MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

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Agenda Item 8: Reduction of GHG emissions from ships

Guidance Document on the Development of National Action Plans (NAPs) to Address Greenhouse Gas (GHG) Emissions from Ships in the Mediterranean region

REMPEC
Malta, 2025

Note by the Secretariat

The present document presents the draft Guidance Document on the Development of National Action Plans (NAPs) to Address Greenhouse Gas (GHG) Emissions from Ships in the Mediterranean region, as prepared by the Secretariat.

The Meeting will be requested to consider and approve the draft Guidance Document.

Background

1. In 2018, the International Maritime Organisation (IMO) adopted the Initial IMO Strategy on reduction of greenhouse gas (GHG) emissions from ships (hereinafter referred to as the Initial IMO GHG Strategy), which defined the objectives, tools, pace of work and guiding principles and as such was the framework for IMO Member States to decarbonise shipping.

2. The Global Environment Facility (GEF)-United Nations Development Programme (UNDP)-IMO Global Maritime Energy Efficiency Partnerships (GloMEEP) Project published, in collaboration with the Institute of Marine Engineering, Science and Technology (IMarEST), as part of its Ship Emissions Toolkit, *Guide No.3: Development of a national ship emissions reduction strategy*, aimed at supporting countries in developing a national ship emissions reduction strategy that can guide potential policy and investments options.

3. In 2020, IMO adopted a Resolution to encourage IMO Member States to develop and submit voluntary National Action Plans (NAPs) to address GHG emissions from ships, which was revised in 2022 to include references to shipping routes to support decarbonisation (Resolution MEPC.367(79)). The latter suggests that NAPs could include but are not limited to:

.1 improving domestic institutional and legislative arrangements for the effective implementation of existing IMO instruments;

.2 developing activities to further enhance the energy efficiency of ships;

.3 initiating research and advancing the uptake of alternative low-carbon and zero-carbon fuels;

.4 encouraging the production and distribution of such fuels for shipping;

.5 accelerating port emission reduction activities, consistent with resolution MEPC.366(79);

.6 fostering capacity-building, awareness-raising and regional cooperation;

.7 facilitating the development of infrastructure for green shipping; and

.8 facilitating voluntary cooperation through the whole value chain, including ports, to create favourable conditions to reduce GHG emissions from ships through shipping routes and maritime hubs consistent with international law, including the multilateral trade regime.

4. In 2022, the IMO-Norway GreenVoyage2050 Project published the guide on *National Action Plan to address GHG emissions from ships – From decision to implementation*, which provides information on the crucial planning, development and implementation phases involved in the creation of a NAP. With a step-by-step approach, the guide invites policymakers to consider key questions for developing appropriate actions to address maritime GHG emissions, with additional recommendations for Small Islands Developing States (SIDS).

5. In July 2023, IMO adopted the 2023 IMO Strategy on Reduction of GHG Emissions from Ships (hereinafter referred to as the 2023 IMO GHG Strategy) in accordance with the agreed programme of follow-up actions, which now replaces the Initial IMO GHG Strategy. The 2023 IMO GHG Strategy represents a framework for IMO Member States, setting out the future vision for international shipping, the levels of ambition to reduce GHG emissions and guiding principles; and includes candidate mid- and long-term further measures with possible timelines and their impacts on States. It also identifies barriers and supportive measures including capacity building, technical cooperation as well as research

and development (R&D).

6. COP 23[1] agreed to include the following activity in the UNEP/MAP Programme of Work and Budget for 2024-20252:

> 3.2.2. Mobilise and implement innovative solutions to reduce GHG emissions from ships in selected ports, including through energy efficiency and decarbonisation.

7. The Mediterranean region, with its unique challenges and opportunities, requires tailored approaches for the successful implementation of the 2023 IMO GHG Strategy by Contracting Parties to the Barcelona Convention (CPs), including relevant stakeholders. In line with international commitments to reduce GHG emissions, there is a need for the development of comprehensive NAPs tailored to the specific challenges of the Mediterranean region.

8. To this effect, REMPEC together with Green Marine Associates (Dr. Edmund Hughes) developed the Guidance Document, contained in the Annex, based on *IMO-Norway GreenVoyage2050 Project, 2022: National Action Plan – From decision to implementation.* This activity was financed by the voluntary contribution from the French Ministry for Europe and Foreign Affairs.

9. The Guidance Document provides guidelines on the crucial planning, development and implementation phases involved in the creation of a NAP and presents practical step-by-step tool which contains a catalogue of key questions that policy makers could consider in the process of developing NAPs.

Actions requested by the Meeting

10. **The Meeting is invited to**:

.1 **take note** of the information provided in the present document;

.2 **examine and approve** the Guidance Document contained in the Annex;

.3 **urge** Contracting parties to take the Guidance Document into consideration when developing the respective National Action Plans (NAPs); and

.4 **instruct the Secretariat** to publish the Guidance Document on the REMPEC website.

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[1] Twenty-third Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Portorož, Slovenia, 5-8 December 2023)

Annex

Draft Guidance Document on the Development of National Action Plans (NAPs) to Address Greenhouse Gas (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

Published in 2025 by the
The Regional Marine Pollution Emergency Response Centre
for the Mediterranean Sea (REMPEC)
Sa Maison Hill,
Floriana FRN1613, Malta

This activity was financed by the voluntary contribution from the French Ministry for Europe and Foreign Affairs and was implemented by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), in cooperation with the International Maritime Organization (IMO).

REMPEC is a Regional Activity Centre established within the framework of UNEP/MAP, with a view to coordinating the activities of the Mediterranean coastal States related to the implementation of the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (the "2002 Prevention and Emergency Protocol") to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (the "Barcelona Convention"). The Centre is based in Malta, hosted by the Maltese Government, and is administered by IMO in cooperation with UNEP/MAP.

This document was developed based on *IMO-Norway GreenVoyage2050 Project, 2022: National Action Plan – From decision to implementation.*

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List of Acronyms

AFID	Alternative Fuels Infrastructure Directive (of the EU)
CEM-Hubs	Clean Energy Marine Hubs
COP	Conference of the Parties (of the UNFCCC)
EU	European Union
EU-ETS	EU Emission Trading System
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change of the United Nations
LDC	Least Developed Country
MACC	Marginal Abatement Cost Curves
MAP	Mediterranean Action Plan
MARPOL	International Convention for the Prevention of Pollution from Ships (of IMO)
MEPC	Marine Environment Protection Committee (of IMO)
MTF	Maritime Technologies Forum
NAP	National Action Plan
NDC	Nationally Determined Contributions (under the Paris Agreement)
NMTP	National Maritime Transport Policy
NTF	National Task Force (for development of the NAP)
OPS	Onshore Power Supply
PPE	Personal Protective (Safety) Equipment
RED	Renewable Energy Directive (of the EU)
REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
SIMOPS	Simultaneous bunkering and cargo operations
SIDS	Small Island Developing States
SOLAS	International Convention for the Safety of Life at Sea (of IMO)
TEN-T	Trans-European Transport Network (of the EU)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

1 Introduction

1.1 This Guidance Document was developed to support Contracting Parties to the Barcelona Convention [1] with the preparation of National Action Plans (NAPs) for the reduction of greenhouse gas (GHG) emissions from ships in the Mediterranean region. NAPs are considered a crucial step to helping a Contracting Party to the Barcelona Convention both identify appropriate climate action but, importantly, to ensure that risks are addressed and opportunities fully exploited. The aim of the *Guidance Document on the preparation of National Action Plans to address GHG emissions from ships in the Mediterranean region* (this "Guidance Document") is to provide the following:

.1 an overview of existing international and regional regulations, guidelines, and best practices related to the reduction of GHG emissions from ships;

.2 the development of a structured framework for NAPs to address GHG emissions from ships, including key elements such as goal setting, stakeholders' engagement, policy measures, monitoring, reporting, and verification;

.3 the provision of practical tools, templates, and examples to support the preparation and implementation of NAPs to address GHG emissions from ships; and

.4 the identification and analysis of the specific challenges and opportunities for mitigating GHG emissions from ships in the Mediterranean region.

1.2 This Guidance Document is based on guidance developed by the International Maritime Organization (IMO) referenced in IMO resolution MEPC.367(79)[2]. The IMO guidance was published in 2022 as follows: *National Action Plan to address GHG emissions from ships – From decision to implementation* [3]. Since publication in 2022 there have been significant policy and implementation actions undertaken both globally and regionally and this Guidance Document seeks to reflect those.

1.3 In shipping, and in particular, international shipping, the underlying policy rational for action by Governments are that regulations and guidelines developed at a global, regional and national level are effectively and uniformly implemented so as to optimise opportunities and mitigate risks associated with maritime transport. This Guidance Document is not intended to provide comprehensive details of all regulations that should be considered but aims at providing an overview of the primary existing international and regional regulations related to the reduction of GHG emissions from ships.

1.4 In June 2023, the IMO adopted resolution MEPC.377(80) on the *2023 IMO Strategy on Reduction of GHG Emissions from Ships* (the "2023 IMO GHG Strategy") that identifies levels of ambition, including to peak GHG emissions from international shipping as soon as possible and to reach net-zero GHG emissions by or around, i.e., close to, 2050, taking into account different national circumstances, whilst pursuing efforts towards phasing them out as called for in the 2023 IMO GHG Strategy's Vision consistent with the long-term temperature goal set out in Article 2 of the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).[4]

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[1] Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.
[2] MEPC.367(79) *Encouragement of Member States to develop and submit voluntary national action plans to address GHG emissions from ships*, adopted December 2022, revoked resolution MEPC.327(75).
[3] *IMO-Norway GreenVoyage2050 Project, 2022: National Action Plan – From decision to implementation* https://greenvoyage2050.imo.org/wp-content/uploads/2022/08/NAP-from-decision-to-implementation_compressed.pdf (accessed 28 May 2024).
[4] The 2023 IMO GHG Strategy revised the *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (the "Initial IMO GHG Strategy"), adopted in 2018, as IMO Member States recognised the need to strengthen the ambition.

1.5 The 2023 IMO GHG Strategy identifies a level of ambition whereby the "*uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to represent at least 5%, striving for 10%, of the energy used by international shipping by 2030*". This and climate action by the European Union (EU) (see below) will increasingly impact maritime transport in the Mediterranean region and so there is an urgent need for Contracting Parties to the Barcelona Convention to consider the challenges and opportunities from a national perspective.

1.6 The Initial IMO GHG Strategy adopted in 2018 had identified, as a candidate short-term measure, the need 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*".

