effective use and transfer of expertise and experience from North to South, in areas where this is requested by partnering countries. Though the IMO GHG TC Trust Fund, the Partner will support enhancing the capacity of maritime administrations in the African region to implement the IMO 2023 GHG Strategy through stronger regional knowledge-sharing and coordination, capacity building and seafarer training. Financial support will be provided to representatives from developing countries, in particular from SIDS and LDCs and those with limited government budgets to attend IMO meetings physically. Trainings will be provided on GHG related matters and the status quo of on-going GHG negotiations. Both, the financial and capacity building support will further enhance the active participation of developing countries in IMO GHG negotiations.	eas such as emissions monitoring, alternative fuels, and energy efficiency technologies. Ensuring access to qualified experts and consultants with relevant knowledge and experience can be challenging, particularly for niche or emerging areas of focus and in developing countries.	• Work closely with national authorities to develop or strengthen policy and regulatory frameworks related to GHG emissions from shipping. Support the adoption and implementation of relevant international instruments, such as the IMO's MARPOL Annex VI and the IMO Strategy on Reduction of GHG Emissions from Ships, at the national level. • Help integrate GHG mitigation measures into national maritime strategies, action plans, and legislation to ensure sustained commitment and compliance. • Management and information sharing to ensure that lessons learned, best practices, and technical expertise accumulated during the project are captured, documented, and disseminated to relevant stakeholders. • Develop repositories, databases, and online platforms to facilitate access to resources, tools, and guidance materials on GHG mitigation in the maritime sector. • Foster strong partnerships and collaboration among government agencies, industry stakeholders, academic institutions, civil society organizations, and international partners to sustain momentum and support for GHG mitigation

				With a view to ensuring a just and equitable transition, a seafarers training programme will be rolled out in the African Region. This will support African seafarers in increasing knowledge and skills to handle new green fuels and technologies, thereby further strengthening their job opportunities.		efforts beyond the project's duration. Encourage the establishment of dedicated units or focal points within institutions to oversee GHG-related activities and ensure continuity beyond the project's lifespan. • Engage with private sector entities to promote investment, innovation, and technology diffusion in low-carbon shipping solutions.

Annex 3: Result Framework

Project title		**Green transition of shipping in developing countries**	
Project objective		*Just and equitable green transition of shipping in developing countries, with a specific focus in Africa has been accelerated.*	
Impact Indicator		- Identification of GHG-emissions reduction opportunities in Africa through pilot projects. - Strengthened regional cooperation and coordination on GHG related matters in Africa. - Increased impact in the negotiations on the IMO GHG-regulation by developing countries.	
Baseline		- There is limited understanding in Africa about the opportunities offered by the green transition. - The regional action and coordination on maritime decarbonisation in Africa are in its beginning phase and would need further support to accelerate. - Developing countries, especially LDS and SIDS, have recently started to participate in IMO GHG related meetings, but their capacity to actively engage in the GHG related negotiations are still limited.	
Outcome 1		Maritime administrations and seafarers in Africa have increased knowledge on green shipping offered opportunities and capacity to reduce GHG-emissions from shipping.	
Outcome indicators		Number of follow-up actions to the regional action plan and capacity needs assessments from the national authorities. Number of African seafarers who have used their newly gained knowledge.	
Baseline	Year	2025	Currently, there is very limited cooperation and coordination on the implementation of the IMO GHG Strategy. Currently, there has not been any regional training on handling of new green fuels and technologies.
Target	Year	2028	Minimum five African countries have undertaken specific measures identified in the regional action plan and capacity needs assessment in support of implementing the GHG Strategy.

			Minimum of 70% of African seafarers and maritime seafarers practically apply the knowledge gained.	
Output 1.1		A regional action plan for Africa has been developed and promoted through a regional conference. Both aimed at enhancing knowledge sharing and coordination on maritime decarbonisation in Africa.		
Output indicator		Publication of the regional action plan including list of participating African countries.		
Baseline	Year	2025	Despite it being a priority in the '2050 Africa's Integrated Maritime Strategy (AIM 2050 Strategy)' and 'Agenda 2063 - The Africa We Want' to establish a regional maritime headquarters to coordinate maritime affairs, this has not been translated into action. There is currently no organization, regional maritime department or established framework for continued African cooperation on maritime affairs in which a regional conversation on green shipping can take place.	
Annual target	Year 1	2026	**One situation assessment has been developed,** identifying existing initiatives, gaps, challenges, and opportunities for improvements in knowledge sharing and coordination in Africa. **One stakeholder mapping has been completed,** identifying key stakeholders involved in the maritime sector in Africa. Stakeholders have been engaged through consultations, workshops, and meetings to understand their perspectives, priorities, and needs regarding knowledge-sharing and coordination.	*Means of verification:* Report containing the situation assessment and stakeholder mapping. Report containing the action plan. Conference program and participation list.
Annual target	Year 2	2027	**One action plan for regional knowledge sharing and coordination has been developed**, which includes identifying Priority Areas (such as technology adoption, regulatory compliance, capacity-building, data collection and analysis, and policy development) and creating actionable strategies. The action plan would involve engaging a wide range of stakeholders, including government agencies, industry representatives, academia,	

			research institutions, and civil society organizations.	
Annual target	Year 3	2028	**One regional conference has been held** to promote the Regional Action Plan and share the latest research findings, best practices, case studies, and innovations related to GHG-reduction strategies and sustainable maritime practices. The conference should mark the start of the implementation of the Regional Action Plan	
Output 1.2		A comprehensive regional capacity needs assessment of African maritime authorities for implementing the IMO GHG Strategy has been completed.		
Output indicator		Publication of the regional comprehensive capacity needs assessment of African maritime authorities.		
Baseline	Year	2025	Currently, there have been capacity needs assessments on a country basis but not addressing GHG issues in details or at regional level.	
Annual target	Year 1	2026	The comprehensive needs-assessment has been completed. The results of the needs-assessment have been endorsed by Association of African Maritime Administrations (AMAA).	*Means of verification:* Needs assessment report including recommended actions. Evidence of endorsements.
Annual target	Year 2	2027	Follow-up support on recommended actions at least in two countries.	IMO mission reports.
Output 1.3		African seafarers and other maritime workforce have participated in a training programme aimed at enhancing their knowledge and skills in handling new green fuels and technologies.		

