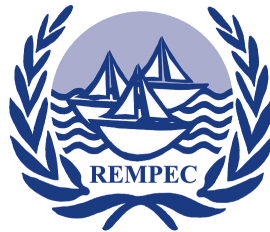


Preparing and implementing National Action Plans in alignment with the IMO Net-Zero Framework— development, tools, stakeholder engagement, and financing pathways

7th October 2025



Mediterranean
Action Plan
Barcelona
Convention





Introduction to policy context for NAPs

Introduction to policy context for NAPs

Background

- 1997 Resolution 8 “CO₂ emissions from ships”
- 2003 A.963(23) MEPC urged “to identify and develop the mechanism or mechanisms needed to achieve the limitation or reduction of GHG emissions from international shipping” and give priority to “the evaluation of technical, operational and market-based solutions”
- 2011 MEPC.203(62) Adoption of Chapter 4 of MARPOL Annex VI “Regulations on energy efficiency of ships” (EEDI & SEEMP)
- 2015 Paris Agreement that aims to limit the global temperature increase to well below 2°C above pre-industrial levels, with efforts to restrict the increase to 1.5°C
- 2018 Initial IMO Strategy on Reduction of GHG emissions from ships (resolution MEPC.304(72)) identified short term measures including to “encourage the development and update of national action plans to develop policies and strategies to address GHG emissions from international shipping in accordance with guidelines to be developed by the Organization, taking into account the need to avoid regional or unilateral measures”

Introduction to policy context for NAPs

Background cont.

- On 20 November 2020, MEPC 75 adopted a Resolution to encourage Member States to develop and submit voluntary National Action Plans to address GHG emissions from ships, which was revised by MEPC 79 in 2022 to include references to shipping routes to support decarbonization (MEPC.367(79))
- 2023 IMO Strategy on Reduction of GHG emissions from ships (resolution MEPC.377(80))
- European Union Action
 - EU-Emission Trading Scheme (EU-ETS)
 - FuelEU Maritime (FEM)
 - Alternative Fuels Infrastructure Directive (AFID)
 - Renewable Energy Directive (RED)
- IMO Net-Zero Framework (considered for adoption by MEPC/ES.2, October 2025)

Subaskar Sitsabeshan
Programme Officer – GreenVoyage2050
International Maritime Organization



Introduction to National Actions Plans

Introduction to National Actions Plans

- Introduction to IMO GreenVoyage2050 programme
- IMO encouragement to develop National Actions Plans (MEPC.367(79))
- Why develop a NAP?
- Support for IMO Member States to develop NAPs

IMO-GreenVoyage2050 Programme

- Phase 1 (2020-2023) and Phase 2 (2024-2030)
- Supports implementation of IMO GHG Strategy
- Multi-donor funded (Denmark, Finland, France, Germany, Netherlands, Norway), total budget 28.4 million USD



MINISTRY OF FOREIGN AFFAIRS
OF DENMARK



GOUVERNEMENT

Liberté
Égalité
Fraternité



FINNISH
GOVERNMENT



Die
Bundesregierung



Norway

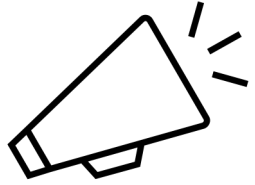


Government of the Netherlands

The screenshot shows the IMO website's Media Centre page. The header includes the IMO logo and navigation links. A large image of a container ship is featured with the headline "UN agency launches new global project to tackle maritime GHG emissions". Below this, a brief dated 08/13/05/2019 describes the project as a major international effort to support the IMO's initial strategy for reducing greenhouse gas emissions from shipping. It mentions that the project will initiate and promote global efforts to demonstrate and test technical solutions for reducing such emissions, as well as enhancing knowledge and information sharing to support the IMO GHG reduction strategy. The project is a collaboration between IMO and the Government of Norway and will run for an initial two-year period. More than 50 countries in 14 sub-regions across the globe are expected to participate, including developed countries and strategic partners from the private sector, who will contribute expertise and experience. The project will also build capacity in developing countries, including small island developing states (SIDS) and least developed countries (LDCs), to fulfil their commitments to meet climate-change and energy-efficiency goals for international shipping. Initially, eight countries, from five high-priority regions (Asia, Africa, Caribbean, Latin America and Pacific), are expected to take pilot roles, to pursue and undertake actions at the national level. These pilot countries will then become "champions", galvanising momentum by supporting other partnering countries in their efforts.

IMO Secretary-General Kitack Lim (left) and Mr Sveinung Oftedal, Specialist Director of the Norwegian Ministry of Climate and Environment, signed the GreenVoyage-2050 project. The project is a direct response to the need to provide

GreenVoyage2050 Phase II: Overview



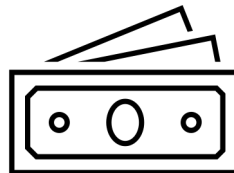
National Action Plans:

GreenVoyage2050 supports developing legal, policy, and technical roadmap to reduce GHG emissions.

Scale up of pilot project support through the GreenVoyage2050 Accelerator



Establishment of GreenVoyage2050 Grant Facility to provide grant financing to support uptake of green technologies



Strengthened partnerships to support overall programme delivery through the Global Industry Alliance to Support Low Carbon Shipping



National Action Plans (NAPs) for Green Shipping – WHAT?

The Resolution suggests that National Action Plans could include (but not limited to):

- Improving domestic institutional and legislative arrangements for the effective implementation of existing IMO instruments;
- Developing activities to further enhance the energy efficiency of ships;
- Initiating research and advancing the uptake of alternative low-carbon and zero-carbon fuels;
- Encouraging the production and distribution of such fuels for shipping
- Accelerating port emission reduction activities, consistent with resolution MEPC.323(74);
- Fostering capacity-building, awareness-raising and regional cooperation; and
- Facilitating the development of infrastructure for green shipping.
- Facilitating voluntary cooperation through the whole value chain

MEPC 79/15/Add.1
Annex 12, page 1

ANNEX 12

MEPC RESOLUTION 367(79) (adopted on 16 December 2022)

ENCOURAGEMENT OF MEMBER STATES TO DEVELOP AND SUBMIT VOLUNTARY NATIONAL ACTION PLANS TO ADDRESS GHG EMISSIONS FROM SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization (the Organization) concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution from ships,

HAVING ADOPTED resolution MEPC.304(72) on *Initial IMO Strategy on reduction of GHG emissions from ships* (the Initial Strategy),

NOTING that the Initial Strategy includes a candidate short-term measure to encourage the development and update of National Action Plans to develop policies and strategies to address GHG emissions from international shipping in accordance with guidelines to be developed by the Organization, taking into account the need to avoid regional or unilateral measures,

NOTING ALSO the role of Member States in extending the emission reduction efforts to all shipping-related sectors which are not necessarily covered by the Organization's conventions,

NOTING FURTHER resolution MEPC.366(79) on *Invitation to Member States to encourage voluntary cooperation between the port and shipping sectors to contribute to reducing GHG emissions from ships*,

RECALLING that, at its seventy-fifth session, the Committee adopted resolution MEPC.327(75) on *Encouragement of Member States to develop and submit voluntary national action plans to address GHG emissions from ships*,

RECALLING ALSO that, at its seventy-ninth session, the Committee agreed to revise resolution MEPC.327(75),

RECOGNIZING that many Member States are already taking actions at national level to facilitate the reduction of GHG emissions from ships,

RECOGNIZING ALSO that many Member States, industry, ports and other relevant stakeholders are voluntarily working together to strengthen cooperation through the whole value chain to create favourable conditions along specific shipping routes to reduce GHG emissions from ships,

COMMENDING those Member States that have already prepared National Actions Plans and encourages them to share their experiences with the Organization,