1.7 In this regard, IMO resolution MEPC.367(79) adopted in 2022 encourages IMO Member States to develop and submit voluntary NAPs to address GHG emissions from ships, outlining respective policies and actions. NAPs may be developed by IMO Member States willing to initiate early actions at national level to facilitate the reduction of GHG emissions from ships without awaiting the entry into force of measures in the IMO context. The resolution suggests that the NAPs could include but are not limited to:

.1 improving domestic institutional and legislative arrangements for the effective implementation of existing IMO instruments;

.2 developing activities to further enhance the energy efficiency of ships;

.3 initiating research and advancing the uptake of alternative low-carbon and zero-carbon fuels;

.4 encouraging the production and distribution of such fuels for shipping;

.5 accelerating port emissions reduction activities, consistent with IMO resolution MEPC.366(79)[5], that invites IMO Member States to promote the consideration and adoption by ports, within their jurisdiction, of regulatory, technical, operational and economic actions to facilitate the reduction of GHG emissions from ships.

Those could include, but are not limited to, the provision of:

(a) Onshore Power Supply (OPS) (preferably from renewable sources)[6];

(b) safe and efficient bunkering of alternative low-carbon and zero-carbon fuels;

(c) incentives promoting sustainable low-carbon and zero-carbon shipping; and

(d) support for the optimisation of port calls.

.5 fostering capacity-building, awareness-raising and regional cooperation;

.6 facilitating the development of infrastructure for green shipping; and

[5] MEPC.366(79) *Invitation to Member States to encourage voluntary cooperation between the port and shipping sectors to contribute to reducing GHG emissions from ships*, adopted December 2022, revoked resolution MEPC.323(74).
[6] Refer to MEPC.1/Circ.794 and further guidelines concerning the safe operation of OPS under development by the IMO Maritime Safety Committee (MSC).

.7 facilitating voluntary cooperation through the whole value chain, including ports, to create favourable conditions to reduce GHG emissions from ships through shipping routes and maritime hubs consistent with international law, including the multilateral trade regime.

1.8 As noted, resolution MEPC.367(79) invites IMO Member States to take into account the IMO guide on *National Action Plans to address GHG emissions from ships, from decision to implementation* and to submit their NAP to the IMO Secretariat and provide updates, as relevant, thereafter. A repository of submitted NAPs is available on the IMO website.[7]

Domestic shipping

1.9 Regulatory action taken at an international (IMO) and regional (EU) level to reduce GHG emissions will drive developments in the production and supply of alternative fuels and energy efficiency technologies that are likely to be equally important and applicable for both international and domestic shipping. Indeed domestic passenger shipping has already been at the forefront for the development of alternative marine propulsion technologies (e.g., diesel-electric, where voyage length and range of operation is not as critical as with deep-sea ships).

1.10 Furthermore, the importance of domestic shipping as a source for a significant proportion of total emissions from the shipping sector was recognised in the Fourth IMO GHG Study 2020[8]. This study produced significantly increased revised estimates of GHG emissions from domestic ships to be approximately 30% of total emissions from the shipping sector. As such, domestic shipping will play an increasingly important role in enabling the shipping sector to contribute fully to global efforts to address climate change.

1.11 For many Contracting Parties to the Barcelona Convention, domestic shipping is already an important economic sector and could provide an early focus for actions to support decarbonisation that could be readily leveraged to support complementary actions for international shipping (e.g. green shipping corridors).

European Union

1.12 Relevant to the Mediterranean region, not least because several Contracting Parties to the Barcelona Convention are EU Member States, and the geographic proximity and trading relationships with other Contracting Parties to the Barcelona Convention, is the regulatory action taken to date by the EU that is applicable to shipping.

1.13 It is not the purpose of this Guidance Document to provide a comprehensive overview of the key EU instruments but it is important that these instruments are noted and their implications assessed by Contracting Parties to the Barcelona Convention as part of the development of their NAPs.

[7] https://www.imo.org/en/OurWork/Environment/Pages/RELEVANT-NATIONAL-ACTION-PLANS-AND-STRATEGIES.aspx (accessed 28 May 2024).
[8] IMO (2020) *Fourth IMO GHG Study*, 2020, https://www.imo.org/en/OurWork/Environment/Pages/Fourth-IMO-Greenhouse-Gas-Study-2020.aspx (accessed 28 May 2024).

1.14 Importantly, these EU instruments, and with them possible funding streams for actions to support maritime decarbonisation[9], provide an opportunity not only for Contracting Parties to the Barcelona Convention that are EU Member States but also for the others seeking to develop collaborative actions such as "green shipping corridors" (see section below) with the former.

EU Emissions Trading System (EU ETS)

1.15 The EU Emissions Trading System (EU ETS)[10] is currently the world's largest carbon market and was originally introduced in 2005 by the EU as a key pillar of action by the region to address climate change by reducing GHG emissions through an emissions cap-and-trade system.

1.16 As part of the 'Fit for 55' package, the EU ETS Directive has been revised to align it with the new EU target set in the European Climate Law to reduce by 2030 net GHG emissions by 55% (compared to 1990 levels) and net zero by 2050.

1.17 An emissions cap-and-trade system sets a limit, or cap, on GHG emissions for certain sectors of the EU economy as part of an overall goal for the region as a whole. Each year, a limited number of EU Allowances (EUAs) is made available for trading in the market, and this is reduced yearly in order for the EU to meet its target which has been strengthened over time. Each EUA gives a company to which the EU ETS applies the right to emit GHG emissions equivalent to the global warming potential of one tonne of CO_2 equivalent.

1.18 On 5 June 2023, new EU legislation entered into force which extended the scope of the EU ETS to maritime transport, a sector previously excluded. The new rules applied from 1 January 2024 and will have a significant impact on the shipping sector in Europe and those engaged with trading to the EU.

FuelEU Maritime

1.19 The FuelEU Maritime regulation[11] 2023/1805 is being introduced as a complementary regulation to the EU ETS, ensuring that the GHG emissions intensity of fuels used by the shipping sector will gradually decrease over time. FuelEU Maritime shall apply from 1 January 2025 (except for monitoring plan articles, which shall apply from 31 August 2024).

1.20 The main objectives of the Fuel EU Maritime initiative are identified as being:

.1 to increase the demand for and consistent use of renewable and low-carbon fuels to reduce the GHG emissions from the shipping sector;
.2 ensuring the smooth operation of maritime traffic; and
.3 avoiding distortions in the internal EU market.

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[9] On 29 February 2024, the European Commission published a call for proposals under the "Connecting Europe Facility" ("CEF") transport funding programme to support the deployment of alternative fuels supply infrastructure and contribute to decarbonisation along Europe's most important transport network (the "TEN-T network"). The programme is closely tied to the new regulatory framework for the transport sector in the EU "Fit for 55" package, which sets ambitious standards regarding the use of alternative fuels and the deployment of adequate infrastructure (Alternative Fuels Infrastructure Regulation (AFIR), FuelEU Maritime and ReFuelEU Aviation). Overall, the call for proposals under the CEF programme provides a valuable funding opportunity for port operators within the TEN-T network as well as shipowners supporting the decarbonisation process and lowering the cost of compliance with the strict EU regulations. https://www.wfw.com/articles/enabling-energy-transition-in-the-transport-sector-new-funding-opportunities-for-port-operators-and-shipowners/ (accessed 28 May 2024).

[10] Consolidated text: Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02003L0087-20240301 (accessed 28 May 2024).

[11] Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC. https://eur-lex.europa.eu/eli/reg/2023/1805/oj (accessed 28 May 2024).

1.21 In this way, FuelEU Maritime contributes to the EU-wide target of reducing net emissions by at least 55% by 2030, and for the EU to achieve climate neutrality in 2050.

1.22 FuelEU Maritime is designed to take a goal-based and technology-neutral approach, allowing for innovation and the development of new fuel technologies to meet future needs, and offering operators the freedom to decide which to use based on ship-specific or operation-specific profiles.

1.23 Other EU climate action that are specific to the maritime sector are the requirements for Monitoring Reporting and Verification of GHG emissions[12] (this underpins both EU ETS and FuelEU Maritime requirements) and the Alternative Fuels Infrastructure Directive (AFID)[13]. For example, the use of OPS or "shore-side electricity supply" as it is termed in the AFID, is an increasing consideration and requirement for ships trading into the EU. AFID requires shore-side electricity supply to be installed by 31 December 2025 in ports of the EU TEN-T Core Network, and in other ports, unless there is no demand and the costs are disproportionate to the benefits, including environmental benefits. The FuelEU Maritime initiative introduces from 1 January 2030 an additional zero-emission requirement at berth, mandating the use of OPS or alternative zero-emission technologies in ports by passenger ships and containerships, where a ship is at berth for two hours or more.

[12] Consolidated text: Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02015R0757-20240101 (accessed 28 May 2024).

[13] Consolidated text: Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02014L0094-20211112 (accessed 28 May 2024).

2 Why a National Action Plan (NAP)?

2.1 The development of a NAP could mobilise a broad range of national stakeholders to get involved in ship emissions reduction efforts, including those in shipping-related sectors that may not necessarily be covered by IMO conventions, and thereby bring in new ideas, experience, capabilities and resources.

2.2 In their NAPs, Contracting Parties to the Barcelona Convention could also encourage and mobilise resources for research, development and deployment of low-emissions technologies and fuels at a national level, or from international financial partners. Through sharing research findings, best practices and lessons learned with the wider maritime community, Contracting Parties to the Barcelona Convention could promote the global uptake of these technologies and fuels. These and other activities could facilitate the step change needed to significantly reduce ship emissions, achieve the IMO's aims and commitments, and thereby contribute to global air pollution and GHG mitigation efforts.

2.3 In addition, a NAP could help Contracting Parties to the Barcelona Convention realise benefits not directly associated with reducing ship emissions, such as:

.1 job creation in new sectors;

.2 creation of new business and investment opportunities;

.3 decreased energy dependency; and

.4 reduced health care costs.

2.4 The NAP development and implementation process also has the potential to strengthen national institutional and technical capacity, and transfer knowledge to sectoral organisations. It can also help Contracting Parties to the Barcelona Convention coordinate among sectors and institutions that currently work in isolation from each other, and allow decision-makers to identify synergies among emissions reduction sectoral plans. Furthermore, sending a credible signal regarding future plans to reduce ship emissions can stimulate investment and international support for mitigation activities, promote technological innovation and engage the private sector.

2.5 In response to resolution MEPC.367(79) that requests IMO to continue to provide guidance and any further action which may be taken to assist IMO Member States, including developing countries, in particular Small Island Developing States (SIDS) and Least Developed Countries (LDCs), for the development of NAPs, REMPEC developed this Guidance Document that aims at supporting policy-makers wishing to develop a NAP. This Guidance Document builds on the IMO guide on *National Action Plans to address GHG emissions from ships, from decision to implementation* and includes additional information and actions that could be used to support action in the Mediterranean region. The general process is outlined in Figure 1 below.