Output indicator		Number of African seafarer and maritime workforce who have completed the training program. Surveys before and after training to evaluate the knowledge gained from the training.		
Baseline	Year	2025	Maritime shipping is vital for job creation and economic growth, especially in developing nations. Africa has approximately 78,000 seafarers, with Nigeria, Sierra Leone, and Morocco being the largest suppliers. Research[21] suggests that by the mid-2030s, 800,000 seafarers may need additional training to operate vessels using zero or near-zero emission fuels. Training African seafarers in maritime decarbonisation will enhance competitiveness and contribute to economic development.	
Annual target	Year 1	2027	One seafarer training programme has been developed to support the handling of zero or near-zero carbon fuels and technologies. It covered: 1) Overview of zero and near-zero carbon fuels and technologies, 2) Safety and handling procedures, 3) Technical operation and maintenance, 4) Regulatory compliance, and 5) Case studies and best practices The program used a hybrid model, combining online self-paced modules with interactive virtual sessions, hands-on practical exercises, and on-site training workshops conducted with industry partners and training facilities. One seafarer training programme rolled out regionally.	*Means of verification:* A list of teaching materials showcasing the content of the training program. Quantitative data on the number of seafarers trained. Pre-training and post-training surveys (measure application of knowledge). Impact surveys approx. a year after the training. Tracking of downloads, potentially number of certificates provided.
Annual target	Year 2	2028	Training materials uploaded online for global use on a webpage dedicated for this purpose.	

Outcome 2	Developing states in Africa have improved their national policies on green shipping, creating an enabling environment for increased investments in energy efficient solutions, green technologies, and alternative fuel infrastructure for green shipping. This has led to an enhanced ability to attract large scale investments for project implementations.

[21] Research commissioned by the Maritime Just Transition Task Force: https://www.ics-shipping.org/wp-content/uploads/2022/11/Position-Paper-Mapping-a-Maritime-Just-Transition-for-Seafarers-%E2%80%93-Maritime-Just-Transition-Task-Force-2022-OFFICIAL.pdf

Outcome indicator			- Number of national actions plans adopted on a governmental level in the focus countries. - Number of green shipping pilot investments, which have confirmed funding agreements with donors or International Financial Institutions (IFIs).
Baseline	Year	2025	Limited number of developing countries have formally adopted National Action Plans (NAP). Only eight IMO member states have officially been submitted to the IMO. Out of these eight, there is only two which are from the developing countries (India and Marshall Island). Once the countries have been selected, the scale of investments in green shipping projects over the last three years in the selected countries can be provided to the MFA.
Target	Year	2028	Two national actions plans have been formally adopted by government in two different developing countries. Two pilot projects in developing countries have secured funding for their project implementation. Both will support achieving an enabling environment for increased investments in energy efficient solutions, green technologies, and alternative fuel infrastructure for green shipping
Output 2.1			Two developing countries have developed National Action Plans (NAP) to address their shipping GHG-emissions. For each country, the plan has been endorsed by an inter-ministerial National Task Force (NTF).
Output indicator			Number of National Action Plans and written confirmation of endorsements from inter-ministerial National Task Forces.
Baseline		2025	Limited number of developing countries have developed National Action Plans (NAP). Currently, the IMO is working with relevant authorities from Kenya, Belize, Cook Islands and Solomon Islands to develop NAPs. IMO have experience with Morocco to develop a NAPs, which was not officially adopted.
Annual target	Year 1	2025	Two inter-ministerial **NAP development National Task Forces (NAP NTFs) have been established** with relevant national policymakers to promote progress, transparency, accountability, and consensus-building	*Means of verification:*

			towards the development of National Action Plans (NAP). **A NAP kick-off Roundtable has been facilitated** to discuss the benefits and drivers for the development of a NAP in the country. The session also introduced the NAP Guide and shared experiences from countries that have developed and adopted NAPs. The event included participation from NAP NTF member and relevant maritime stakeholders.	National Rapid Assessments reports. Terms of reference for the NAP NTFs. List of participants in kick-off roundtable. National Action Plans (NAPs) reports. Confirmation document of inter-ministerial National Task Forces' endorsement of NAPs.
Annual target	Year	2026	**Two National Rapid Assessments developed**, providing an overview of the national maritime status. These reports include assessments of maritime activities and fleets, as well as the collation of relevant information such as fleet fuel consumption and emissions. The Rapid Assessment reports serve as the foundation for NAP development.	
Annual target	Year 2	2027	**Two National Actions Plans (NAP) developed** as policy strategies for national action to address their shipping GHG-emissions. These documents also serve as the basis for identifying potential zero or near-zero pilot projects. **Both plans have been endorsed by NAP NTF**.	
Output 2.2		Two green pilot project owners in developing countries have developed comprehensive feasibility studies for zero or near-zero emissions pilot projects that are considered finance-ready. This should enable them to make informed decisions about the next steps for implementing their pilot projects.		
Output indicator		Number of feasibility studies for green pilot projects, including risk analyses validating the projects' bankability.		
Baseline	Year	2025	Developing regions (e.g., Africa, South East Asia) have limited uptake of pilot project for decarbonisation of shipping and no pipeline of bankable pilot project proposals in place.	