National Action Plans (NAPs) Examples



Norwegian Government

Action Plan

The Government's action plan for green shipping



MEMBER STATE (ALPHABETICAL ORDER)	TITLE OF NATIONAL ACTION PLAN	YEAR OF ADOPTION	LINK FOR DOWNLOAD
Finland	Government resolution on reducing greenhouse gas emissions from maritime and inland waterway transport	2021	Resolution on reducing GHG emissions from maritime and inland waterway transport
France	Roadmap for decarbonization of the maritime sector	2025	French Roadmap for decarbonization
India	Maritime India vision 2030	2021	Maritime India vision 2030
Japan	Roadmap to zero emission from international shipping	2020	Roadmap to zero emission from international shipping
Marshall Islands	Rebbelib 2050: A Catalyst for Change - Marshall Islands national transport decarbonisation framework	2022	Rebbelib 2050
Norway	The Government's action plan for green shipping	2021 2019	Update on the Norwegian National Action Plan.pdf The Government's action plan for green shipping
Republic of Korea	Toward Green Shipping by 2050	2023	R.O.K National Action Plan - Toward Green Shipping by 2050
Singapore	Maritime Singapore Decarbonisation blueprint: Working towards 2050	2022	Maritime Singapore Decarbonisation Blueprint More information here
United Kingdom	Maritime Decarbonisation Strategy	2025	Maritime Decarbonisation Strategy More information here

<https://www.imo.org/en/ourwork/environment/pages/relevant-national-action-plans-and-strategies.aspx#:~:text=The%20Initial%20IMO%20Strategy%20on,guidelines%20to%20be%20developed%20by>

National Action Plan (NAPs) – WHY?

- **Positioning your country as a Regional Leader** → solidify the country's role as a leader in the regional maritime sector, particularly in the provision of alternative fuels, positioning the country as a key player in the green shipping and energy transition across the continent.
- **Attracting Investment** → By outlining clear strategies for green shipping, the country would make itself more attractive to private sector investors and development partners, facilitating funding and technical expertise for projects (e.g. in renewable energy and low/zero-carbon transport)
- **Improved Environmental Sustainability** → A NAP would guide the country in reducing GHG emissions from the maritime sector, contributing to global climate goals and enhancing the country's environmental sustainability efforts, including transitioning to renewable energy sources like solar and wind.

National Action Plan (NAPs) – WHY? continued

- **Job Creation and Skills Development** → By driving the shift toward green technologies, the NAP would create new employment opportunities, particularly in green technologies, renewable energy, and port operations. It would also encourage capacity-building and technical training for the local workforce.
- **Enhanced Regulatory Frameworks and Policy Support** → A NAP would establish clear and supportive regulatory frameworks for green shipping initiatives, ensuring smoother implementation of projects and better coordination between government agencies, the private sector, and local communities, driving long-term sustainable growth.

Countries that we are working with



Belize



Cook Islands



Kenya



Solomon Islands



Bangladesh



Egypt



Ghana

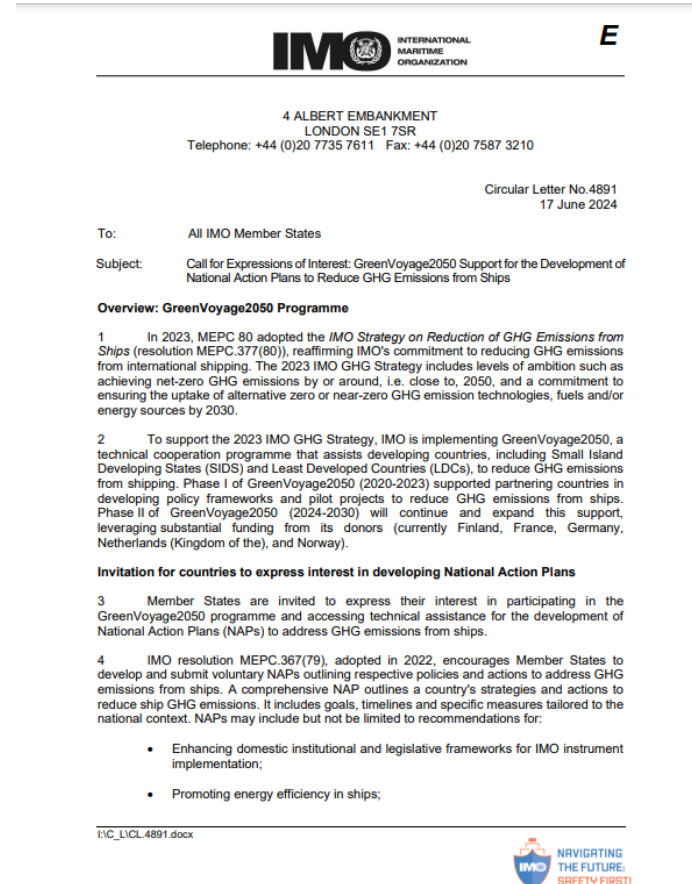


Nigeria



Mexico

Annual Calls – Expressions of Interest





**National Action Plans – development, tools,
stakeholder engagement, and financing pathways**



Guidance Document

on the preparation of
National Action Plans to address
**GHG emissions from ships in the
Mediterranean region**

Guidance document on the preparation of National Action Plans to address GHG emissions from ships in the Mediterranean region

Document can be downloaded from here:

<https://www.rempec.org/en/news-media/rempec-news/guidance-document-on-the-preparation-of-national-action-plans-to-address-ghg-emissions-from-ships-in-the-mediterranean-region>

National Action Plans – development, tools, stakeholder engagement, and financing pathways

1. **Determining the need for a NAP**
2. **Development and approval of a NAP**
3. **Implementation and monitoring of the NAP**
4. **National or regional initiatives to the development and implementation of a NAP**

1 Determining the need for a NAP

- **NAP development may be a capacity / resource intensive activity and so a need to develop a NAP should be carefully considered before its initiation.**
- **Imperative for policy makers in the country to identify what are the key drivers.**
- **Identifying key drivers:**
 - **What is the role of maritime transport in the national economic policy?**
 - **Is there an understanding of the proportion of emissions domestic maritime transport contributes to national emissions?**
 - **What is the potential role of maritime transport in national energy transition and country's contribution to the decarbonization of international shipping?**