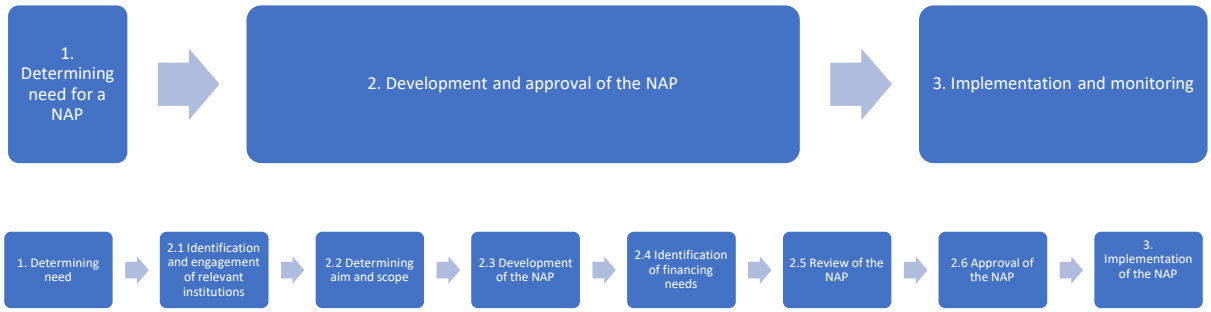

Figure 1: General process for NAP development

2.6 By their very nature, island States and island communities are heavily dependent on transport for access, trade and mobility. Maritime transport, in particular, is vitally important in sustaining such island States and communities, given their size, geography, economic structure and dependence on maritime transport-intensive imports for much of their consumption needs.[14] Whilst some Contracting Parties to the Barcelona Convention are island States, they are EU Member States and not considered developing countries. However, their economic security is very dependent upon maritime transport and, as such, their specific needs have to be acknowledged and recognised when developing NAPs. For that reason, additional guidance and recommendations dedicated to the development of a NAP for Contracting Parties to the Barcelona Convention that are island States is retained in this Guidance Document and is extended to island communities in the Mediterranean region as the guidance is likely also to be of interest to those Contracting Parties to the Barcelona Convention that have islands with significant populations dependent upon maritime transport. This specific guidance is provided here.

[14] UNCTAD (2014) *Closing the Distance: Partnerships for sustainable and resilient transport systems in SIDS.* https://unctad.org/system/files/official-document/dtltlb2014d2_en.pdf (accessed 28 May 2024).

3 Determining the need for a NAP

3.1 A key element of developing a NAP is the gathering and analysis of data and information. However, before this work is undertaken, it is imperative for policy-makers in the Contracting Party to the Barcelona Convention to identify what key policy drivers should be considered when developing a NAP to address GHG emissions from ships.

3.2 Additionally, development of a NAP may be both a capacity and resource intensive activity and so the need to develop a NAP should be carefully considered before its initiation. More specifically, it is recommended that the following policy questions should be considered/discussed and answered first in order to determine the need for the development of a NAP:

.1 What is the role of maritime transport in the national economic policy? How much of the country's economy and national economic development, including trade, is dependent on shipping and the services that support it?

.2 Is there an understanding of the proportion of emissions domestic maritime transport contributes to national emissions?

.3 What is the potential role of maritime transport in national energy transition? Can maritime transport be part of national energy transition policy? Can the country contribute to the decarbonisation of international shipping?

3.3 The following sections provide more detail on each of these questions. If the answers to these questions indicate a significant/important role for maritime transport, then development of a NAP should be prioritised. If the answers indicate a limited/negligible role, then it is likely that gaining political will to enact policy changes identified by a NAP will be more challenging.

Current role of maritime transport in national economic policy

3.4 For almost all nations, trade, as imports, exports or both, are considered an integral part of their sustainable development goals. Furthermore, maritime transport, due to its efficiency and cost, is considered the most appropriate mode for transporting the goods and commodities being imported or exported. Shipping is therefore likely to be a key contributor and/or a support to most national economies. Its role in this regard, however, can differ and should be reflected in the country's strategy for legal, policy and institutional changes.

Key questions

- Has the country developed a national maritime transport policy (NMTP)?
- What volumes of cargo are transported by sea, both in and out of the country as well as for intra-country trade? Distinguish by cargo type.
- What are the contributions of the domestic maritime passenger transport and tourism sectors to the national economy?
- What is the expected future demand for each cargo type?
- What is the maritime sector's direct contribution to the national Gross Domestic Product (GDP) through the trade of goods and raw materials transported at sea?
- What is the Direct Employment Contribution? (e.g. the employment of nationals in shipping activities, including shipbuilding and repair (including scrapping) and crew)
- Who are the supply chain-related industrial/commercial organisations? (e.g. steel manufacturing (for shipbuilding, etc.), engine and technology support, bunker supply and services)

- What are the direct tax contributions of the maritime sector? (e.g. income tax, Value Added Tax (VAT) and indirect taxes)
- What are the specific maritime taxation and fees? (e.g. port and harbour fees, tonnage tax)
- What are the multiplier contributions that the national maritime sector will stimulate? (e.g. through other types of expenditure, the purchase of goods and services)

Current contribution of domestic maritime transport to national emissions

3.5 An understanding of the role that maritime transport plays in the national policy context for climate change may be eased by estimating the current contribution of domestic maritime transport related to national GHG emissions. However, if this is not already identified, then this can be considered as part of the development of the NAP, rather than in the process of identifying the need for a NAP.

3.6 It should be noted that according to the Intergovernmental Panel on Climate Change (IPCC) guidelines, emissions resulting from the combustion of fuels used for international transport activities should, as far as possible, be excluded from national totals and reported separately based upon location of fuel sales. The encouragement to develop and submit NAPs should not be seen as diverging from the current IPCC emissions inventory guidance.

Key questions

- Is there an understanding of the quantity of GHG emissions the maritime transport sector contributes to at a national level?
- Are emissions from the maritime sector likely to increase further in the future? What are the underlying causes for increased emissions and can they be addressed through domestic maritime transport policy?

Potential role of maritime transport in national energy transition and country's contribution to the decarbonisation of international shipping

3.7 A key part of decarbonisation is the energy transition away from a dependence, both nationally and globally, on hydrocarbons to the use of alternative fuels and energy sources. Furthermore, energy transition needs to consider both the source of the energy and also the supply of the energy, including to non-national consumers such as international shipping. For both source and supply, consideration needs to be given to sustainability, reliability and economics.

Key questions

- Has the country adopted emissions reduction targets / climate change policies?
- What is the latest Nationally Determined Contribution (NDC) under the Paris Agreement? Are domestic shipping or port emissions included?
- Is there a regulatory framework already established for maritime transport? Does it address shipping emissions?
- Is there a national energy transition policy?
- What is the government's policy on energy supply to the maritime sector?
- As part of the country's efforts to decarbonise, is the country planning and/or developing alternative low-/zero-carbon energy sources for land-based industry?
- What alternative energy sources are under consideration?

- Where will those energy sources be generated and supplied from? Is this likely to drive new international maritime trade flows?
- What infrastructure is in place or needed to enable the energy to be distributed and supplied?
- Is there likely to be excess capacity of energy generation? (e.g. electro-fuels generated from renewable energy)
- Are there any plans for ports to provide OPS systems to ships?
- Are there any plans to provide the alternative energy to the maritime sector when it becomes available?
- Has there been a dialogue on this issue with stakeholders?
- Are there existing initiatives or plans from national maritime stakeholders in the area of shipping decarbonisation?

4 Development and approval of NAP

4.1 Once a clear need for a NAP has been identified, steps should be initiated to start development and this is likely to include:

.1 identification and engagement of relevant stakeholders;

.2 determining the aim and scope of the NAP;

.3 development of national actions;

.4 identification of financing needs;

.5 reviewing the NAP; and

.6 approving the NAP.

Identification and engagement of relevant stakeholders

4.2 Development of a NAP will require a significant degree of inter ministry/agency and cross-sector coordination. Responsibility for existing shipping legislation and policies are often spread over a range of ministries, agencies and implementing institutions (e.g. Government cabinets, Ministry of Environment, Ministry of Transport, Ministry of Energy, Ministry of Research, Ministry of Education, environment protection agencies, port authorities) and affect a broad range of stakeholders (e.g. shipping companies, industry associations, non-governmental organisations (NGOs) and interest groups).

4.3 As a starting point, a public body (e.g. ministry/government department/agency) should be identified to lead this process of NAP development, and other key stakeholders should be identified and engaged. It is recommended that all those who will play a crucial role in the NAP development are involved from the outset, forming a National Task Force (NTF) of manageable size, which should be a multi-stakeholder, inter-ministerial group. The NTF should include as far as possible all those who will be involved in developing the NAP and abide to an agreed roadmap and timeline.

4.4 Whether policy development and implementation responsibilities are shared or separated amongst different bodies, there is an important need for collaboration and communication between the various bodies with agreement made and understood before initiation as to the body coordinating action in order to ensure its legitimacy.

4.5 It is recommended that a strong and clear mandate be given to whoever is designated to lead the process of NAP development, from the relevant national authorities at the highest appropriate level.

Key questions

- Which ministry/government department/agency has responsibility for maritime transport?
- Which ministry/government department/agency has responsibility for policy on national GHG emissions?
- Do these bodies already collaborate on maritime policy?
- Who will be responsible for the development of the NAP to address GHG emissions from ships? Who should lead the process? Who should be involved/participate?
- Who will be responsible for implementation of measures developed as part of the NAP?

4.6 For these questions, it is also important to consider the enactment of international shipping regulations into national laws. Often it is the case that national laws for controlling domestic shipping are covered by policies and laws designed for other industrial sectors. International shipping laws, such as Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) – the International Regulations for Prevention of Air Pollution from Ships – are usually enacted when a country has significant interests in international shipping as either a large flag Administration or/and has a significant amount of international shipping traffic that enters its jurisdiction and the country wishes to control and enforce internationally agreed rules against internationally trading ships. The enacting of international legislation provides the international trading ship with its 'ticket to trade'.

Why is implementation of MARPOL Annex VI important?
For ships entering national ports: ratification and enactment into national law of international regulations allows the country to enforce international provisions against internationally trading ships. A failure to enact international laws leaves the States open to non-compliant international ships entering their waters and ports and not having the powers under international law to challenge and enforce those laws. Furthermore, it weakens the ability of the country to make formal representation to the government of the ship and even informally governments may not be willing to engage more proactively with a country that has not enacted the international requirements. **For the international ship register:** increasingly, due to legal and contractual issues, shipowners and operators want their vessels to be registered only with flag States that enact and implement all international regulations. Also ships registered with flag States that have not enacted international requirements are likely to be considered a higher risk by port States and so liable to inspection with the potential for enforcement action to be taken, including detention.

4.7 The above issues are very important because securing political will at the highest appropriate level is a critical aspect for developing and, in particular, for implementing the NAP. Without sufficient political will and government buy-in, preferably at the very beginning, it is likely that the development and/or implementation of the NAP will be slowed down or even come to a stand-still once problems arise or other agencies prioritise work on other issues at the expense of the NAP. **It is therefore crucial to mobilise political will and government buy-in at the earliest stage possible and to continue securing it throughout the NAP development and implementation process.**

Entities responsible for development of a NAP

4.8 The Constitution and administrative governance structure of the country also matter. A centralised government system will require coordination and integration, both within and across ministries and agencies.