Annual Target	Year 1	2025	Through the GreenVoyage2050 Pilot Accelerator **opportunities for two pilot projects have been identified, and pilot owners have been selected**, ideally focusing on Energy Efficiency Technology pilots. Public-private partnerships developed to bring active private sector participation to support development of pilot projects.	*Means of verification:* Reports on two feasibility studies.
Annual target	Year 2	2026	**Capacity building and training activities** has been delivered including workshops, mentoring sessions, and tailor-made training to support the implementation of individual pilot projects. **Two comprehensive feasibility studies have been developed** to assess the technical viability and potential risks associated with each pilot project.	
Output 2.3		Two pilot project owners in developing countries have developed action plans to address financial barriers and have connected with donors and International Financial Institutions (IFIs) with a view to securing funding for their project implementation.		
Output indicator		Number of action plans to address financial barriers.		
Baseline	Year	2025	Limited knowledge in developing countries' maritime administrations on how to address financial barriers and connect multilateral development banks in support of envisioned maritime decarbonization investments.	
Annual target	Year 1	2027	For each pilot project owner, barriers to accessing capital or finance for implementing their pilot project have been identified, and **an action plan has been established** to secure the necessary finance. **One donor roundtable has been conducted** to attract donors and International Financial Institutions (IFIs), aiming to support pilot project owners in securing financing for their projects. Additionally, pilot owners have been encouraged to seek funding through the GreenVoyage2050 Transition Facility, a new gap-	Means of verification: Action plan report including description of identified barriers. List of IFIs participating in the donor roundtable.

			funding mechanism that will be set up under Green-Voyage2050 to co-finance pilot project implementation.	

Outcome 3		Voices from the **global South** are increased and have an impact on the outcome of the IMO GHG negotiations on future regulatory measures for international shipping contributing to an inclusive process and an equitable transition	
Outcome indicator		Percentage of IMO delegates attending GHG related IMO meetings who have received support for participation and also benefitted from the capacity developing activities.	
Baseline	Year	2025	LDCs and African States are poorly represented and only a smaller part of these actually speaks at IMO GHG meetings (see boxes below).
Target	Year	2028	Developing countries and their viewpoints/interest, especially SIDS and LDCS, to be represented and heard in the IMO meetings including MEPC.
Output 3.1		IMO delegates from developing countries, especially Small Island Developing States (SIDS) and Least Developed Countries (LDCs), have participated in capacity developing activities such as webinars, online workshops and one regional conference. All focusing on how to navigate the IMO GHG negotiations and implementing decarbonisation measures.	
Output indicator		Number of IMO delegates who have participated in the different capacity developing activities. Surveys before and after the activity to evaluate the knowledge gained. Increased engagement at IMO GHG related meetings (MEPC and /or ISWG-GHG).	
Baseline	Year 1	2025	Developing countries possess limited capacity and knowledge regarding MARPOL Annex VI and GHG related matters. Consequently, countries may struggle to fully implement regulations pertaining to maritime emissions reductions, potentially hindering their ability to mitigate environmental impacts and comply with international standards.
Annual Target	Year 1	2026	Guide on IMO GHG negotiations supporting developing countries is shared minimum two months before each MEPC.

Means of verification:

Online Surveys and Feedback Mechanisms

			Minimum two organized webinars and online workshops to provide in-depth discussions on specific aspects of IMO GHG negotiations, such as the process, short-term and mid-term measures, and opportunities for support. These sessions could feature expert speakers, case studies, and interactive Q&A sessions to facilitate knowledge sharing and engagement.	
Annual target	Year 2	2027	At least 20 country representatives from developing countries to take part in 1 regional conference.	
Output 3.2		Financial support has been provided for country representatives from developing countries, particularly Small Island Developing States (SIDS) and Least Developed Countries (LDCs), to attend IMO meetings focusing on GHG-related matters.		
Output indicator		List of countries whose representatives have received financial support to attend IMO GHG meetings in 2025 and 2026.		
Baseline	Year	2025	During the negotiations of the revised IMO GHG Strategy in July 2023, a lack of attendance from developing countries was apparent. Especially LDCs and African States were poorly represented **Analysis of attendance of African region at December 2022 IMO meetings** Out of the 45 African IMO member states: 24 Members (53 %) were registered for MEPC 79. During MEPC 79, 10 Members (22%) had representatives at the working group on GHG. 5 Members (11%) were present at ISWG 13. **Analysis of attendance of LDC at July 2023 IMO meetings** Of the 33 LDC Members of the IMO: 10 Members (30%) was registered for MEPC 80. 6 members (36%) Registered for ISWG 15.	

Annual target	Year 1	2025	Minimum 15 representatives from developing countries have participated in IMO GHG meetings (MEPC and /or ISWG-GHG).	*Means of verification:* List of representatives funded to participate at IMO GHG meetings (MEPC and /or ISWG-GHG).
Annual target	Year 2	2026	Minimum 15 representatives from developing countries have participated in IMO GHG meetings (MEPC and /or ISWG-GHG).	

Annex 4: General project risks and mitigation strategies

GENERAL PROJECT RISKS AND MITIGATION STRATEGIES					
Risk Factor	**Likelihood**	**Impact on the project**	**Risk Response**	**Residual risk**	**Background to assessment**
Contextual risks					
Major global disruption significantly affects the economics of maritime trade and the priorities of ship owners	Likely	Major	Project will supply initial or full funding for participants or partnering developing countries to participate in project activities	Moderate	Major disruption can impact countries and industry stakeholder's priorities and push the wish to invest finances or personnel in green initiatives down the list.
Evolving geopolitical landscape and/or natural disasters which shift partnering country priorities	Likely	Major	GreenVoyage2050 Phase 2 is designed with flexibility to bring in additional partnering countries and terminate activities with existing partnering countries if insufficient progress is made/ country priorities change.	Moderate	Major disruption can impact countries and industry stakeholder's priorities and push the wish to invest finances or personnel in green initiatives down the list.
Quickly evolving regulatory frameworks at the national and international levels impact on the ability of the programme to stay relevant	Likely	Minor	Programme strategies and activities are designed with built-in flexibility to accommodate changes in regulatory requirements and emerging priorities and adapt project strategies accordingly.	Low	Programme staff will continuously monitor regulatory developments and actively engage with IMO Member States and industry stakeholders to anticipate regulatory changes.
Programmatic risks					
Failure by partnering countries to secure political support to engage in relevant Legal, Policy and Institutional	Unlikely	Major	Political buy-in will be considered a key criterion in the selection of partnering countries.	Very low	Close relationship between national maritime administrations and IMO and the opportunity to engage with them