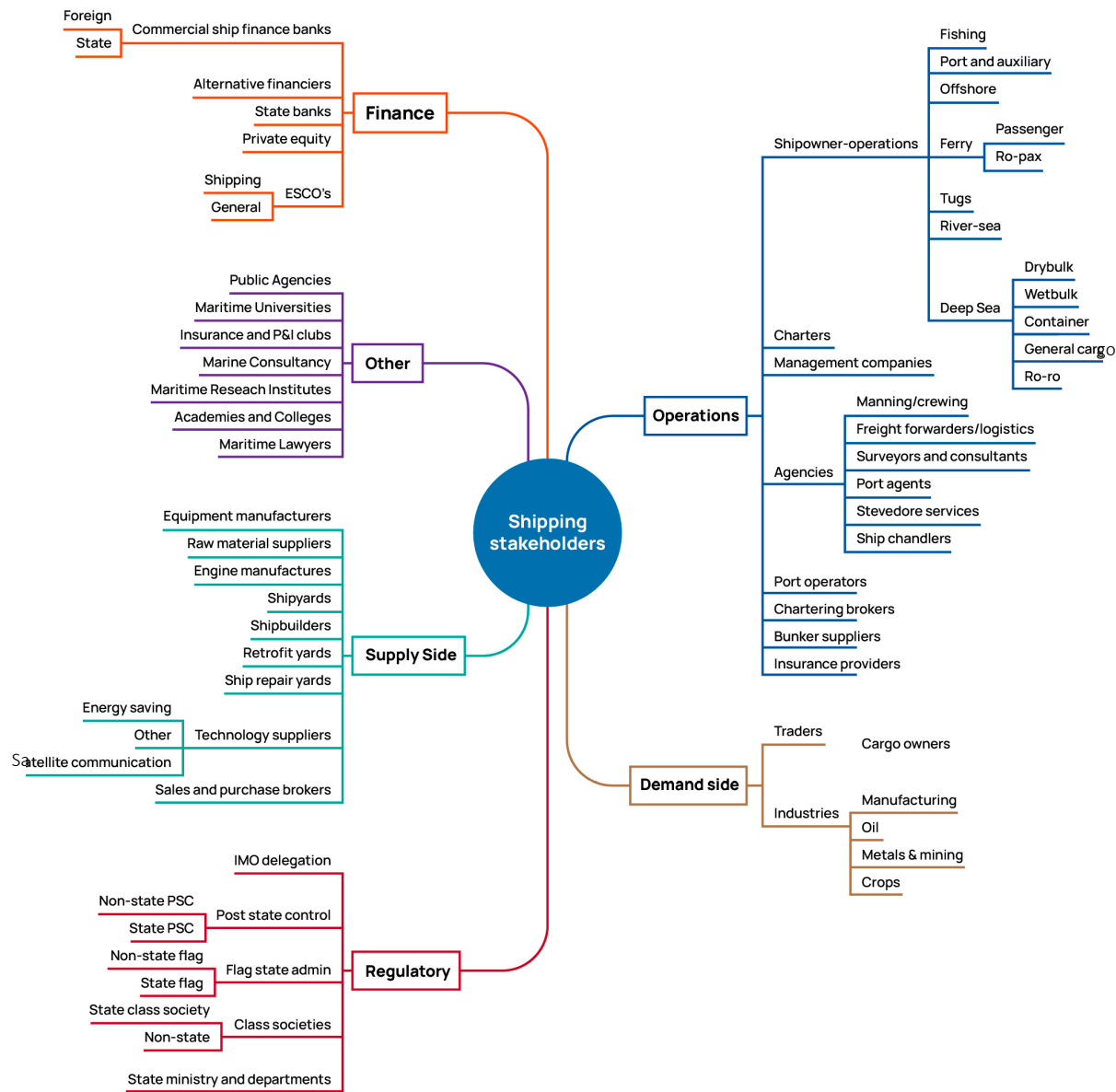
2. Development and approval of a NAP

- **Stakeholder Engagement and Consensus-Building**
- **Determining the aim and scope of the NAP**
- **Define Clear Objectives and Targets**
- **Develop Strategies and Actions**
- **Identify Funding Sources and Partnerships**
- **Reviewing and Approving the NAP**

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Stakeholders within the national maritime sector

Source: Guidance document on the preparation of National Action Plans to address GHG emissions from ships in the Mediterranean region, REMPEC, July 2025

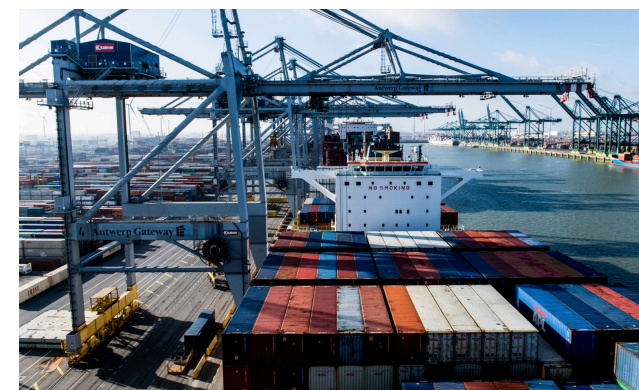
2. Development and approval of a NAP

- **Stakeholder Engagement and Consensus-Building**

- Identify Key Stakeholders: Responsibility for existing shipping legislation/policies often spread over a range of ministries/agencies
- NAP development requires a significant degree of inter-ministry/agency and cross-sector coordination
- NAP will affect a broad range of stakeholders (e.g. shipping companies, industry associations, NOGs)
- Starting point: identify a public body to lead the NAP development process (e.g., ministry/government department/agency)
- Establish Task Force: To oversee NAP development & ensure effective coordination among stakeholders
- Designate National Focal Point to coordinate and manage the NAP process
- Consultation & Workshops: to gather input on key challenges & opportunities for green shipping and to ensure broad support/ownership of NAP

2. Development and approval of a NAP

- Stakeholder Engagement and Consensus-Building
- **Determining the aim and scope of the NAP**
- Define Clear Objectives and Targets
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2. Development and approval of a NAP

- **Determining the aim and scope of the NAP**

- **What is the status of your maritime sector today?**

- a. Create an information basis for the NAP development: e.g. domestic/international fleet composition, routes, traded goods, economic strategy, etc.
- b. Evaluate current emissions: Undertake GHG emissions assessment to understand the current carbon footprint / major sources of maritime emissions
- c. Assess current infrastructure: Review existing infrastructure at ports to determine readiness for alternative fuel use, renewable energy adoption, and energy efficiency improvements
- d. Assess barriers: e.g. regulatory gaps, lack of technical expertise, inadequate infrastructure, or financial constraints that could hinder the transition to green shipping

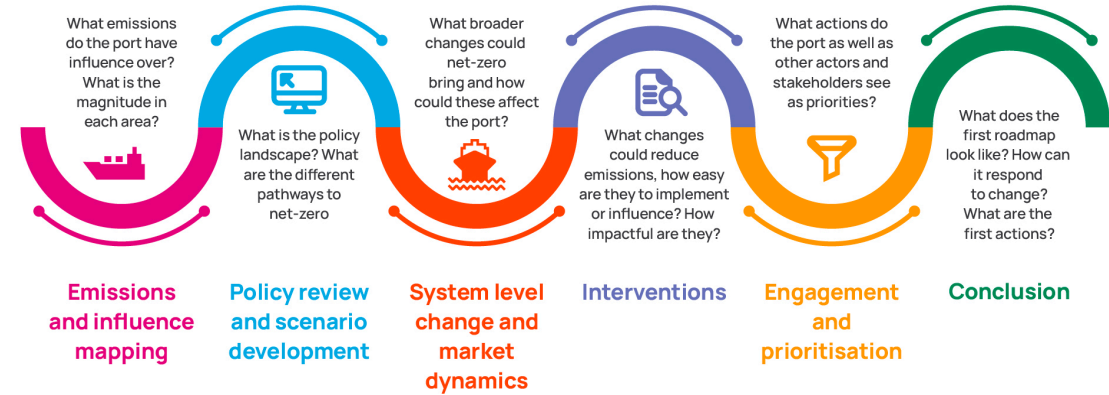
2. Development and approval of a NAP

- **Determining the aim and scope of the NAP**

- **Role of ports?**

Key questions

- How important are ports in the overall national economy?
- How many ports exist in the country? Are there plans for new ports and harbours?
- What is the annual volume of traded goods – imports and exports – passing through the major ports?
- What types of vessel call at the major ports and at what frequency?
- Do the national ports have a strategy on decarbonisation?
- Do some ports provide incentives to most energy efficient ships?
- Do some ports implement port optimisation policies to reduce emissions from ships?
- Are there plans for ports to provide OPS to ships?



- **Existing bunkering facilities and expansion plans?**

Key questions

- What are the major existing bunker supply locations in the country?
- What is the current condition of existing bunker storage and supply infrastructure?
- Is there any existing or planned infrastructure for production and/or supply of low-carbon and zero-carbon alternative fuels?
- Is there capacity that could be utilised for the storage of alternative fuels?
- Is there capacity that could be utilised for the bunkering of alternative fuels?



2. Development and approval of a NAP

- Stakeholder Engagement and Consensus-Building
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2. Development and approval of a NAP

- **Define Clear Objectives and Targets**

- **Set long-term goals:** Establish your country's vision for green shipping and its role as a regional leader
- **Establish milestones:** Break down long-term goals into achievable, short- to medium-term milestones
- **Link to National Development Plans:** Ensure NAP aligns with your country's broader national development plans and climate commitments (e.g., NDCs under the Paris Agreement, energy security, etc.)

Key questions

- What are the objectives that will need to be achieved in order to reach the overall aim of the NAP?
- What actions are required to deliver the set objectives?
- Which objectives and actions, if any, should be prioritised over others?
- Which objectives and actions will have the greatest emissions reduction potential?
- Which objectives and actions are easiest to implement?



National priorities and criteria

2. Development and approval of a NAP

- Stakeholder Engagement and Consensus-Building
- Determining the aim and scope of the NAP
- Define Clear Objectives and Targets
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2. Development and approval of a NAP

Develop Strategies and Actions

- **Policy Framework:** Design policies to support the transition.
- **Infrastructure Development:** Outline plans for developing green port infrastructure (e.g. bunkering stations, RE sources, energy storage solutions).
- **Capacity Building and Skills Development:** Capacitate workforce for green maritime operations
- **Incentive / Financing Mechanisms:** Design financial instruments (e.g. grants, tax incentives, PPPs) to mobilize investments.