4.9 The establishment of a sound coordinating mechanism is critical to developing and implementing a NAP and needs to be addressed early in the process.

4.10 In order to structure the process of developing and implementing the NAP in consultation and cooperation with the relevant agencies and stakeholders, the following actions are recommended:

.1 identify **Lead Body** (see Box 1)

.2 establish **National Task Force (NTF)** (see Box 2)

.3 designate **National Focal Point** (see Box 3)

4.11 The process instils ownership and thus ultimately strengthens implementation and compliance. It is also a tool for utilising the skill sets spread out over a number of institutions, sectors and civil society.

Entities responsible for development of a NAP

Box 1: Lead Body

The Lead Body has the principal responsibility for developing the NAP and should be in a position to "champion" the process, i.e. should have a clear understanding of the technicalities of the process and subject matter, along with a strong legitimacy to lead the process.

The Lead Body should support mobilising and securing political will and government buy-in at the highest appropriate level at the earliest stage of developing the NAP and should delegate various aspects or components of the NAP development to other stakeholders with particular competence in the field (e.g. the Port Authority or Ministry of Environment).

Box 2: National Task Force (NTF)

It is recommended that a National Task Force (NTF) be established for the purpose of advising and supporting the process of developing and implementing the NAP. The NTF membership ideally should include both government officials and major national stakeholders, in particular those who would be key to the success of the NAP development and implementation process. It is recommended that the NTF membership include:

- representative(s) from the Lead Body;
- pertinent government bodies (e.g. ministries and agencies dealing with GHG emissions and air pollution, maritime administrations, port authority representatives, and so on);
- stakeholders from the maritime industry and the environmental community, as appropriate (e.g. representatives from shipowners, shipbuilders, classification societies, maritime training organisations, NGOs and academia); and
- stakeholders from other industries, as appropriate (e.g. renewable energy producers, research institutions).

The NTF should be established at the earliest possible stage of the development of the NAP, in order to undertake meaningful consultations and ensure ownership by participants and all relevant stakeholders.

Box 3: National Focal Point

It is recommended that a specific individual from the Lead Body be designated as National Focal Point to be responsible for the overall coordination and management of the NAP development process on a national level as well as for organising and chairing relevant meetings.

Determining the aim and scope of the NAP

4.12 The aim of the NAP should set out where the country wants to be as well as what it is aiming for and why. The scope of the NAP should make clear what the plan will address, for example, ship emissions, port emissions, energy efficiency, CO_2 or GHG emissions, air pollutants, and whether it will be a standalone plan on emissions from shipping or part of a wider national maritime strategy.

4.13 It should be noted that resolution MEPC.367(79) specifically mentions the role of IMO Member States in extending the emissions reduction efforts to all shipping-related sectors that are not necessarily covered by IMO conventions.

4.14 Defining the aim of the NAP requires an understanding of where the country currently stands in terms of its maritime industry and ship emissions, as well as how these will likely develop in the future. Based on this understanding, the country should identify where it wishes to be, setting out its own vision statement for the future. Defining the aim of the NAP is closely linked with delineating its scope, establishing what aspects the NAP will address and, equally important, what it will not. The following sub-sections provide more detail on assessing the potential scope of the NAP.

National character of maritime transport

4.15 Several issues will need to be considered when identifying the national character of the maritime transport sector for the country. These issues are, in no particular order, as follows:

.1 shipping fleet composition;

.2 fuel consumption, fleet emissions, and possible emissions scenarios;

.3 existing legislation and policies related to emissions and climate change; and

.4 key maritime sectors and stakeholders.

The following sections aim at supporting assessment of these components further.

Shipping fleet composition

4.16 It will be important to identify which ships are of particular relevance to the country and which ships the NAP aims to address. There are various different fleet components that could be considered and further information on the different fleet components can be found on the next page.

4.17 The Fourth IMO GHG Study 2020 identified that, under a new voyage-based allocation of emissions, some 30 per cent of GHG emissions from ships are from domestic shipping (i.e., ships departing from and arriving in the same country). As such, as part of action to address climate change, including efforts under the Paris Agreement, it is increasingly important that Contracting Parties to the Barcelona Convention consider how they can mitigate emissions from domestic shipping solely under their jurisdiction.

Key questions

Is the current policy focus, including legislative framework, primarily domestic shipping or international shipping?

Which fleet is of particular importance to the country? Which fleet will the NAP address? Which fleet could the NAP have greatest influence over?

- Registered fleet: vessels registered in the country, regardless of whether they are actively trading in the country or not.
- Domestic fleet: vessels servicing the country's domestic transport demand by moving goods and people from one of its ports to another of its ports.
- Fleet servicing the international transport demand: vessels moving goods and people between one of its ports and a port of another country
- Fleet passing through the country's territorial waters: vessels operating in its territorial waters, but without stopping at one of its ports.
- Fleet owned by national shipowners: ships owned by companies registered in the country
- National fishing fleet

For the fleet of most relevance to the country (i.e. for the fleet to be covered by the NAP):

- How many ships are in that fleet? Which types and sizes of ship? What is the average age of the fleet? What is the breakdown of the fleet composition? Are there any sectors that could play a more important role and thereby contribute more to the country's economy in the future?
    - For each ship, what is the installed engine power, fuel types consumed, auxiliary power?
    - What are the types and volumes of cargo transported by the fleet?
- What are the main ship movement patterns and major routes, particularly in territorial waters, including near ports and harbours?

Different fleet components to consider

1 Registered fleet
This is the fleet flying the country's flag, i.e. vessels that are registered in the country, regardless of whether they are actively trading in its waters or not. This fleet is likely to include vessels whose owners are not citizens or nationals of the country. The registered fleet will be of high importance to countries with a large ship registry – and hence the associated responsibility as a flag State – but also to countries where ship registration constitutes an important income source.
2 Domestic fleet
The domestic fleet consists of vessels servicing the country's domestic transport demand by moving goods and people from one of its ports to another of its ports, both along its coast and on its inland waterways. The distinction between domestic and international shipping is determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. By this definition, the same ship may be engaged in both international and domestic voyages. There are overlaps between domestic and international shipping and it may be difficult for Contracting Parties to the Barcelona Convention to divorce policies for domestic shipping from policies for international shipping, and many Contracting Parties to the Barcelona Convention expand provisions from international conventions such as the International Convention for the Safety of Life at Sea, 1974 (SOLAS) or MARPOL to their domestic fleet, and sometimes even go beyond or anticipate future IMO requirements, which may incentivise early movers. Domestic shipping falls under the country's national jurisdiction and inventory of domestic emissions (IPCC, 2006). It could also, for example, be included in a country's NDC (UNFCCC, n.d.) under the Paris Agreement. The domestic fleet is likely to be of high importance to countries with long coastlines or extensive inland waterways, as well as for island States, and island communities.

3 Fleet servicing the international transport demand of the Contracting Party to the Barcelona Convention
The fleet servicing the country's international transport demand consists of those vessels moving goods and people between one of its ports and a port of another country. This fleet might be of particular importance to countries with high volumes of imports and/or exports carried by sea and large or many ports. Although the influence of a NAP on this fleet may be limited, countries may wish to explore the potential of port incentive schemes or the supply of low-carbon and zero-carbon fuels for international shipping.
4 Fleet passing through the territorial waters of the Contracting Party to the Barcelona Convention
The fleet passing through the country's territorial waters includes those vessels that enjoy the right of innocent passage through the territorial sea (United Nations Convention on the Law of the Sea, 1982 (UNCLOS), article 17), i.e. vessels that operate in the territorial waters, but do not stop at one of its ports. This fleet might be of particular relevance to countries with long coastlines as well as to countries close or adjacent to international key trading routes, which is particularly the case in the Mediterranean region. Along these routes, there are locations at which ships are forced to pass through in order to reduce distance travelled and costs. These points can be regarded as bottlenecks or choke points and include, for example, the Straits of the Dardanelles, the Suez Canal and the Strait of Gibraltar. These

areas of high ship densities give rise to significant navigation risks and can also result in poor air quality affecting coastal communities.

It should be considered that there may be a limited influence of a NAP on this fleet, especially since, under UNCLOS, coastal States may adopt laws and regulations for the prevention, reduction and control of pollution from vessels through the "competent international organisation" (e.g. IMO).

5 Fleet owned by national shipowners

This is the fleet of ships owned by companies registered in the country. In this context, the UN Trade and Development (UNCTAD) distinguishes between the concept of the "nationality of ultimate owner" and the "beneficial ownership location" (UNCTAD, 2014). The latter reflects the location of the primary reference company (i.e., the country in which the company that has the main commercial responsibility for the vessel is located). The "nationality of ultimate owner" is the nationality of the shipowner, independent of the location of the primary reference country. Just as today most ships fly a flag from a different country than the owner's nationality, owners are increasingly locating their companies in third countries, adding a possible third dimension to the "nationality" of a ship (UNCTAD, 2014).

6 National fishing fleet

This is the national fleet of fishing vessels operating from/to a port of the country. Fishing vessels, although not engaged in maritime transport strictly speaking, share many of the technical challenges faced by other ships in their decarbonisation journey.

Action at national level with regard to fishing vessels may range from emissions inventories to research, development, and demonstration (RD&D) in the area of alternative low- and zero-carbon fuels and energy sources for fishing vessels, crew training, etc.

A number of existing public policies for sustainable fisheries, including targeted State subsidies, may be used to support the decarbonisation of fishing vessels, and in this regard may be considered as part of NAPs.

Fuel consumption, fleet emissions, and possible emissions scenarios

Key questions

For the fleet(s) identified in the previous section to be covered by the NAP, what is the estimated/calculated ships' fuel consumption? What is the estimation of emissions from that fleet?
Is the data available of sufficient quality?
Does more data need to be gathered to improve accuracy of emissions estimates?
For future scenarios:

- What are the projected levels of economic development within the country?
- What is the expected future demand for seaborne trade?
- What are the current global trends and outlooks relevant to the development of your country's fleet?
- What is the expected development of the fleet and its emissions as well as infrastructure requirements up to 2050?
- What range of maritime technology roadmaps or scenarios for reducing emissions from the maritime sector exist?

Existing legislation and policies related to emissions and climate change

4.18 The reduction of emissions from ships, both air pollutants and GHG, is a complex issue that spans different policy areas (e.g. maritime transport, marine environment, climate change, air pollution, energy, transport, trade, infrastructure, and human health) and therefore is likely to be covered by different legislation and policies for which different institutions are responsible.