Reforms (LPIRs) studies, policy development and actions.			Maritime Administrations will be given the coordinating role at national level to ensure existence of political support at all times. IMO will ensure all strategic stakeholders become aware of the country's participation and commitments (e.g. through establishment of National Task Forces).		during regular IMO meetings will support engagement of country officials at political levels.
Insufficient institutional capacity and technical expertise in participating regions / countries.	Almost Certain	Major	A pool of technical experts has already been established in the previous projects and further expanded during GreenVoyage2050 Phase 1. Targeted capacity building of individuals will be carried out to ensure further talent growth in partnering regions / countries. Global tools, methodologies and templates will be developed and disseminated to support growth of talent.	Low	GreenVoyage2050 will harness expertise that is being used in other global donor activities (e.g. IMO projects such as GMN, GHG Smart, FIN SMART) and by other partners with on-going maritime decarbonization projects (e.g. IAPH, World Bank, EBRD, ADB).
Failure to secure a strong and geographically balanced Global Industry Alliance (GIA) partnership or secure significant GIA Fund	Unlikely	Minor	Gaps in the current GIA membership (both geographically and in terms of stakeholder group representation) have already been identified and a sound business case for further engagement of new members in the GIA will be developed and implemented.	Low	Engagement of private sector and securing their financial support to a large extent already exists due to GloMEEP and GreenVoyage2050 Phase 1 project outcomes.
Coordination with other donors is inadequate and could affect project focus and results	Unlikely	Major	IMO will ensure coordination of donor inputs in all parts of the project to improve alignment and reducing reporting burdens. DMA will be a part of the steering committee of Green Voyage Phase II.	Very low	Other donor countries are contributing to both the funds and the Green Voyage Program. The project team will continue to work with other donors to leverage resources towards realizing common project outcomes

Limited applications of SIDS and LDC's to be funded to attend IMO GHG meetings	Unlikely	Significant	IMO will continuously inform member states of the possibility to apply for funding during committee meetings (such as MEPC and TCC) and at relevant regional events	Very low	The fund has so far seen a rise in applications
Failure to locate or attract relevant people/persons to attend conferences and workshops	Likely	Significant	IMO to use their large network in the maritime administrations to locate the right authorities and persons. Invitations to be sent out at high level when relevant.	Moderate	For the conference and workshop to have an impact targeted participation is necessary.
Countries do not implement recommendations or use results of studies or assessments	Unlikely	Significant	IMO to ensure national ownership of any studies / assessments that are develop (e.g. through engagement of national consultants, use of National Task Forces for inputs and reviews, etc.)	Moderate	Countries are chosen based on their own expressed interest or in response to open calls.
Getting relevant stakeholders and maritime authorities buy- in and commitment to regional coordination	Likely	Major	The African Union, which can participate in IMO's meeting as an intergovernmental organization, will be invited to actively participate in relevant discussions on GHG-related matters. The African Development Bank (ADB) will be invited to submit its application to become an intergovernmental organization so as to actively take part in relevant discussions on the reduction of GHG emissions from ships.	Moderate	The IMO Secretariat will continue a dialogue with both, the African Union and ADB through its regional coordinators in Africa, as well as other existing organizations such as MTCC Africa.
Institutional risks					
The project fails to deliver its outcomes, which will reflect negatively on IMO, MFA and DMA	Unlikely	Significant	Indicators developed to analyse progress will alert the IMO if the project starts to underperform. Following annual reports, the IMO, DMA and MFA will have a meeting to review the per-	Low-moderate	Addressing underperformance will be considered very important to reduce the risk of reputational damage to the partnering organisations.

			formance and where necessary adjust the programme or develop proposals for improvements.		
Limited availability of funding for pilot projects could impede the scalability and sustainability of emission reduction initiatives.	Likely	Major	GreenVoyage2050 Phase 2 designed with built-in flexibility to bring in additional partnering countries and terminate activities with existing partnering countries if insufficient progress is made/ country priorities change. In early stages of Phase 2, a dedicated funding mechanism to support pilot projects will be established	Moderate	Partnerships with international financial institutions, private sector stakeholders, and donor agencies will be established to mobilize additional resources and co-finance initiatives.
Delayed recruitment of project staff	Unlikely	Significant	IMO has overhauled its Recruitment policies to enable fast-tracking of recruitments as well as created a Vacancy roster that will be tapped into to ensure speedy recruitment of an expanded team.	Low	A core team has already been recruited for Phase 1 of GreenVoyage2050 and remains in place for Phase 2, thereby allowing smooth transition between the two Phases.
Limited women's participation in the project activities.	Likely	Minor	GreenVoyage2050 will develop a gender action plan to identify areas where it can contribute to gender mainstreaming and implement actions accordingly. IMO will actively encourage delegation to include women when they apply for funding to attend IMO GHG meetings.	Low	The Shipping sector is heavily male dominated. However, among staff from maritime authorities attending the IMO meetings the gender balance is better, although still male dominated especially when looking at attendance from developing regions.

Unethical practices during the implementation of the project will reflect badly on the project partners.	Very unlikely	Minor	Use of a transparent procedure for selection of all project partners / countries. Limit transfers of cash. Allowances to be provided largely based on actual expenditure/costs, with payments direct to vendors/participants, where applicable.	Very low	The project will be implemented in accordance with relevant conditions set out in the Agreement between donors and IMO, and all project staff will adhere to IMO's respective internal ethical guidelines.
Human rights are not protected.	Unlikely	Minor	Institutional reforms, training and capacity building will be advocated, all of which would contribute to the creation of a level playing field for individuals, an essential element of the public human rights.	Very low	Rights of people will be protected by reducing air pollution and GHG emissions from ships and in ports.
Corruption involving Danish funds	Unlikely	High	The IMO secretariat is directly involved in the implementation of projects, and no funds are channelled to local partners.	Minor	IMO programme and financial guidelines limit the risk of corruption. Green Voyage can terminate cooperation with partner in case of corruption.
Environmental risks					
In-person activities which require travel, printed materials and refreshments result in carbon emission and generation of waste (e.g., plastic drinking bottles)	Likely	Minor	For activities that require in-person participation, adequate research and planning will be conducted to determine the most carbon-efficient travel routes and transportation options, along with the most eco-friendly infrastructure and event services. Additionally, the project		IMO's travel and procurement policies emphasize sustainability as an importance criterion in purchase and hire of goods and services with the most direct routes always mandated.

			will also utilize video conferencing and webinar, when suitable.		