Criteria for selecting objectives and actions

The choice of objectives and actions should be based on national priorities and criteria. Possible criteria include:

Emissions reduction potential

- Facilitate transformational impacts (i.e. long term, significant changes) that enable a shift to a low/zero emissions economy over the long term.
- Achieve significant emissions reductions relative to a baseline scenario.
- Target high-emitting or fast-growing maritime sectors.
- Eliminate key barriers to emissions reductions.

Feasibility

- Be aligned with national economic and development priorities and objectives.
- Be feasible to implement and enforce, given current and anticipated political, legal and regulatory context.
- Have stakeholder support.

Benefits and costs

- Deliver multiple benefits, including emissions reductions and various economic, social and environmental benefits (such as reduced fuel costs, improved air quality, improved public health and reduced health care costs, job creation in new sectors, increased stakeholder participation in policy-making processes, creation of new business or investment opportunities, decreased energy dependency, etc.).
- Deliver a positive economic return (e.g. through financial savings from reduced fuel costs, job growth through new industries, productivity gains that increase GDP and create jobs, reduced health care costs from air pollution).
- Be cost-effective in reducing ship emissions and achieving other benefits for a given amount of resources (e.g. as determined through marginal abatement cost curves (MACC)).
- Leverage private sector investment in low emissions development/technologies.

Other

- Have been shown to be effective in other jurisdictions.
- Be measurable, in order to enable monitoring and evaluation of their performance over time.
- Be expected to have a fair distribution of costs and benefits across society, for example, across different geographic regions, income groups or industry sectors.
- Be expected to expand and entrench support from domestic constituencies and lock in low emissions technologies and behaviour.

Country status	Possible objectives	Examples of actions
Country has not ratified and/or incorporated MARPOL Annex VI into national law	Ratification and/or incorporation of MARPOL Annex VI into national law	• Please refer to Ship Emissions Toolkit, Guide No.2 Incorporation of MARPOL Annex VI into national law for actions
Many nationals work on board ships	Offer training to seafarers on MARPOL Annex VI regulations and how to implement them on board	• Use MARPOL Annex VI training packages/resources prepared under GloMEEP/GreenVoyage 2050 projects • Train [X] seafarers by [date]
Country has large flag registry	Promote increase in energy efficiency/decrease in ship emissions among the registered fleet	• Establish draft for “green” discount scheme (providing a registry discount for ships demonstrating enhanced energy efficiency or using emissions abatement technology or low-carbon or zero-carbon fuels) • Undertake a stakeholder review of draft scheme
Country has many or busy ports	Reduce emissions from ships in port	• Explore potential for: • supply of alternative fuels • introduction of differentiated port dues • onshore power supply • at-berth fuel switch requirements to low-sulphur fuels • speed limits in ports • Improve information exchange between ports and ships so that ships can sail at optimal speed (virtual arrival) • Give preferential treatment to harbour crafts equipped with engines meeting stringent emissions standards • Undertake targeted Port State Control inspections relating to compliance with MARPOL Annex VI
Significant ship traffic within country’s coastal waters	Reduce emissions in country’s coastal waters	• Assess potential to introduce/encourage speed optimization in country’s coastal waters also benefitting coastal populations/environment
Country has many or large shipbuilders and/or repair yards	Increase the construction and/or servicing of low emissions ships; increase capability to retrofit technologies to reduce emissions from ships	• Conduct techno-economic evaluation of low emissions shipping opportunities • Introduce economic/fiscal incentives for low emissions shipbuilding or retrofit industries
Country has significant number of crew trained	Increase awareness on shipping decarbonization from the crew’s perspective	• Organize training sessions on MARPOL Annex VI and beyond
Lack of data	Implement or expand a system to collect and analyse ship data especially on traffic and fuel consumption	• Implement data monitoring or measurement activities to establish activity baseline to support policy decision making • Analyse new data and compare with other similar jurisdictions

Develop Strategies and Actions

Examples of possible actions for the NAP

2. Development and approval of a NAP

- Stakeholder Engagement and Consensus-Building
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2. Development and approval of a NAP

Identify Funding Sources and Partnerships

Key questions

- What resources are required to implement the NAP (human resources, facilities, equipment, services and materials)?
- What is the scale/magnitude of financial resources required? Is this aligned with the level of ambition of the NAP?
- What is the current status of national credit rating? Will this have an impact on accessibility to private investment?
- What are the possible sources of finance for NAP implementation?
- Will it be public funding? Private? Blended financing (i.e. mixed)?
- Are there any current economic incentives to encourage inward investment in low-emissions maritime technologies?

2. Development and approval of a NAP

Identify Funding Sources and Partnerships



“Decarbonising the global shipping fleet by 2050 requires substantial investment, with annual costs estimated between USD 8 and 28 billion for vessel construction and operations. Additionally, scaling onshore production, fuel distribution, and bunkering infrastructure to support a 100% carbon-neutral fuel supply by 2050 demands an estimated additional USD 30 to 90 billion per year.”

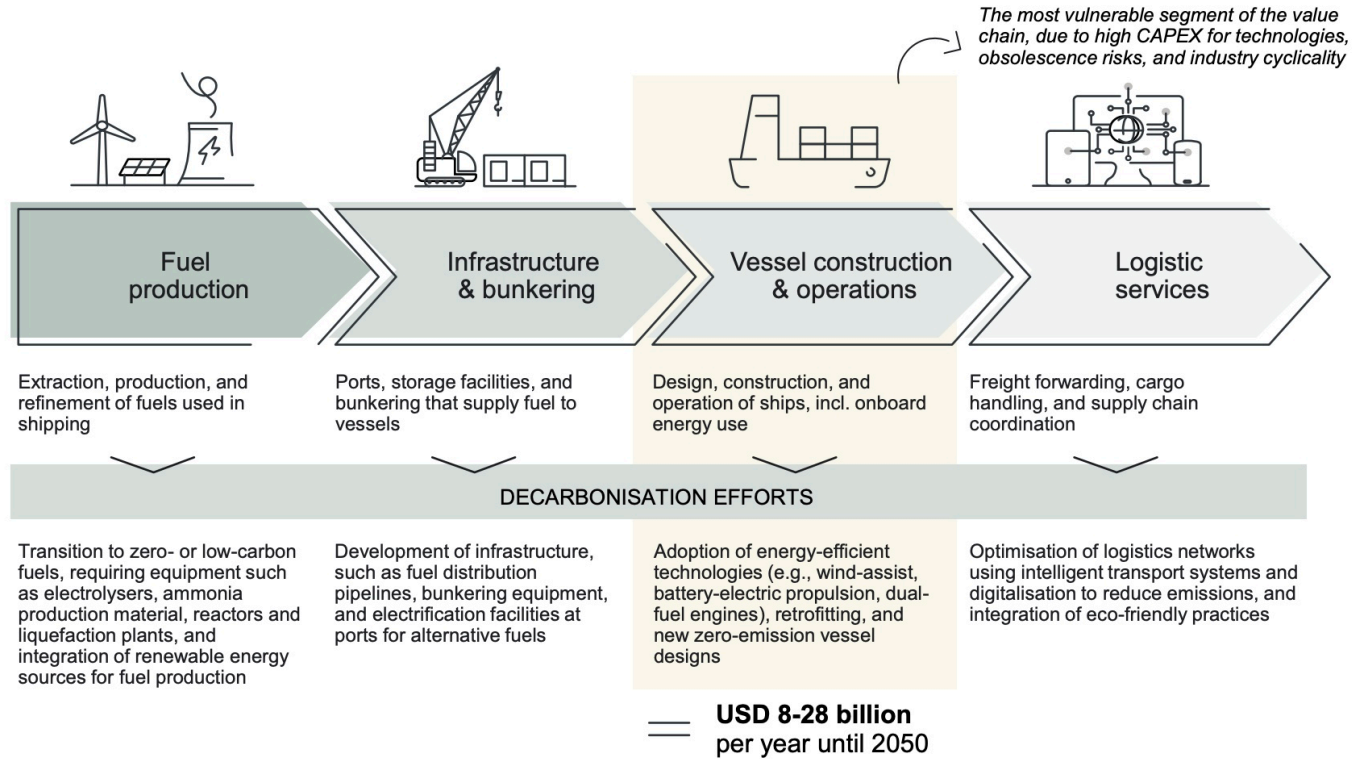
Source: Implement Consulting Group/Danish Maritime Authority (DMA), February 2025