4.19 Effective implementation of policies at the national level requires an understanding of the various interlinkages between different ministries and institutions. In reviewing existing regulatory requirements, consideration must be given to the country's international and regional obligations, national policies and legislation, as well as local regulations, where applicable. A review could also identify existing regulatory gaps or deficiencies in key international agreements and conventions related to air pollution and GHG emissions, which may be of direct or indirect relevance to reducing emissions from ships, such as UNCLOS, MARPOL Annex VI, and the Paris Agreement.

4.20 In addition to these international agreements, Contracting Parties to the Barcelona Convention may be engaged in regional or supranational cooperation related to air pollution and climate change. While there are few regional agreements that focus purely on climate change and air pollution for shipping, the EU instruments being a key exception, climate-relevant provisions can be found in other regional or supranational agreements that were launched with other objectives, but have potential implications on climate change and air pollution for shipping, such as the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (the "2002 Prevention and Emergency Protocol") to the Barcelona Convention.

Key questions

- Has the Contracting Party to the Barcelona Convention ratified MARPOL Annex VI?
- Has national legislation been passed to give effect to MARPOL Annex VI? If not, where does it currently stand in the process?
- What are the main international obligations, regional agreements and initiatives and national policies and legislation that may directly or indirectly affect maritime emissions? These can span a wide range of topics, for example, maritime transport, marine environment, climate change, air pollution, energy, transport, trade, infrastructure and human health.
- How might these policies and legislation affect maritime emissions and ship energy efficiency?
- Are there obligations, guidelines or recommendations that must or should be taken into consideration? If so, which ones?

Key maritime sectors and stakeholders

4.21 The links between climate change and air pollution to various other topics mean that several ministries, government agencies or other institutions can be responsible for, or impacted by, national legislation to reduce air pollution and GHG emissions from ships. Therefore, it is important to identify which maritime sectors and stakeholders are expected to play a role in the reduction of GHG emissions from ships.

Key questions

- How is the country's maritime industry expected to develop and what impact will those developments have on the country? Which opportunities do these developments bring?
- Which maritime sectors, if any, could play a role in the reduction of GHG emissions? How could these sectors be promoted?
- Which key national, sub-national or local institutions are expected to play a role in the control of maritime emissions? (The template of stakeholder mind map in Figure 2 below may be used to illustrate any mapping of stakeholders involved in the NAP development and implementation process).
- What other maritime stakeholders will play an important role? Shipyards? Technology providers? Training institutions? Regional organisations? Domestic and international ports?
- Why are they important and what role are they likely to play? Are there existing commitments from specific stakeholders or groups of stakeholders that would deserve to be reflected in the NAP?

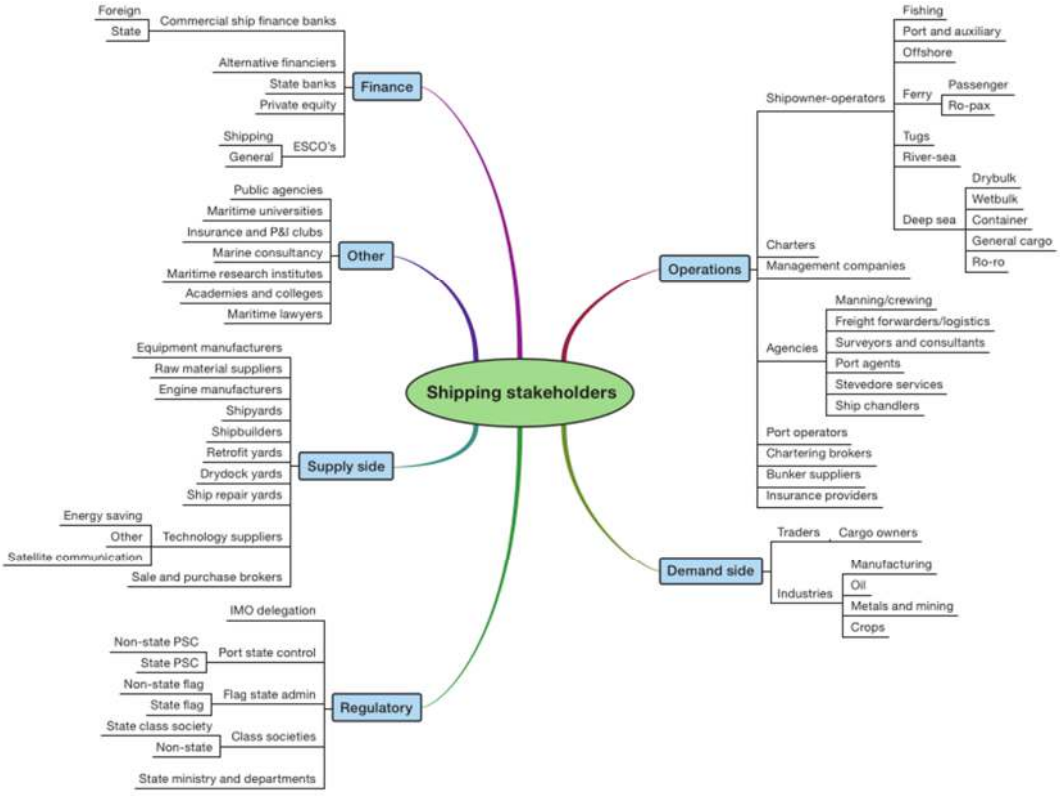

Figure 2: Stakeholders within the maritime sector

What role could ports play?

4.22 Ports are increasingly an important part of the efforts by maritime transport to decarbonise and need to be considered as part of any NAP to reduce GHG emissions from ships. This has been acknowledged by the IMO in resolution MEPC.366(79) that invites IMO Member States to encourage cooperation between ports and shipping sectors to contribute to reducing GHG emissions from ships.

4.23 Several issues will need to be considered when identifying what role ports could play as part of the potential for addressing GHG emissions from ships. These issues are, in no particular order, as follows:

.1 Existing and planned ports; and

.2 Existing bunkering facilities and expansion plans (see also section in Annex on "Green energy bunkering hub(s) for shipping").

Existing and planned ports

4.24 It is important to understand the ports of the Contracting Party to the Barcelona Convention, in terms of their capacity or throughput by freight types (e.g. for containers and bulk commodities), the type, size and number of ships they handle and any future expansion plans.

4.25 Complementary projects should capture upscaling initiatives related to promoting green shipping, pollution prevention, energy management and climate resilience of port infrastructure and operations.

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?

Additional information

4.26 Understanding the role and importance of ports in a country can help determine the scope of the NAP and what actions could be taken to address emissions. As all ports are different, it may be appropriate for individual ports to assess their own emissions and develop emissions reduction strategies accordingly, in line with the targets and goals set out in the NAP. In this regard, the IMO published a Port Emissions Toolkit, to provide guidance to ports in developing a port emissions inventory, and how to develop a port emissions reduction strategy[15].

[15] GEF-UNDP-IMO Global Maritime Energy Efficiency Partnerships (GloMEEP) Project https://greenvoyage2050.imo.org/publication-type/port-emission-toolkit/ (accessed 28 May 2024).

4.27 Furthermore, Arup, the engineering consultancy company, developed a framework for ports to establish an organisational net-zero roadmap.[16] Figure 3 below identifies the stages in developing a roadmap. Importantly they argue that this process helps realise the benefits that system-level consideration of decarbonisation trends can bring, whilst also facilitating emissions reductions in ports' direct control and their zone of influence. Arup and UMAS[17] have used the supply of ammonia fuel to two UK port clusters as a case study to explore the challenges around supply and demand of early-mover zero GHG emission fuels globally.

4.28 Ports and their hinterland are also critical hubs for services to support shipping, including bunkering, repair docks and shipyards, shipping companies, and maritime education and training establishments. All these need consideration as relevant stakeholders and as having a role in the reduction of emissions from the maritime sector.

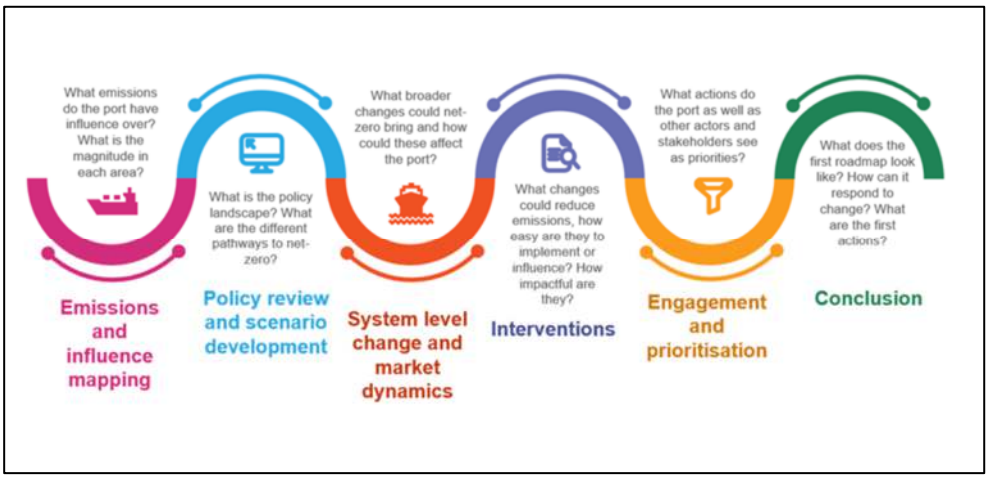

Figure 3: Stages in developing a net-zero roadmap for ports (Arup, 2021)

Development of national actions

Once the aim of the NAP has been established in line with other relevant national policies, it needs to be further elaborated through the identification of a set of objectives and actions.

4.29 There is no single set-way to develop the national actions to be included in a NAP and there are different approaches that can be considered. As of 2023, nine IMO Member States submitted NAPs to the IMO, but none are Contracting Parties to the Barcelona Convention. These plans do not follow a common methodology, thereby greatly differing in terms of scope, structure, and ambition. For example, a country may decide to break down the national actions by shipping fleet, setting national actions for specific ship-types such as domestic passenger ships, and other national actions for cargo ships. Or there may be a focus on ports and development of alternative fuel pathways. Figure 4 highlights three approaches based on existing NAPs taken from a repository of NAPs that were submitted to IMO.[18]

[16] Arup (2021) Ports: Net-zero, systems thinking and big opportunities. June 2021 https://www.arup.com/perspectives/ports-net-zero-systems-thinking-and-big-opportunities (accessed 28 May 2024).
[17] Arup and UMAS. (2024) Opportunities for the UK to kick-start shipping's transition to zero greenhouse gas emission fuel. https://www.arup.com/perspectives/publications/research/section/opportunities-for-the-uk-to-kick-start-shippings-transition-to-zero-greenhouse-gas-emission-fuel (accessed 2 June 2024)
[18] https://www.imo.org/en/OurWork/Environment/Pages/RELEVANT-NATIONAL-ACTION-PLANS-AND-STRATEGIES.aspx (accessed 28 May 2024).