Annex 5: Budget

		2025	2026	2027	2028	Full Plan
Output 1.1	**A regional action plan for Africa has been developed and promoted through a regional conference. Both aimed at enhancing knowledge sharing and coordination on maritime decarbonisation in Africa.**					
	Technical Advisory Services*	200.000,00	140.000,00	400.000,00	480.000,00	1.220.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	345.000,00	520.000,00	525.000,00	550.000,00	1.940.000,00
	Travel and DSA	140.000,00	310.000,00	275.000,00	600.000,00	1.325.000,00
	Communication and Visibility	0,00	0,00	0,00	60.000,00	60.000,00
	Sub-Total	**685.000,00**	**970.000,00**	**1.200.000,00**	**1.690.000,00**	**4.545.000,00**
Output 1.2	**A comprehensive regional capacity needs assessment of African maritime authorities for implementing the IMO GHG Strategy has been completed. The analysis will serve as a basis for identifying necessary policy, regulatory actions, or funding**					
	Technical Advisory Services*	200.000,00	120.000,00	120.000,00	0,00	440.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	275.000,00	210.000,00	210.000,00	0,00	695.000,00
	Travel and DSA	140.000,00	100.000,00	100.000,00	0,00	340.000,00
	Communication and Visibility	0,00	30.000,00	30.000,00	0,00	60.000,00
	Sub-Total	**615.000,00**	**460.000,00**	**460.000,00**	**0,00**	**1.535.000,00**
Output 1.3	**African seafarers and other maritime workforce have participated in a training programme aimed at enhancing their knowledge and skills in handling new green fuels and technologies.**					
	Technical Advisory Services*	0,00	0,00	90.000,00	50.000,00	140.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	0,00	0,00	575.000,00	50.000,00	625.000,00
	Travel and DSA	0,00	0,00	625.000,00	0,00	625.000,00
	Communication and Visibility	0,00	0,00	100.000,00	0,00	100.000,00
	Sub-Total	**0,00**	**0,00**	**1.390.000,00**	**100.000,00**	**1.490.000,00**
Output 2.1	**Two developing countries have developed National Action Plans (NAP) to address their shipping greenhouse gas (GHG) emissions. For each country, the plan have been endorsed by an inter-ministerial National Task Force (NTF).**					
	Technical Advisory Services*	350.000,00	415.000,00	350.000,00	0,00	1.115.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	200.000,00	835.000,00	100.000,00	0,00	1.135.000,00
	Travel and DSA	200.000,00	200.000,00	200.000,00	0,00	600.000,00
	Communication and Visibility	60.000,00	120.000,00	0,00	0,00	180.000,00
	Sub-Total	**810.000,00**	**1.570.000,00**	**650.000,00**	**0,00**	**3.030.000,00**
Output 2.2	**Two green pilot project owners in developing countries have developed comprehensive feasibility studies for zero or near-zero emissions pilot projects that are considered finance-ready. This should enable them to make informed decisions about the next steps for implementing their pilot projects.**					
	Technical Advisory Services*	320.000,00	430.000,00	0,00	0,00	750.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	625.000,00	1.355.000,00	0,00	0,00	1.980.000,00
	Travel and DSA	200.000,00	210.000,00	0,00	0,00	410.000,00
	Communication and Visibility	60.000,00	120.000,00	0,00	0,00	180.000,00
	Sub-Total	**1.205.000,00**	**2.115.000,00**	**0,00**	**0,00**	**3.320.000,00**
Output 2.3	**Two pilot project owners in developing countries have developed action plans to address financial barriers and have connected with donors and International Financial Institutions (IFIs) with a view to securing funding for their project**					
	Technical Advisory Services*	0,00	0,00	450.000,00	0,00	450.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	0,00	0,00	0,00	0,00	0,00
	Travel and DSA	0,00	0,00	400.000,00	0,00	400.000,00
	Communication and Visibility	0,00	0,00	0,00	0,00	0,00
	Sub-Total	**0,00**	**0,00**	**850.000,00**	**0,00**	**850.000,00**

Output 3.1	**IMO delegates from developing countries, especially Small Island Developing States (SIDS) and Least Developed Countries (LDCs), have participated in capacity developing activities such as webinars, online workshops and a regional conference. All focusing on how to navigate the IMO GHG negotiations and implementing decarbonisation measures.**					
	Technical Advisory Services*	0,00	410.000,00	300.000,00	0,00	710.000,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	0,00	270.000,00	270.000,00	0,00	540.000,00
	Travel and DSA	0,00	0,00	1.250.000,00	0,00	1.250.000,00
	Communication and Visibility	0,00	50.000,00	50.000,00	0,00	100.000,00
	Sub-Total	**0,00**	**730.000,00**	**1.870.000,00**	**0,00**	**2.600.000,00**
Output 3.2	**Financial support has been provided for country representatives from developing countries, particularly Small Island Developing States (SIDS) and Least Developed Countries (LDCs), to attend IMO meetings focusing on GHG-related matters.**					
	Technical Advisory Services*	0,00	0,00	0,00	0,00	0,00
	Administration	0,00	0,00	0,00	0,00	0,00
	Contractual Services	0,00	0,00	0,00	0,00	0,00
	Travel and DSA	0,00	700.000,00	700.000,00	0,00	1.400.000,00
	Communication and Visibility	0,00	20.000,00	20.000,00	0,00	40.000,00
	Sub-Total	**0,00**	**720.000,00**	**720.000,00**	**0,00**	**1.440.000,00**