<https://cms.implementconsultinggroup.com/media/uploads/articles/2025/Mapping-global-financial-support-for-zero-emission-and-energy-efficient-ships/Mapping-global-financial-support-for-zero-emission-and-energy-efficient-ships.pdf>

2. Development and approval of a NAP

Identify Funding Sources and Partnerships

Investments in decarbonisation of shipping



Source: Implement Consulting Group based on UNCTAD (2023), Review of Maritime Transport, Marine Benchmark (2023), DNV (2022), Maritime Forecast to 2050, and International Maritime Organization (2018), Energy Efficiency in Shipping

“financing remains difficult, as traditional bank lending has become harder to access due to stricter regulations, high perceived risks, fluctuating fuel prices, and an uncertain business case for zero-emission ships. Alternatives such as leasing, private equity and export finance bring flexibility but also potentially higher costs and stricter terms, disadvantaging smaller players and developing economies.

Despite these challenges, operational improvements and existing technologies could cut emissions by up to 75%. Bridging the financing gap requires innovative funding mechanisms, policy support, and global collaboration.”

Source: Implement Consulting Group/DMA, February 2025

2. Development and approval of a NAP

Identify Funding Sources and Partnerships

Potential financial support options available for shipowners and operators

Green loans Loans specifically tied to environmental projects, often provided by banks or development finance institutions, can offer lower interest rates or better terms for projects with measurable sustainability outcomes.	Sustainably-linked loans Loan terms (e.g. interest rates) are linked to the achievement of predefined sustainability performance targets (e.g., emission reductions). They offer flexibility, as they are not tied to specific green projects but to overall sustainability performance.	Export credit agency financing Export credit agencies provide funding or guarantees for exports, including those related to green shipping technology and vessels.	Green bonds Debt securities issued to finance green projects, such as adopting low-emission technologies or retrofitting vessels for energy efficiency.	Private equity and venture capital Involves shipping companies raising capital from private investors or venture capital firms for sustainable projects. Often used for startups or innovative technologies in the shipping sector.	Corporate equity Internal financing through reinvested profits, supported by sustainability-focused budgets within shipping companies.
Grants and subsidies Direct financial support from national governments, the European Union, or international organisations. Typically aimed at research, innovation, or pilot projects in sustainable shipping.	Carbon credit revenue Funding through the sale of carbon credits or participation in emission trading schemes, like the EU ETS. Revenues from credits can support sustainability upgrades.	Public-private partnerships Collaboration between government agencies and private companies to co-finance sustainable projects. Reduces the financial burden on private shipping companies while helping achieve government sustainability goals.	Leasing arrangements Leasing low-carbon vessels or green technology instead of purchasing outright, reducing upfront capital expenditure and shifting risk to lessors.	Sustainability funds Dedicated funds or investment pools targeting ESG projects, including shipping decarbonisation or maritime-focused green funds.	Multilateral and development bank financing Financing from institutions like the European Investment Bank (EIB) or the World Bank , which often have programmes for sustainable transport and decarbonisation initiatives.

Debt financing

Equity financing

Grant/non-repayable financing

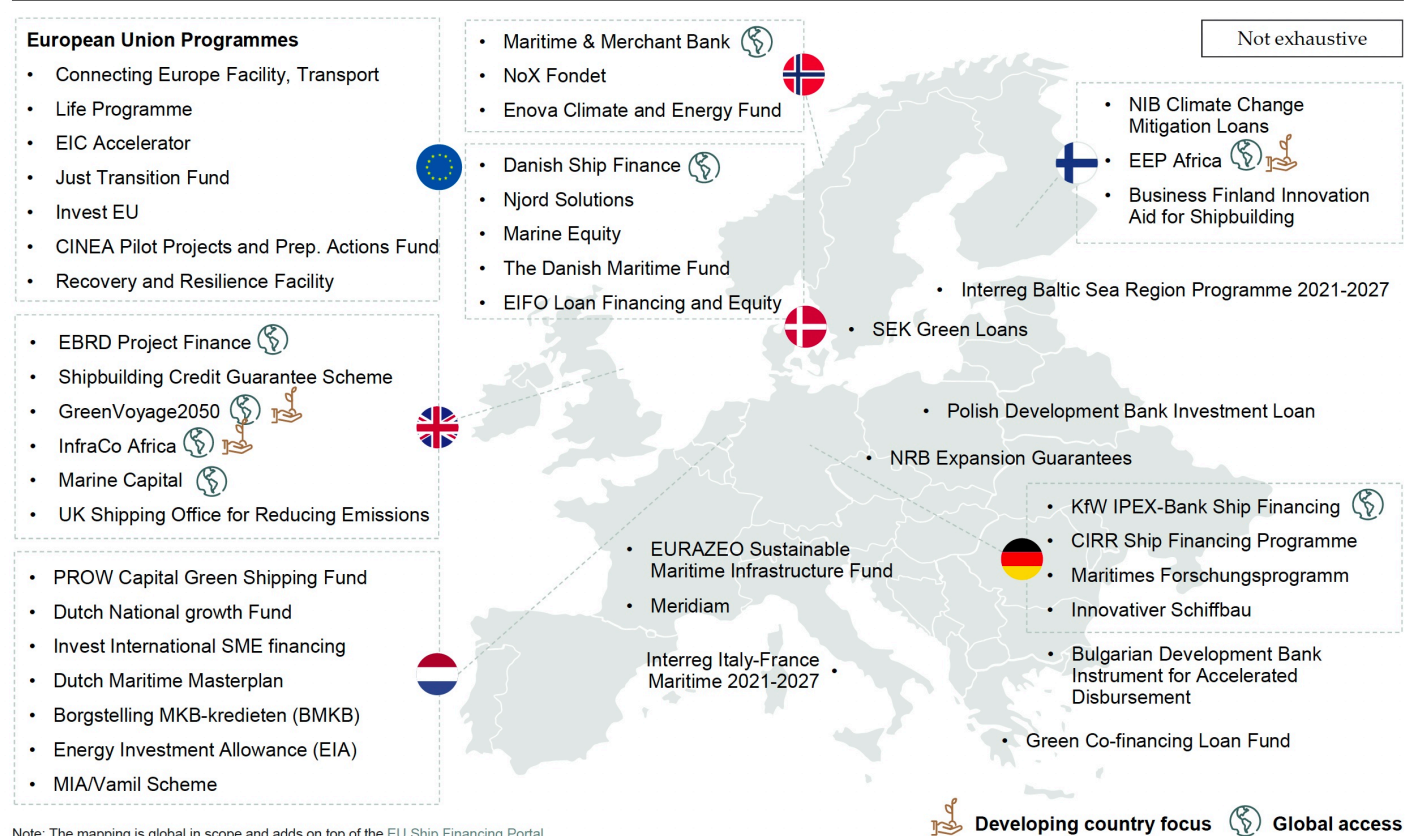
Structured financing

Investment-based financing

2. Development and approval of a NAP

Identify Funding Sources and Partnerships

Overview of financial support opportunities in Europe



“Europe is home to a diverse range of financial support opportunities for zero-emission ships and energy efficiency improvements, reflecting the region's leadership in maritime decarbonisation. The landscape includes both broad, supranational, cross-sectoral programmes, such as the EU's Connecting Europe Facility and Recovery and Resilience Facility, and specialised initiatives targeted at green shipping and maritime infrastructure.

Initiatives like the CIRR Ship Financing Programme and the PROW Capital Green Shipping Fund illustrate the increasing role of targeted funding mechanisms to accelerate maritime decarbonisation. Several national governments in Europe also offer targeted financing opportunities for the shipping industry.”