Figure 4: Examples of different approaches to NAP development

Identifying objectives and actions

4.30 Objectives provide a more granular level of detail and define the specific outcomes that are needed to achieve the aim, answering the question "What needs to be achieved to get from where we are now to where we want to be?" Objectives should be SMART:

.1 Specific;

.2 Measurable;

.3 Assignable;

.4 Realistic; and

.5 Time-dependent.

4.31 **With the objectives set, actions should be identified.** The completion of actions will deliver the wider ranging objectives. In some cases, an action may only address one objective, while in other cases they will help to achieve multiple objectives.

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?

The table below provides some examples of possible objectives and actions that could be included as part of the NAP.

Table 1: Potential objectives and actions for the NAP

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	• Refer to IMO *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 IMO 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
		  ◦ OPS
		  ◦ 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 the country's coastal waters	Reduce emissions in country's coastal waters	• Assess potential to introduce/encourage speed optimisation 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 GHG 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 decarbonisation from the crew's perspective	• Organise training sessions on MARPOL Annex VI, EU requirements 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

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.

Identifying and creating linkages with other national and international strategies

4.32 It is unlikely that the NAP will be, or indeed could feasibly be, a standalone strategy. In most cases, the NAP will be intrinsically linked with other national policies and strategies, including, for example, those dealing with energy, health, environmental protection, trade, industry and labour. Therefore, consideration should be given to the potential impact of the NAP and its proposed objectives and actions, positive or negative, on the existing national policies and strategies. This could be done through scenario analysis.

4.33 **As part of determining the need for the NAP, relevant national policies and strategies should have been identified.** Integrating and aligning the NAP objectives or actions with other policy and strategic objectives will help avoid duplication as well as identify areas where the NAP can be implemented through an expansion of existing programmes. This will further strengthen the effectiveness of the NAP by ensuring a more efficient use of existing resources, greater operational efficiencies, and therefore greater overall success.

4.34 If there are many areas of overlap, it may be worth considering integrating the NAP into a broader non-maritime strategy (e.g. a national strategy on climate change or air quality), rather than developing a standalone NAP.

Key questions

- Is there an existing national maritime policy and strategy? Will the planned NAP be integrated into existing policies and strategies or will it be developed as a standalone NAP?
- Which national entities (government and private) have policies or strategies in place which could interact with the NAP?
- Which national policies and strategies may be complementary or in conflict with the aim and scope of the NAP?
- Are there supporting and complementary objectives and actions identified in the NAP?
- Can strategic aims, objectives and actions be harmonised on a cross-functional basis? (e.g. between different government bodies)
- Is there an opportunity to link the NAP to national UNFCCC strategies and programmes, including NDCs, Technology Transfer programmes, etc.? Would this linkage increase the means to delivering the NAP in line with other national climate change programmes?
- Are there commonalities of the NAP with regional and international policies and strategies? Are there opportunities to align these with each other, which could leverage resources for implementation?

Allocating responsibilities

4.35 **Once actions have been identified, responsibility for achieving each action should be assigned to a department or organisation best positioned to implement the action.**

Key questions

- Which entities will be responsible for delivering the objectives and actions identified in the NAP?
- Does that entity have the relevant expertise and experience?
- Whose support is required? What level of support is required?
- Which individuals of the entity will be responsible for ensuring implementation of the actions?

Setting timeframes for implementation

4.36 **A national timeframe should be determined for the achievement of each objective and action.** While at this stage this can only be an estimate that may have to be adjusted, the timelines should be set as carefully as possible and in conjunction with the implementing organisation to ensure that the objectives and actions fit within the overall timeframe to achieve the aim of the NAP, and to help estimate how many resources will be required to deliver the objectives and actions.

Key questions

- What is the timeframe and delivery date for each objective and action of the NAP?
- Is this aligned and realistic with the resources allocated to achieve the objectives?
- How much room is there for potential delays and disruption to implementation?

Identification of financing needs

4.37 Increasingly the key barrier to supporting climate action is finance. Contracting Parties to the Barcelona Convention need to identify sources of finance/capital that will enable them to take the necessary actions to both adapt to and mitigate climate change and so support efforts to achieve their NDC under the Paris Agreement.

4.38 Whilst multinational funding streams for climate action are available and likely to grow, access to those funds requires insight and understanding to be developed and the lead times to identify and obtain such funds can be significant. The levels of funding required are likely to increase with the ambition of the NAP.

4.39 Furthermore, there is an imperative for a country to identify the 'business case' for taking policy decisions and to demonstrate that the investment will lead to benefits for the country, including the identification of opportunities for economic development and growth. **It should be noted that the general rule of thumb for public investment is that investment in infrastructure will lead to economic growth whereas investment in consumption does not.**

4.40 Another potential source of funds would be the private sector. In such circumstances, a return on investment is critical and, as such, an increased emphasis on the national policy both setting out and identifying how the risks to investment can be mitigated.

4.41 It is recommended that discussions with key finance stakeholders on the funding requirements and potential sources of funding be initiated early on in the NAP development process and that national government departments, such as the Ministry of Finance or Treasury, be involved in these discussions.

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?

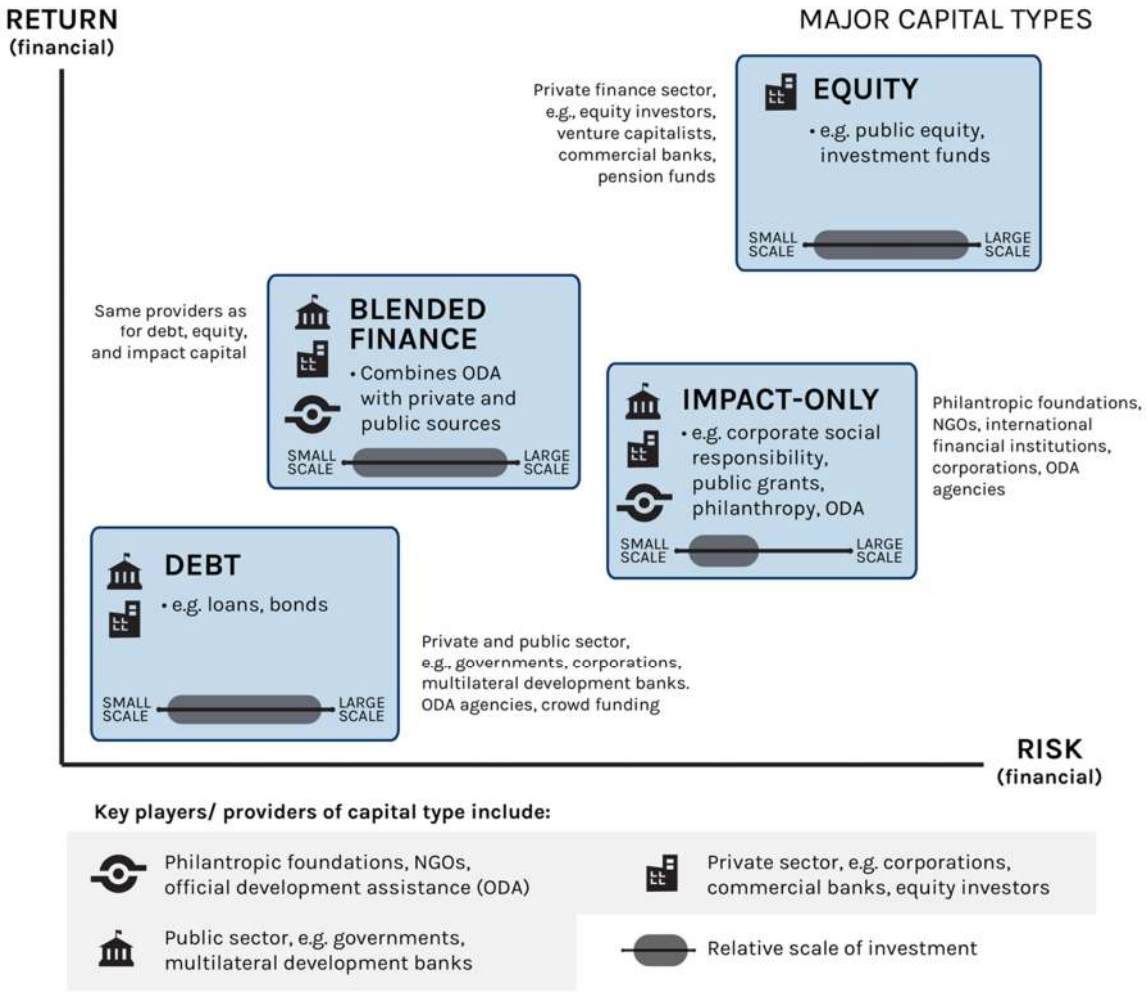

Figure 5: Summary of major capital types (Sumaila et al., 2021)

Additional information

4.42 A summary of major capital types, the level of risk vs. return for each capital type, and the key providers of capital type is set out in Figure 5 below. This summary is taken from a recent journal article[19] that has a focus on finance for developing a sustainable ocean economy. However, it is suggested that the capital types and risks are equally relevant for funding national action to address climate change. As such they could be used to guide consideration of policy on financing action for the maritime transport sector.

4.43 Maritime transport could be considered as providing potential for economic development, for example, through research and development, manufacturing, employment in shipping and port services. However, this economic development may only be likely at a national level where the NAP for reducing ship emissions is explicitly linked to other policy goals/initiatives (e.g. development of clean/green/renewable energy).

[19] Sumaila, U.R., *et al.* Financing a sustainable ocean economy. *Nature Communications* **12,** 3259 (2021). (accessed 28 May 2024).

4.44 Furthermore, to promote transparency in implementation of the NAP, enhance stakeholder buy-in and communicate risk, the use of quantifiable goals and metrics is considered an imperative. Such goals can be linked to graphical representations such as risk registers/traffic light schemes to illustrate progress. This is especially important when linking financial budgets to outcomes.

Reviewing the NAP

4.45 **Once the draft NAP is at a reasonably advanced stage, it should be reviewed in terms of whether it is 'fit for purpose'.** This means that it is clear about the aim to be achieved and how to achieve it. To do this effectively, the NAP should support the direction and vision of the government's overall policy and it should be easily understandable and accessible to the people who will need to work with it and implement it.

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?

Approving the NAP

4.46 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.

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.

5 Implementation and monitoring of the NAP

5.1 Once the NAP has been approved at the highest appropriate level, consideration should be given to how the implementation of actions will be managed, monitored and evaluated and how the NAP will be communicated to various audiences.

Management of implementation of the NAP

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

5.2 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				
…				

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

Monitoring and evaluation

5.4 The NAP development and implementation is an iterative process rather than a one-off activity and should be monitored, evaluated and revised on a regular basis to ensure the relevance of the NAP in the face of changing national and international circumstances. It is also important to monitor if desired results are being achieved or plan is on course towards the aim 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?

External communication

5.5 A communications strategy to raise awareness within the maritime community and the general public of the work being undertaken nationally to reduce GHG emissions from ships may be helpful in obtaining wider support for the NAP and should be considered an essential part of the implementation plan.