All + Support costs	All Output Sub-Total	3.315.000,00	6.565.000,00	7.140.000,00	1.790.000,00	18.810.000,00
	IMO SC (GHG TC TF - 5%)	165.750,00	328.250,00	357.000,00	89.500,00	940.500,00
	Total	**3.480.750,00**	**6.893.250,00**	**7.497.000,00**	**1.879.500,00**	**19.750.500,00**
DMA + MFA	Contractual services: Review and analysis	0,00	0,00	249.500,00	0,00	249.500,00
Full project	IMO	3.480.750,00	6.893.250,00	7.497.000,00	1.879.500,00	19.750.500,00
	DMA + MFA	0,00	0,00	249.500,00	0,00	249.500,00
	Total	**3.480.750,00**	**6.893.250,00**	**7.746.500,00**	**1.879.500,00**	**20.000.000,00**

Annex 6: Plan for Communication of Results

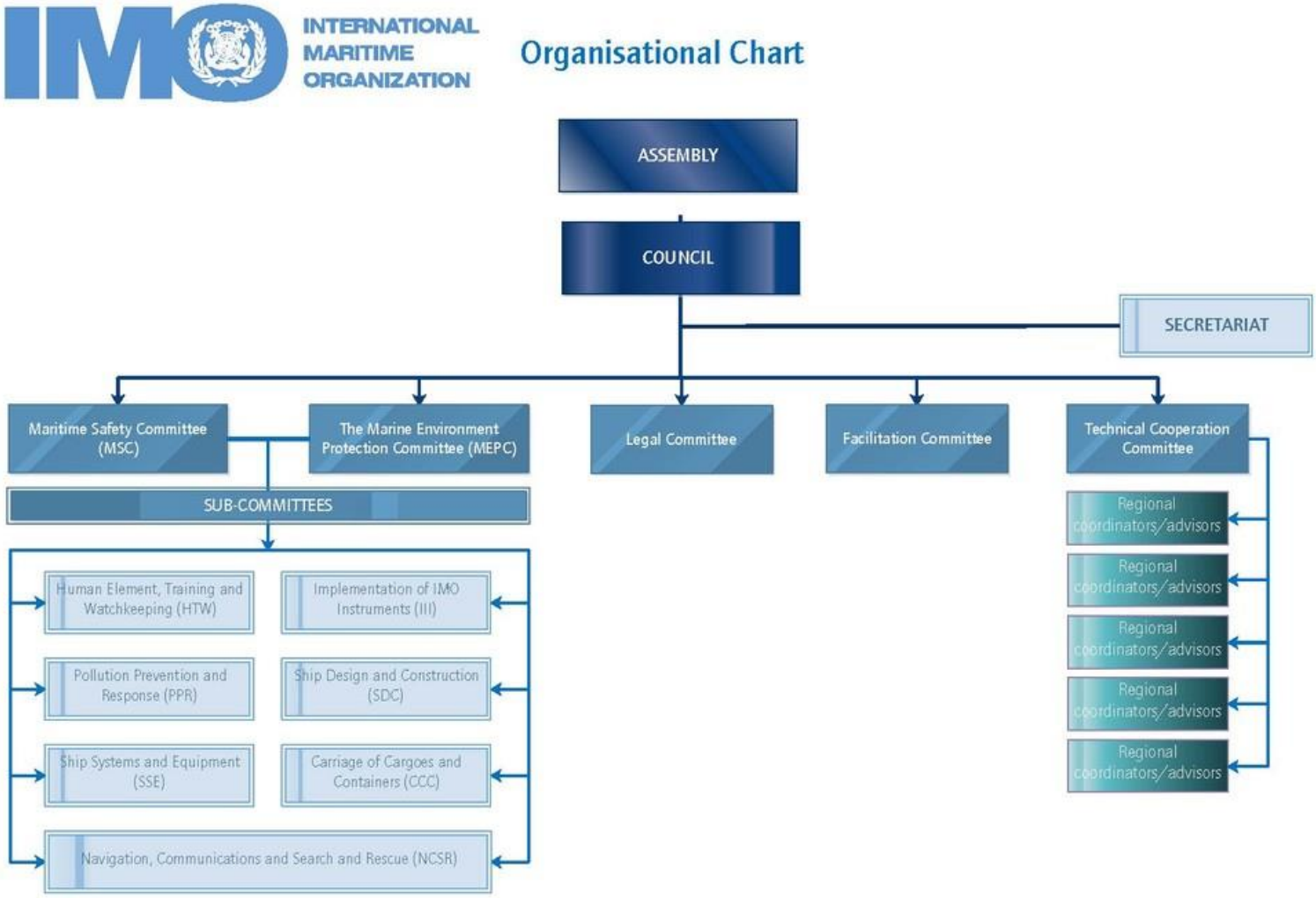
The results of the project will be communicated through the modality outlined in the table below. All communications will also be shared through IMO and GreenVoyage2050 social media accounts where appropriate. Further opportunities for press engagements to promote the results of the project will be identified by the Outreach and Communication Office of IMO during the course of the project.

When appropriate, the IMO Secretary General and other IMO staff will promote the work of the project, particularly when engaging with IMO Member States participating in the project. The final modality of communications may be subject to change in line with the Communication Strategy of IMO, under the guidance of the Outreach and Communications Office.