Source: Implement Consulting Group/DMA, February 2025

2. Development and approval of a NAP

Identify Funding Sources and Partnerships

Overview of global financial support opportunities with focus on developing countries

EEP Africa Fund Offers early-stage grant and catalytic financing to innovative clean energy projects and technologies across Southern and Eastern Africa. Funding: Grants  	GreenVoyage2050 Project An IMO-led initiative supporting developing countries in decarbonising their maritime sectors. Funding: Technical assistance (financial mechanisms under development)  	Green Climate Fund (GFC) A global fund financing climate mitigation and adaptation projects in developing countries, covering the maritime industry. Funding: Grants, loans, equity, and guarantees  	Global Environmental Facility (GEF) Provides funding for projects addressing environmental challenges, including maritime emissions. Funding: Grants and co-financing  	International Finance Corporation (IFC) Funds private-sector climate projects, including sustainable maritime initiatives, in emerging markets. Funding: Loans, equity, advisory services  
InfraCo Africa Provides funding and expertise to projects at all stages, including projects that the private sector considers too risky. Previously funded a waterbus on Lake Victoria. Funding: Equity  	LDC Investment Platform (LDCIP) A platform offering financial support for climate-smart investments in least developed countries. Funding: Grants, loans, and blended finance  	Least Developed Countries Fund (LDCF) Focuses on climate adaptation projects in least developed countries, including transport and infrastructure. Funding: Grants  	Inter-American Development Bank Provides financing for sustainable development projects in Latin America and the Caribbean. Funding: Loans, grants, and technical assistance  	Climate Investment Funds (CIF) Supports clean energy transitions in developing countries, including projects in sustainable transport. Funding: Low-interest loans, grants, risk-mitigation tools, and technical assistance  

 Maritime-focused  Developing country focus  Country of affiliation/registration

See deep-dive on page 18

“Developing regions like LATAM, Africa, and parts of APAC are crucial to global shipping but face financial barriers to decarbonisation.”

“Global financial mechanisms are bridging these gaps:

- **International Development Funds:** GCF and GEF provide grants and concessional loans for maritime projects.
- **Private-Sector Engagement:** IFC and CIF offer risk-mitigation tools and blended finance to attract investment.
- **IMO-Led Initiatives:** GreenVoyage2050 supports technical assistance, policy guidance, and future financing models.”

Source: Implement Consulting Group/DMA, February 2025

IMO Net-Zero Framework – Disbursement of revenue #1

Regulation 41

Disbursement of revenue

- 1** **The IMO Net-Zero Fund shall disburse collected revenue for the following purposes, as shall be specified in its governing provisions:**
 - .1** **rewards for the use of ZNZs, in accordance with regulation 39 of this Annex;**
 - .2** **in the context of the implementation of this chapter and, promoting a just and equitable transition in States by facilitating environmental and climate protection, adaptation and resilience building within the boundaries of the energy transition in shipping, paying particular attention to the needs of developing countries, in particular least developed countries (LDCs) and small islands developing States (SIDS), and allocating sufficient revenue, by:**
 - .1** **researching, developing and making globally available and deploying zero and near-zero GHG emission technologies, fuels and/or energy sources, supporting the energy transition of shipping, and developing the necessary maritime, coastal and port-related infrastructure and equipment;**

IMO Net-Zero Framework – Disbursement of revenue #1

Regulation 41

Disbursement of revenue

- .2 enabling a just transition for seafarers and other maritime workforce;
 - .3 facilitating information sharing, technology transfer, capacity-building, training and technical cooperation supporting the implementation of the regulations in this chapter;
 - .4 supporting the development and implementation of National Action Plans (NAPs), including fleet renewal and upgrade; and
 - .5 addressing, as appropriate, disproportionately negative impacts on States, including on food security, resulting from the implementation of the regulations in this chapter; and
- .3 cover the administration and operational costs of the Fund and its Governing Board.

2. Development and approval of a NAP

- Stakeholder Engagement and Consensus-Building
- Determining the aim and scope of the NAP
- Define Clear Objectives and Targets
- Develop Strategies and Actions
- Identify Funding Sources and Partnerships
- **Reviewing and Approving the NAP**



2. Development and approval of a NAP

Key questions

Is the draft NAP 'fit for purpose'?

- Is the NAP clear about what aim it is intended to achieve and how it supports the national government in its overall policy direction?
- Does the NAP take account of the wider agenda of government policy for shipping and the environment, especially with respect to climate change and air pollution?
- Does the NAP take into account the evolving international regulatory environment (in particular MARPOL Annex VI)?
- Does the NAP make clear links to other relevant strategies and policies so that it 'fits' with the overall direction of the government and avoids giving out contradictory messages?
- Are the objectives and actions clear? If met, will they lead to the overall achievement of the aim of the NAP?
- Is it easy to understand what needs to be done to implement the NAP?
- Does the NAP make clear reference to and fit within the appropriate legislative requirements?
- Is the NAP clear and concise? Is it written in a style that is simple and direct and avoids longwinded language or becomes difficult to follow?
- Is it clear who is responsible for implementing the NAP?
- Has the NAP been shaped by the involvement and consultation of a range of stakeholders?
- Does the NAP draw on a relevant evidence base to support assertions?

Reviewing and Approving the NAP

Once the NAP has been reviewed by all relevant parties and is considered 'fit for purpose', the document will require formal endorsement and approval/adoption at the highest appropriate political and administrative level, in line with national government protocols.

3. Implementation and monitoring of the NAP

Potential barriers to the development and implementation of a NAP

Potential barriers to the development and implementation of a NAP

Potential barriers may include:

- Weak regulatory authority;
- Lack of support from other ministries and stakeholders as well as lack of agreement on goals and objectives;
- Multiplicity of ministries involved makes coordination a challenge;
- No incentives for involvement of stakeholders and even a lack of interest in the issue;
- Lack of clarity on responsibilities and commitments during implementation;
- Lack of information;
- Competing policy priorities;
- Lack of an adequate budget;
- Non-availability or high cost of appropriate technology;
- Lack of trained personnel in relevant ministries and agencies;
- Inability to agree on appropriate objectives as well as a monitoring and evaluation strategy; and
- Limitations on the ability of stakeholders to adopt specific measures recommended in the NAP – for example, the economic climate places constraints on ability of especially medium and small shipowners to invest in new equipment.

3. Implementation and monitoring of the NAP

Develop a Monitoring and Evaluation (M&E) Framework

- **Establish Performance Indicators:**
Develop specific, measurable indicators to track progress towards the targets set in the NAP
- **Regular Reporting and Feedback:**
Create mechanisms for periodic reporting and review of NAP implementation.
- **Flexibility:**
Ensure NAP remains flexible to accommodate new tech., changes in market conditions, and evolving national or international commitments

3.1 Management of implementation

Key questions

- How will the overall implementation of the NAP be managed?
- Have the aims, objectives and actions been identified?
- Have responsibilities for each action been allocated?
- Have timeframes been set for each action?
- Have funding sources been identified?

Additional information

Once the aim, objectives and actions are identified, responsibilities allocated, timeframes set and resource requirements as well as potential funding sources identified, the various elements of the NAP can be assembled into an implementation plan. Table 2 below provides a possible outline.

Table 2: Implementation plan

	Responsible agency/actor	Timeframe	Total Resource cost	Funding source(s)
Objective 1				
Action 1.1				
Action 1.2				
Action 1.3				
...				