5.6 Once approved, in line with resolution MEPC.367(79), Contracting Parties to the Barcelona Convention are invited to voluntarily submit their NAP, and any relevant updates, to IMO for publication on its website.

Key questions

- How should the NAP be communicated?

Objectives:

- What is the objective of the communications strategy for the NAP and how is it aligned with the NAP? Is the objective to raise general awareness and/or to secure buy-in for effective implementation?

Audience:

- Who is the target audience(s)? What are their interests? How can they be targeted effectively?

Messages:

- What are the key messages to be conveyed?

Tools and activities:

- What tools and activities will be used to communicate the key messages?

Resources and timescales:

- What resources are available for communication? Can these be utilised within the required timescale?

Feedback:

- How can communication be improved/strengthened?

6 Additional guidance and recommendations for the development of National Action Plans by Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region

6.1 By their very nature, Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, are heavily dependent on maritime transport for access, trade, and mobility. Maritime transport in particular is critical, given their size, geography, economic structure and high dependence on maritime transport-intensive imports for much of their consumption needs.

6.2 The specific features that drive unique economic, social and environmental vulnerability and effect their transport and trade arrangements are grouped into four categories.

.1 **smallness**: Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, are unable to benefit from economies of scale, have limited land areas, economies, as well as markets and lower trade volumes, and suffer from insufficient economic base for manufacturing processes. Whilst this is also a challenge for other Contracting Parties to the Barcelona Convention, the sea can provide additional barriers (e.g., lack of connectivity to regional infrastructure such as power grids) but also provide opportunities (e.g., potential to generate renewable energy).

.2 **insularity**: heightens dependency on maritime and air transport for access, trade and mobility.

.3 **vulnerability**: Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, are also acutely vulnerable to external factors and environmental threats, including natural disasters, climate change impacts and global economic shocks, although Contracting Parties to the Barcelona Convention that are island States or communities that are within the EU are somewhat protected from economic shocks.

.4 **finance**: constraints related to an ability to access finance although here again Contracting Parties to the Barcelona Convention that are island States, or island communities within the EU, are provided with additional regional support.

6.3 However, the challenges resulting from these features are further amplified by a number of emerging trends, including:

.1 ever larger ship sizes, especially container carriers, which raise scale issues;

.2 more stringent requirements for faster, safer, more reliable, and cost effective logistics;

.3 fuel costs and energy price volatility;

.4 heightened fossil fuel energy dependency; and

.5 climate change.

6.4 As the challenges are multiple and multifaceted, national development strategies for Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, need to focus on a portfolio of measures that address the transport-related challenges while at the same time capitalising on existing synergies and complementarities involving other sectors such as trade, tourism, and fisheries (UNCTAD, 2014). Relevant response measures should aim at reducing transport costs, improving transport infrastructure and services, building climate preparedness and resilience, as well as promoting affordable and low-carbon maritime transport systems that are energy efficient and less fossil fuel dependent. Overcoming these challenges requires that adequate levels of funding be mobilised and that more diversified sources of finance, including innovative financing solutions, be promoted (UNCTAD, 2014).

6.5 UNCTAD identified that small island States may be subject to longer lasting and more critical impacts as a result of economic shocks, for example, COVID-19 pandemic.[20] From this perspective, building a stronger maritime sector that can absorb shocks in future and enable Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, as well as their economies to recover, thrive and grow, requires stronger international and inter-organisational dialogue, cooperation and support, as well as addressing important financial, technological and capacity-related gaps. As such, the development of a NAP should consider the following key elements:

.1 promote sustainable domestic and interregional shipping solutions as well as build resilient trading systems;

.2 build capacity to pursue a blue and climate-proof recovery; and

.3 specific characteristics of Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, needing consideration in the NAP.

Promote sustainable domestic and interregional shipping solutions as well as build resilient trading systems

6.6 When disruptions occur, it is important to ensure that the liner shipping connectivity of Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, is not further undermined. Policy-makers can help improve the situation by:

.1 promoting sustainable domestic and interregional shipping solutions capitalising on small-scale inter-island regional trade opportunities. Ensuring linkages between domestic, regional and international networks is crucial;

.2 organising the transport service market through equipment and information sharing, freight-pooling and transnational cooperation among transport service providers;

.3 streamlining, simplifying, and digitalising trade and cargo-related processes to help reduce the cost of regional and international transport and trade, and enable trade continuity in a safer manner; and

.4 adopting and investing in supportive technology across ports, transit systems and customs administrations.

[20] UNCTAD (2021) *Small Island Developing States: Maritime transport in the era of a disruptive pandemic – empower States to fend against disruptions to maritime transportation systems, their lifeline to the World*. Policy Brief No. 86, May 2021. https://unctad.org/system/files/official-document/presspb2021d3_en.pdf (accessed 28 May 2024).

Build capacity to pursue a blue and climate-proof recovery

6.7 Enhancing preparedness and risk assessment, mitigation and adaptation capabilities with regard to pandemics and climate change-related impacts and other shocks is key for resilience and recovery.

6.8 Contracting Parties to the Barcelona Convention that are Island States, or island communities within the Mediterranean region, are frequently also custodians of large marine ocean spaces. Development in such States or communities is therefore inseparable from the sustainable use and management of marine resources. Promoting sustainable maritime transport patterns enables diversification towards economic activities that will have less of an impact on ecosystems and reduce the heavy reliance on fossil fuels, while sustaining livelihoods and stimulating job creation.[21]

6.9 This entails policies to:

.1 accelerate adequate support for sustainable and climate-proof transport infrastructure and the decarbonisation of shipping;

.2 build capacities to promote efficient and sustainable shipping services and strategies;

.3 enhance data collection capabilities, including in connection with reporting on the fuel oil consumption of ships registered under the flags of Contracting Parties to the Barcelona Convention that are island States, and leveraging automatic identification systems; and

.4 accelerate the uptake of clean technology and mitigate the risks associated with technology transitions.

6.10 A transition to resilient and sustainable maritime transport in Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, requires substantial investment. Overcoming the barriers undermining access to finance by Contracting Parties to the Barcelona Convention that that are island States, or island communities within the Mediterranean region, requires:

.1 strengthening partnerships to mobilise resources as well as building greater collaboration among Contracting Parties to the Barcelona Conventions and with the private sector, including public-private partnerships; and

.2 promoting innovative financing mechanisms such as blended finance, green finance, and climate bonds.

[21] UNCTAD (2020) Why a sustainable blue recovery is needed. 21 July 2020. https://unctad.org/news/why-sustainable-blue-recovery-needed (accessed 28 May 2024).

Specific characteristics of Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, needing consideration in the NAP

6.11 Currently most Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, rely heavily on fossil fuels for electricity generation and primary energy supply, as well as for transport. Therefore, any plan to transition should include the investments into what types of vessel could access the national ports with the alternative fuel and how that fuel would be stored. Alternatively, consideration could be given to generation/production of energy from local, renewable and sustainable sources such as wind, solar, and wave. A second consideration is the energy supply chain to support the energy transition of the maritime transport sector itself.

6.12 Whilst Contracting Parties to the Barcelona Convention have some influence on international maritime transport policy, maritime transport policy in those that are island States, or island communities within the Mediterranean region, is likely to be more focused on specific shipping sectors such as fishing, domestic passenger and, for international trades, cruise passenger ships linked to tourism. For domestic trades, the focus is likely to be on small scale shipping operations.

6.13 The age of the domestic fleet in Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, may be a significant factor. Ageing domestic fleets lead to higher operating and maintenance costs. From an infrastructure investment perspective, the poor connectivity with ageing domestic fleets is an important implication for Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region. The demand for alternative fuel / technology will be limited given the less frequency of main fleet vessels, unless new vessels are introduced on the routes. The ageing domestic fleet may offer an opportunity in form of new investments and easy feasibility of technological options suitable for small scale shipping. However, an inability to borrow at affordable rates to invest in new shipping and to insure those assets at reasonable prices is what keeps them trapped in this “old ship replaced by old ship” scenario. From a port perspective, given their lower cargo volumes, the potential of regional ports (e.g. a transshipment hub from which smaller vessels serve other Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region) could be explored, and this should be informed by regional awareness and located where there is, or potential for, infrastructure to support deep-sea serving vessels.

6.14 The effectiveness of public service within the ‘micro-governance’ of Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, matters. It is essential for building capacity to respond to immediate citizen needs as well as such wider challenges as climate change and economic growth. Contracting Parties to the Barcelona Convention that are island States, or island communities within the Mediterranean region, may face a generalised lack of governing capacity from limited human capital and financial resources. Inevitably, technical capabilities are weaker as a small number of people means a more limited range of talent, and because talented people cannot specialise but are called upon to fulfil many roles and undertake a wider variety of duties. This leads to systemic uncertainty and excessive routine dependence, inhibiting the realisation of rational legal management systems. Whilst resources may be stretched, given the cross-sectoral nature of addressing GHG emissions from ships, buy-in from all relevant groups is of great importance. As such, in developing the NAP, consideration could be given to the engagement and deployment of specialists from other Contracting Parties to the Barcelona Convention using finance for capacity building or through collaboration with institutions in other Contracting Parties to the Barcelona Convention.

7 Summary

7.1 The development and preparation of NAPs comes at a critical time for global, regional, and national efforts to reduce GHG emissions from ships. In this regard, several IMO Member States already produced their own NAPs, with others engaged in preliminary preparations to do so. Furthermore, the importance of green shipping policies and their effective implementation was amplified by the EU "Fit for 55" package of regulatory measures that are likely to have a significant impact on shipping and maritime transport services, including ports in the Mediterranean region.

7.2 To ensure political will and government buy-in and, importantly, the will to implement, one key element of any NAP where information needs to be explicit are the benefits that would be gleaned from supporting reduction of GHG emissions from ships under the control and or jurisdiction of the Contracting Party. As potentially part of the motivation for development of the NAP these benefits could include:

.1 the development of a NAP would provide an excellent opportunity to inform and enhance the quality of policy- making by the Contracting Party including developing its legal framework for enforcing rules for preventing pollution from ships against the shipowner/operator;

.2 implementation of rules leads to ships seeking to ensure greater protection from enforcement action/legal claims, those ships in turn raising their standards so providing additional protection to the marine environment that is important for tourism and fishing, etc.;

.3 enables the Contracting Party to speak with greater authority at IMO as well as at other international and regional fora on shipping issues and marine protection;

.4 encourages the recruitment and retention of younger people into the sector where they see opportunities for good career pathways and to work proactively to protect the marine environment, thus helping to build capacity;

.5 encourages ports and shipping services to provide additional income generating services to ships (e.g. cruise passenger ships) to enable them to comply with the international marine protection requirements;

.6 enacting green shipping policies and implementing legislation could enable Contracting Parties to promote and attract quality shipowners and operators who wish to associate with flag States that are supporting green ships and also know that their ships, when complying with the requirements, would not be at a disadvantage to those ships that are not required to comply as the flag State had not enacted the rules (i.e., maintaining the level playing field to prevent market distortion) to register ships on their flag; and

.7 ship charterers/insurers might consider the operation of ships to and from and within the Contracting Party's controlled waters as potentially a lower risk (and so lower charter rate/premiums) as enactment and keeping up to date of international shipping instruments indicates the port/coastal State jurisdiction has good governance of the maritime space leading to a lower risk of incidents and accidents/delays.