Provisional communications plan for project		
Result	**Modality**	**Timeframe**
Formal announcement of support from Denmark to IMO to support green transition of shipping in developing countries	IMO Press Release	Q4 / 2024
Selection of countries to partake in activities under the project	IMO Circular Letter	Q4 / 2024
NAP Kick-off Roundtables facilitated in selected partnering countries	GV2050 Blog Post	Q1 / 2025
Comprehensive Africa regional needs assessment for implementation of IMO GHG Strategy endorsed	IMO What's New	2026
Pilot implementation support training provided in selected partnering countries	GV2050 Blog Post	2026
Pilot feasibility studies developed in selected partnering countries	GV2050 Blog Post	2026
IMO GHG negotiation capacity webinars to support developing countries hosted	IMO What's New	2026
Support for participation of developing countries in IMO GHG Meetings	Council report	2025 and 2026

Africa regional action plan for implementation of IMO GHG Strategy released	IMO What's New	2027
Africa Regional seafarer training program completed	IMO What's New	2027
NAP endorsed by selected partnering countries	GV2050 Blog Post	2027
Donor roundtable to finance pilot projects hosted	IMO What's New	2027
IMO GHG negotiation capacity regional conference hosted	IMO What's New	2026
Support for participation of developing countries in IMO GHG Meetings	Council report	2026
Conference hosted on Africa regional action plan for implementation of IMO GHG Strategy	IMO What's New	2028
Seafarer training program expanded to other regions	IMO What's New	2028

Annex 7: Organisational setup – IMO



Annex 8: Literature list

Danish Shipping - Annual Report Danish Shipping 2022 https://danishshipping.dk/en/about/danish-shipping/annual-report-2022/

Getting to Zero - INSIGHT BRIEF: The scale of investment needed to decarbonize international shipping https://www.globalmaritimeforum.org/content/2020/01/Getting-to-Zero-Coalition_Insight-brief_Scale-of-investment.pdf

Getting to Zero Coalition and UMAS - A Strategy for the Transition to Zero-Emission Shipping: An analysis of transition pathways, scenarios, and levers for change https://www.u-mas.co.uk/wp-content/uploads/2021/10/Transition-Strategy-Report.pdf

Green Voyage Concept note (not published online)

Green Voyage info page: About IMO GreenVoyage2050: GreenVoyage2050

Global Maritime Forum - Shipping's Energy Transition: Strategic Opportunities in South Africa https://www.globalmaritimeforum.org/content/2022/05/Shippings-Energy-Transition_Strategic-Opportunities-in-South-Africa.pdf

IMO 4th GHG Study Fourth Greenhouse Gas Study 2020 (imo.org)

IMO - MEPC 74/18/Add.1, annex 17: Terms of Reference of the GHG TC-Trust Fund https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/MEPC%2074-18-Add.1%20-%20Annex%2017.pdf

Maritime Just Transition Task Force – Position Paper – Mapping a Maritime Just Transition for Seafarers Position-Paper-Mapping-a-Maritime-Just-Transition-for-Seafarers-–-Maritime-Just-Transition-Task-Force-2022-OFFICIAL.pdf (ics-shipping.org)

NewClimate Institute – Casestudy The landscape of green hydrogen in Namibia (newclimate.org) https://newclimate.org/sites/default/files/2023-11/The%20landscape%20of%20green%20hydrogen%20in%20Namibia_nov2023.pdf

P4G South Africa report Shippings-Energy-Transition_Strategic-Opportunities-in-South-Africa.pdf (globalmaritimeforum.org)

Staff regulations and Staff Rules of the International Maritime Organization May 2024 (not published online). Appendix E and F is within this document.

United Nations - Decision 4/CP.1 g9561655.wpf (unfccc.int)

UNCTAD - Why should we talk about a 'just and equitable' transition for shipping? https://unctad.org/news/why-should-we-talk-about-just-and-equitable-transition-shipping

World Bank - The Potential of Zero-Carbon Bunker Fuels in Developing Countries (worldbank.org)

Template for Process Action Plan (PAP) for Projects and Programmes between DKK 10 and 43 million

Action/product	Deadlines	Responsible/involved units	Comment/status
Quality assurance and approval			
Finalisation of the project/programme document	Min. 2 months prior to the Minister's approval	Responsible unit in dialogue with DMA and IMO.	
Quality assurance: Internal Appraisal	Min. 1,5 months prior to the Minister's approval	Responsible unit	An independent view has been safeguarded during appraisal
Final external appraisal report integrating comments from the responsible unit and partner(s)	Min. 1 month prior to the Minister's approval	Responsible unit	
Quality Assurance Checklist (Annex 9): documentation of the appraisal process	1 month prior to the Minister's approval	Responsible unit	Signed by the responsible desk officer and the Head of unit and attached to the project/programme documents
Checklist for approval by the Under-secretary for development policy: QA of required documentation		Responsible unit	The filled-in checklist to be attached to the project/programme document, appropriation cover note and Annex 9
All documentation is sent in 360 for the Under-secretary's endorsement via the Head of unit and LEARNING	1 month prior to the Minister's approval	Responsible unit	Required documentation: Appropriation cover note Final Project Document, including annexes Quality Assurance Checklist (Annex 9) Checklist for approval by the Under-secretary for development policy
LEARNING presents the grant for final approval by the Minister		LEARNING	
The minister approves the project	No later than November 29th 2024	LEARNING submits the proposed project/programme together with the minutes of meeting	
Initial actions following the Minister's approval			
LEARNING facilitates that grant proposals are published on Danida Transparency after the Minister's approval	After Minister's approval	LEARNING	
Signing of agreement with the IMO	After Minister's approval	Responsible Unit	
Register commitment in MFA's financial systems within the planned quarter	After agreement is signed	Responsible unit	

ANNEX 9: QUALITY ASSURANCE CHECKLIST

File number/F2 reference: 24/47076

Programme/Project name: Green transition of shipping in developing countries

Programme/Project period: The project covers the period from 1st January 2025 to 31st of December 2028

Budget: 20 mio. DKK

Presentation of quality assurance process:
Comments: This annex 9 is the result of the appraisal. Against the background of the preparation process, the appraisal process was accelerated, desk based, and took as its departure the Word-based project document (PRODOC) with its latest changes dated 07.10.24 by the desk officer KLIMA/Green Export. The PRODOC was tabled for appraisal on 21.10.24. The appraisal process involved consultations with KLIMA/Green Export, KLIMA/Reduction-Energy as well as virtual external meetings with the International Maritime Organization (IMO) and the Danish Maritime Authority/Sofartsstyrelsen (DMA).