The NAP is expected to cover a significant range of activities which will require careful and consistent management. **It is recommended that the management of the NAP implementation be considered at an early stage.**

3. Implementation and monitoring of the NAP

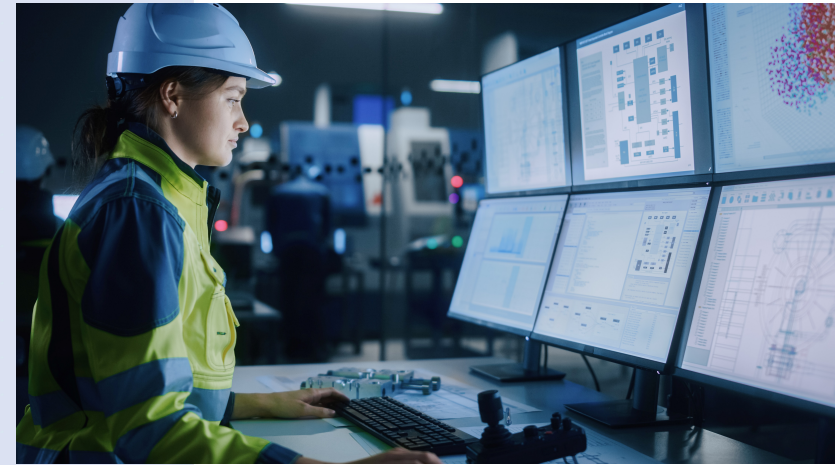
Key questions

Monitoring

- How will the implementation progress of the NAP be monitored?
- At what intervals will this occur?
- What criteria/performance indicators will be used to assess the implementation of the NAP?
- Who will be responsible for monitoring progress and evaluating effectiveness?

Evaluation

- Which actions have been successfully implemented?
- Which have not? If not, how could they be improved?
- Have other challenges been identified? (e.g. information gaps, lack of engagement)
- How can these challenges be addressed?

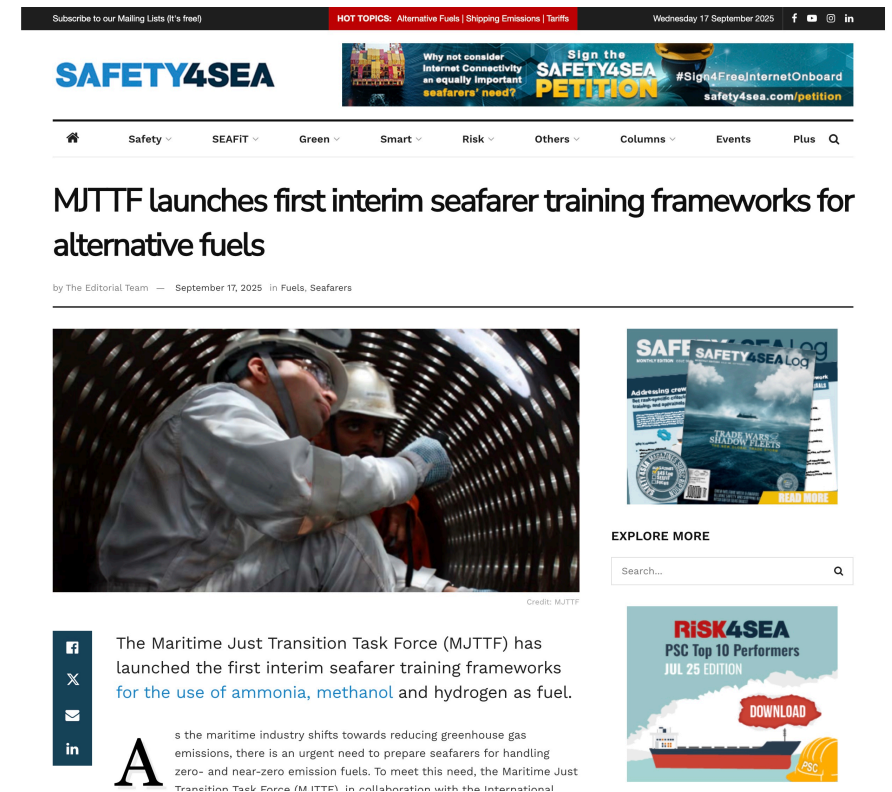


4. National or regional initiatives to the development and implementation of a NAP

- **Green shipping corridors**
 - provides a route/region focus and so potentially easier to implement
- **Linking green corridors with green hydrogen strategy**
 - need focus on both demand (ship) and supply (fuel) side policies
- **Green energy bunkering hub(s) for shipping**
 - Generates economic value; local offtake for e-fuel production as part of national energy strategy; future proof port and maritime industry
- **Maritime Just Transition Task Force (ICS, ITF, ILO, IMO, UN Global Compact)**
 - focus on seafarer training



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Key lessons learned

- **Buy-in and engagement is key**
 - Process to be initiated by appropriate agency, ideally at highest political level
 - Engagement and commitment from all relevant stakeholders (in some cases, identification of stakeholders can be a challenge) is crucial
- **There is no one-size-fits-all approach!**
 - Importance of actions specific to the national maritime context to get buy-in/political interest
 - For example, NAP for SIDS in the Pacific will have a different focus to SIDS in the Caribbean
- **Can be resource intensive, importance of:**
 - Understanding drivers/motivation – i.e. determining the need for the NAP
 - Securing buy-in and engaging stakeholders at the appropriate level
 - Understanding of resource implications (human and financial). Where would this budget come from? Can it be sustained? Dedicated resource?



Implications for the Mediterranean Region

Implications for the Mediterranean Region

- **Island States or island communities within the Mediterranean region**
- **Marine fuel production and supply**
- **State not a Party to MARPOL Annex VI**

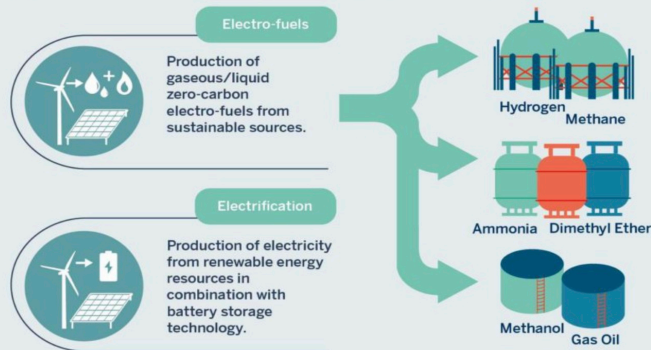
Island States or island communities within the Mediterranean region

- Specific features that drive unique economic, social and environmental vulnerability and effect their transport and trade arrangements:
 - Smallness, insularity, vulnerability, finance
 - Challenges amplified by emerging trends: larger ship sizes; more stringent logistical requirements; fuel costs and energy price volatility; heightened fossil fuel energy dependency; climate change
- Need to develop and promote sustainable domestic and interregional shipping solutions as well as build resilient trading systems
- Build capacity to pursue a blue and climate-proof recovery – support a sustainable blue economy
- Specific characteristics needing consideration in the NAP: energy transition/security; balance between international maritime transport policy and domestic shipping issues/concerns; aging fleets/port infrastructure; effectiveness of public sector

Zero-carbon fuels for shipping

1 Using a mix of electro-fuels and electricity, both made from renewable energy, plus some limited bio-fuels, shipping can achieve the IMO GHG target and reduce its emissions further.

Renewable energy source options + products



Bio-fuels + limitations

1st Generation

Produced from food resources, such as wheat and sugar.

Resource competition
Life-cycle emissions



2nd Generation

Produced from bio-mass resources such as wood and organic waste.

Resource competition
Land use alteration



3rd Generation

Produced from sustainably cultivated organic materials such as algae.

Life-cycle emissions
Commercial viability



4th Generation

Produced from bio-mass resources in combination with carbon dioxide capture and storage.

Resource competition
Land use alteration

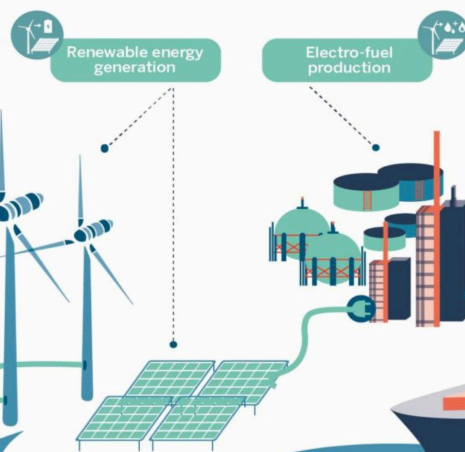


A number of limitations are associated with bio-fuels. That is why electro-fuels and electricity generated from renewable energy are likely the more sustainable option.

No one solution fits all. Different solutions suit different vessel types based on size, power and range requirements.

Short-sea or domestic shipping suitable for electrification

Relatively small tonnage and limited range requirements, including small cargo ships and tankers, barges, ferries.



Deep-sea shipping requiring electro-fuels

Large tonnage and considerable range requirements, including large container ships, bulk cargo and gas carriers, larger tankers, cruise ships, RoRo ferries, etc.

2

Further work is needed to transition the maritime industry to zero-carbon fuels.

3

Infrastructure

- Scale up production of renewable energy production & zero-carbon fuels
- Improve availability and reduce costs

Ship level

- Scale up deployment of zero-emission vessels

Regulations

- Develop supportive policy, standards and rules

Sources: Brynolf et al. (2018) Electrofuels for the Transport Sector: A Review of Production Costs, *Renewable and Sustainable Energy Reviews*, 81(2), 1887-1906; LR & UMAS (2019) Zero-Emission Vessels: Transition Pathways (incl. supporting documents); Royal Academy of Engineering (2017) Sustainability of Liquid Biofuels.

Source:
UMAS, June 2020

Renewables overtake coal as world's biggest source of electricity

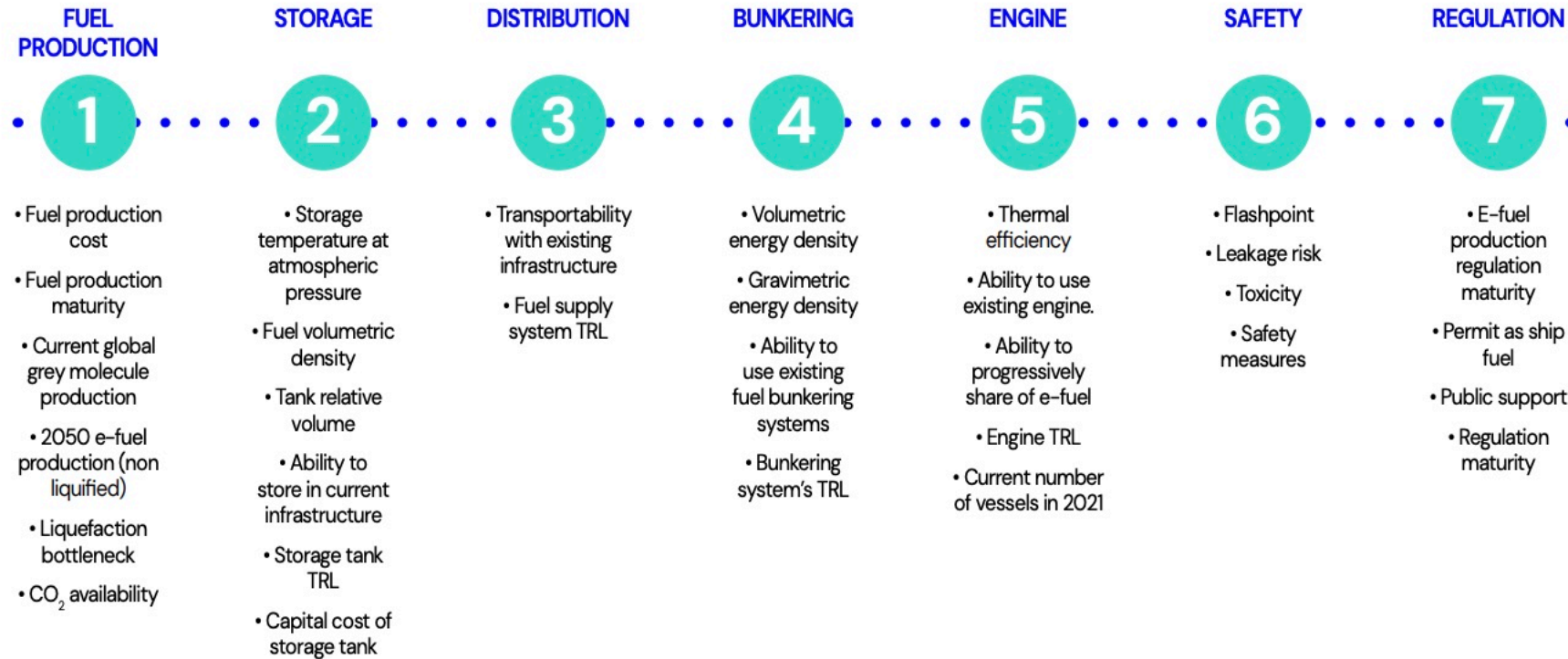


Justin Rowlatt >

Climate Editor

Source:
BBC, 7 October 2025

e-Fuel production and supply - issues



Source:
E-fuels for Maritime Applications, New Energies Coalition,
November 2021 (TRL = Technology Readiness Level)

Fuel production and supply - summary

1. Production

- new opportunities for producers of ZNZ fuels – potential for States to become net-exporters of energy?
- synthetic fuels generated from sustainable energy e.g. solar – part of national energy policy

2. Supply (Transport, Storage and Bunkering)

- hydrocarbons (HFO, MGO, LNG), biofuels, methanol, ammonia, hydrogen (IMO IGF Code covers use by ships)
- new ship tonnage required to transport as cargo/bunker new fuels?
- storage of multiple fuels - investment in port infrastructure to supply and store new fuels but as they have a lower energy density likely to mean more storage required
- safety & training implications – risks need to be identified and managed
- regulatory framework lag – safety, insurance, liability (unknown unknowns!?)

3. Energy supply network capacity and compatibility e.g. onshore power supply (for example: EU requirements)

4. Finance



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State not a Party to MARPOL Annex VI

1. 108 IMO Member States are Contracting Parties to MARPOL Annex VI
2. Five Contracting Parties to the Barcelona Convention are not a Party to MARPOL Annex VI
3. States that are not a Party, including several in the Mediterranean Region, will be potentially at a disadvantage when seeking uniform and effective implementation of IMO Net-Zero Framework
 - Does not have the right to issue to a registered ship a Statement of Compliance related to the annual GHG fuel intensity (regulation 37 of MARPOL Annex VI)
 - Ships will still need to comply if trading internationally and so will need another Administration to issue a Statement of Compliance to demonstrate to port State control authorities that the ship is compliant – payment of remedial units, receipt of rewards for use of ZNZs
 - Access to IMO Net-Zero Fund?
Regulation 40.4 of MARPOL Annex VI [IMO Net-Zero Fund] reads as follows:

“The governing provisions, referred to in paragraph 3 of this regulation, shall include provisions specifying which entities may be eligible to receive funds from the IMO Net-Zero Fund.”

Development of National Action Plans

1. **NAP provides national policy framework to support implementation of draft regulation 42 of MARPOL Annex VI including for Member State accession to MARPOL Annex VI**
2. **Guidance Document on the preparation of National Action Plans to address GHG emissions from ships in the Mediterranean region, REMPEC, July 2025**
3. **IMO Circular Letter.5062 (2 September 2025) Call for Expressions of Interest: GreenVoyage2050 support for the development of National Action Plans to address GHG emissions from ships**
4. **REMEPC Circular Letter No. 13/2025 (3 October 2025) Call for Expressions of Interest: Pilot Project for the Preparation of a National Baseline Assessment (NBA) of the existing national regulatory framework to Support the Development of a National Action Plan on GHG Emissions from Ships deadline: 22 October 2025**



Wrap-up and next steps

Thank-you for your attention



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Poll 1

Is it mandatory for an IMO Member State to prepare a National Action Plan to reduce GHG emissions from ships?

A. Yes

B. No

C. Only if a Party to MARPOL Annex VI

D. Don't know

Poll 2

Which ships should the NAP be developed for?

- A. Domestic only**
- B. International only**
- C. All ships**
- D. What the Member State identifies is most appropriate**

Poll 3

What is the most important issue to ensure successful delivery of a NAP?

- A. Stakeholder buy-in**
- B. Funding**
- C. Political will**
- D. All the above**

Poll 4

What do you foresee as the biggest challenge in engaging stakeholders for your country's National Action Plan (NAP)

- A. Lack of awareness about shipping/maritime sector**
- B. Limited coordination between government agencies**
- C. Limited capacity or technical expertise**
- D. Stakeholders have competing priorities**