☐ The design of the programme/project has been appraised/appraisal checklist filled out, by someone independent who has not been involved in the development of the programme/project.
Comments: This project has been appraised internally in KLIMA by a development specialist, who a) has not been involved in this specific project and b) is part of a different team than the desk officer and the team ultimately responsible for the appropriation.

☐ The recommendations of the appraisal/comments in the appraisal checklist have been reflected upon in the final design of the programme/project.
Comments: The comments in this appraisal checklist have prompted a total of five (5) ***recommendations*** *(RECs) and a number of lower-level* ***suggestions*** *which the desk officer and implementing agency can use as input updating the final version of the of the programme/project and/or will be cognisant of in the implementation of the project.*

☐ The programme/project complies with Danida policies and Aid Management Guidelines, including the fundamental principles of Doing Development Differently.
Comments: The design of this project has been formulated in accordance with Danida guidelines. Guidelines have been interpreted to accommodate the specific institution of the International Maritime Organization (IMO) and the specific context of this project. In accordance with the Danida concept of Doing Development Differently (DDD), the project is designed to a) be flexible and adaptive throughout the implementation, and b) underscore results reporting. The project is designed to have a steering committee, which will meet at least annually following the submission of the result progress report. The steering committee will evaluate and monitor the progress to ensure delivery of outputs, address issues related to implementation, and provide input and advice on potential adaptations to the programme. The steering committee will also assess the risk management assessment and assumptions made and revise accordingly if needed.

☐ The programme/project addresses relevant challenges and provides adequate responses.

policy advocacy initiatives that also can have a positive impact on the empowerment of women and youth in the maritime sector.

It is ***recommended*** *(REC #1) that the final PRODOC further clarifies how gender is mainstreamed both in IMO and the envisaged project activities. The clarification could include examples of results already achieved, pipelined activities, and outline departmental responsibility and capacity within the organization.*

- Comments from the Danida Programme Committee (if applicable) have been addressed

Comments: Not applicable.

- The programme/project outcome(s) are found to be sustainable and in line with the partner's development policies and strategies. Implementation modalities are well described and justified.

Comments: This project will support two existing IMO funds and an IMO program: the 1) IMO Greenhouse Gas (GHG) Technical Cooperation Trust Fund, 2) the Green Voyage 2050 Phase II and 3) the Voluntary Multi-Donor Trust Fund for Participation.

These funds and programmes address challenges and opportunities within the acceleration of a just and equitable green transition of shipping in developing countries, with a specific focus on Africa, by building the financial, technical, and human capacities of developing countries. The activity areas are seen as relevant and can contribute to transitioning the shipping sector in developing countries. With Denmark's contribution, IMO will be able to expand the activity level considerable vis-à-vis these existing funds and programs.

It is ***recommended*** *(REC #2) that the final PRODOC further clarifies a) how the three IMO funds/programs selected for support link with the outlined three outcomes in the PRODOC and b) how Denmark's contribution expand and accelerate the activity levels of the selected IMO funds and programmes. In addition, it could be an observation point for the steering committee to mitigate the risks of a) fragmentation of the funding and b) a lack of coordination between the three outcome areas.*

It is ***recommended*** *(REC #3) the steering committee supports and ensures synergies between Denmark's maritime Strategic Sector Collaboration (SSC) in Kenya and Ghana and this project.*

The steering committee will see participation of both the Danish Ministry of Foreign Affairs (MFA) and the Danish Maritime Authority (DMA) (p.24). It is ***recommended*** *(REC #4) to clarify the exact division of labour between MFA and DMA. This relates both a) to the work of the steering committee and b) the envisaged mid-term review in 2017 (PRODOC p.23).*

- The theory of change (if applicable), results framework, indicators and monitoring framework of the programme/project provide an adequate basis for monitoring results and outcome.

Comments: This project is based on existing programmes and funds within the IMO. These are mentioned above. The theory of change, results framework, indicators and monitoring framework of this project provide an adequate basis for monitoring results and outcome.

Comments: IMO is the implementing partner and administers its own funds and programmes. IMO is experienced in matching the requirements of developing countries with resources made available by governmental, institutional and corporate donors. The management arrangement of this project aims to ensure adequate reporting and dialogue on the project results. In managing the project IMO will ensure alignment with the IMO Greenhouse Gas (GHG) strategy and the Green Voyage 2050 Programme Document.

☐ Implementing partner(s) has/have been informed about Denmark's zero-tolerance policies towards (i) Anti-corruption; (ii) Child labour; (iii) Sexual exploitation, abuse and harassment (SEAH); and, (iv) Anti-terrorism.
Comments: The IMO enforces a zero-tolerance policy on prohibited practices. Its Policy and Procedures on the Prevention and Detection of Fraud and Serious Misconduct outlines responsibilities, reporting mechanisms, and investigation procedures. All staff, contractors, and partners must prevent and report fraud, with the Internal Oversight and Ethics Office serving as the reporting facility initiating investigations. For preventing Sexual Exploitation, Abuse, and Harassment, the IMO follows its Policy and Procedures for Investigation of Alleged Breaches of the right to a Harassment-Free Workplace. This policy covers responsibilities, prevention, corrective measures, and investigation procedures for sexual exploitation, abuse, and harassment

☐ Risks involved have been considered and risk management integrated in the programme/project document.
Comments: An assessment of risks and their potential implications for the project is carried out and actions to mitigate the risks are identified in the PRODOC's Annex 7. Monitoring risks through the implementation of the project is important to determine whether adjustments are needed. Three main categories, in line with the DANIDA Aid management guidelines, have been considered: contextual risks, programmatic risks, and institutional risks. The project steering committee will as part of its work oversee the project's risk management (PRODOC p. 24).

In conclusion - referencing outlined **five (5) recommendations and a number of lower-level suggestions** - the programme/project can be recommended for approval: **yes**

Date and signature of Desk Officer: 7.11.24 Anne Sofie Duus Kinnerup

Development Specialist: 7.11.24 Henrik Vistisen

Management: Karin Poulsen

KARIN POULSEN

ACTING HEAD OF DEPT.