7.3 To realise these benefits, the following are examples of national actions that a Contracting Party may wish to consider:

.1 establish energy efficiency standards for their domestic fleet;

.2 in the short term, incentivise the use of drop-in fuels with lower life-cycle CO_2 emissions;

.3 promote shore power and bunkering infrastructure for new fuels in national ports;

.4 support adoption of zero emission vessels for distance maritime transport (e.g., passenger ferries or inland waterways); and

.5 introduce fiscal incentives for zero-emission vessel development and deployment and for ships retrofits.

7.4 For international/regional action, the establishment of green shipping corridors and/or green bunkering hub(s) for shipping could be used to promote national energy policies and focus resources onto both international and domestic shipping within the Mediterranean region. As part of their NAP, a Contracting Party to the Barcelona Convention could undertake preliminary pilot projects to examine the establishment of such initiatives.

7.5 The use of pilot-projects as an approach, if correctly designed and implemented, would permit a comprehensive assessment and evaluation of the appropriateness and viability of selected technologies/fuels/operational measures for shipping. Doing so would mitigate the risk of the barriers to successful implementation, any of which could potentially prevent effective implementation, including ensuring the necessary policies, funding, technical and human capacity are established.

7.6 For example, an imperative of the development of a NAP for shipping is to gain an understanding of the current energy strategy of the Contracting Party to the Barcelona Convention as part of its wider climate goals to determine the likelihood, timescale, and scale of transition to increase renewables/sustainable energy production that could be used to supply energy directly to shipping (i.e., OPS) and/or to support the production of e-fuels.

7.7 The policy framework for shipping at both an international and regional level is becoming more complex and presenting both risks and opportunities to the Contracting Parties to the Barcelona Convention. Importantly, this increasing complexity supports the case for and demonstrates the need for Contracting Parties to the Barcelona Convention to develop appropriate NAPs to assess and appraise those risks and opportunities in the context of their national circumstances. Without undertaking such action, the Contracting Parties to the Barcelona Convention are exposed to both greater risk and the potential loss of opportunities, both of which could have significant economic, social and environmental impacts.

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ANNEX - National or regional initiatives to the development and implementation of a NAP

Introduction

1 This section covers policy initiatives that are separate to what IMO or the EU has undertaken but are dedicated to supporting the decarbonisation of shipping. Specifically, it considers initiatives, all of which could be considered by Contracting Parties to the Barcelona Convention as part of supporting and achieving the goals of their NAPs, noting that, as with all initiatives included in the plan, they will require the appropriate national conditions and circumstances to be present, to be aligned with national priorities, and require the political will to be present to turn the plans into actions. These initiatives are:

.1 green shipping corridors;

.2 linking green corridors with green hydrogen;

.3 green energy bunkering hub(s) for shipping; and

.4 Maritime Just Transition Task Force[1], which comprises IMO, the International Labour Organization (ILO), the International Chamber of Shipping (ICS), the International Transport Workers' Federation (ITF) and the United Nations (UN) Global Compact, and which has a focus on seafarer training to prepare for the energy transition.

Green shipping corridors

2 Green shipping corridors are voluntary, international partnerships across the shipping value chain, involving ports, shipping lines, cargo owners and government departments at different levels. They offer a way to catalyse the technical, commercial, and regulatory feasibility of zero emission shipping.[2]

3 Green ports and shipping help to reduce GHG emissions, air and noise pollution, especially in the neighbourhoods in the vicinity of the port, while the support of a city for green shipping helps to develop supply and demand for scalable zero emission fuels, and improve job quality and conditions for workers.[3]

The Clydebank Declaration

4 Shipping is primarily an international transport sector and, as such, requires international regulation and collaboration between trading partners. Recognising that the former may take time to be agreed and implemented, and to stimulate and support early movers wishing to decarbonise their ships, ports and/or supply chains, the Clydebank Declaration was launched at the 2021 United Nations Climate Change Conference (UNFCCC COP 26) in November 2021.

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[1] https://unglobalcompact.org/take-action/think-labs/just-transition/about (accessed 28 May 2024).
[2] *Navigating collaboration: Good governance for green shipping corridors*, C40 Cities Climate Leadership Group and Arup, April 2024, https://www.c40knowledgehub.org/s/article/Navigating-collaboration-Good-governance-for-green-shipping-corridors?language=en_US (accessed 28 May 2024).
[3] *Why port cities should include ports and shipping in climate action plans*, C40 Cities Climate Leadership Group and C40 Knowledge Hub, April 2023, https://www.c40knowledgehub.org/s/article/Why-port-cities-should-include-ports-and-shipping-in-climate-action-plans?language=en_US (accessed 28 May 2024).

5 Initial signatories included Australia, Belgium, Canada, Chile, Costa Rica, Denmark, Fiji, Finland, France, Germany, Ireland, Japan, the Republic of the Marshall Islands, the Netherlands, New Zealand, Norway, Sweden, the UK and the US. Three Contracting Parties to the Barcelona Convention, namely Morocco, Italy and Spain, have since signed the pledge, taking the total number of signatories to 22, with more expected to join them in the near future.

6 The signatories committed to establish six green shipping corridors by 2025 – entirely decarbonised maritime routes (including land-side infrastructure and vessels) between two or more ports – to accelerate the development of zero-emission fuels, low-carbon enabling infrastructure and effective legislation and regulation. The plan is to then scale up the six pilot corridors by creating more routes, longer routes and/or growing the number of vessels sailing through the same routes.

7 Participation in the Clydebank Declaration is voluntary, meaning that the corridors will arise from partnerships only between those ports and operators that are willing to decarbonise specific, shared maritime routes[4]. Despite this, signatories pledge to collaborate to:

.1 establish partnerships with all stakeholders, including ports and operators along the value chain to accelerate the sector towards a net-zero future;

.2 address the technical and operational challenges of green corridors, including regulatory frameworks, incentives, intra-network collaboration and infrastructure;

.3 include green corridor provisions in the development or review of NAPs; and

.4 ensure that sustainability is at the forefront of plans when implementing green corridors[5].

Why include green shipping corridors in a NAP?

8 Green shipping corridors have therefore been defined as specific trade routes where the feasibility of zero or near-zero emission shipping is catalysed by public and private action, provide the opportunity to accelerate the transition of shipping to zero or near-zero-emission fuels. The establishment of green shipping corridors requires participants from the full maritime value chain that are active on the trade route – such as fuel producers, shipowners and operators, cargo owners, ports, and regulatory authorities – to support the necessary investments in, and deployment of, zero or near-zero-emission vessels, fuel production, and bunkering infrastructure.[6]

9 Green shipping corridors could be part of a NAP for the following reasons:

.1 contribute to national emissions reduction targets and a lowering of global emissions;

.2 send a strong signal to global trading partners, with which the country is developing pathways, to decarbonise key value chains;

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[4] *The Clydebank Declaration: Green corridors kickstarting the adoption of long-term solutions*. Watson, Farley & Williams, 28 March 2022. https://www.wfw.com/articles/the-clydebank-declaration-green-corridors-kickstarting-the-adoption-of-long-term-solutions/ (accessed 28 May 2024).

[5] https://www.gov.uk/government/publications/cop-26-clydebank-declaration-for-green-shipping-corridors/cop-26-clydebank-declaration-for-green-shipping-corridors (accessed 28 May 2024).

[6] Global Maritime Forum/Getting-to-Zero Coalition (2024) *Supporting the establishment of the Australia-East Asia iron ore green corridor.* March 2024. https://cms.globalmaritimeforum.org/wp-content/uploads/2024/03/Position-paper_Supporting-the-establishment-of-the-Australia-East-Asia-iron-ore-green-corridor.pdf (accessed 28 May 2024).

.3 place the country at the forefront of zero or near-zero emission shipping and strengthen its profile as a maritime nation;

.4 provide an opportunity for industry and government to come together and expand on regional/international engagement strategies – in this case, green shipping corridors – to ensure effective collaboration along the energy-port-shipping nexus;

.5 position a country's dependency on shipping (for a zero GHG emission future) and leverage domestic shipping decarbonisation developments;

.6 provide an opportunity to build on and strengthen existing clean energy partnerships by developing green shipping corridors through regional cooperation; and

.7 support implementation of the Clydebank Declaration.

10 DNV has identified over 50 green shipping corridor initiatives.[7]

11 The Maritime Technologies Forum (MTF) concluded that green corridors enable zero-emission shipping to be launched and tested more effectively.[8] As green corridors limit the scope of operation to a finite number of ports, this allows the shipowner to initiate the recommended, resource-intensive, collaboration activities such as tabletop exercises.

12 MTF identified that multiple reports on green corridors are published focusing on feasibility for realisation, barriers, costs, and fuel supply. However, safety had not yet been considered in detail for green corridors. Therefore, MTF conducted a study to explore the regulatory framework and provide knowledge and recommendations to shipowners and port authorities planning to establish and operate green corridors.

[7] DNV (2024) *Key considerations for establishing a green shipping corridor*. https://www.dnv.com/expert-story/maritime-impact/key-considerations-for-establishing-a-green-shipping-corridor/ (accessed 28 May 2024).
[8] Maritime Technologies Forum (2024) *Safety considerations for establishing green corridors*. https://www.maritimetechnologiesforum.com/documents/2024-mtf-safety-considerations-for-establishing-green-shipping-corridors-report.pdf (accessed 28 May 2024).

13 Key recommendations from the MTF study are as follows:

.1 arrange early planning for safety assessments;

.2 conduct a risk assessment of port operations and bunkering;

.3 use available standards to ease future port acceptance;

.4 understand the risk to third parties in port;

.5 share information and emergency plans with intermediate states; and

.6 develop and implement a safety management system (SMS) for alternative fuels.

14 MTF prepared a "green corridor safety checklist" that is intended to be used by the shipowner and port authorities as a reference in the planning and assessment of the green corridor to ensure that important topics are identified and analysed. As the MTF study notes, the following issues need to be considered:

Vessel specific considerations

- Vessel is designed according to recognised safety standards set out in relevant IMO guidelines, class rules/guidelines, and local authority requirements, as applicable.
- Vessel is approved by flag State according to MSC.1/Circ. 1455 and the approval is submitted to IMO GISIS.
- Emergency plans are developed for emergencies when the ship is under way (ref. IMO res. A.949(23)).
- Shipowner has updated the SMS and relevant ship certificate to reflect the additional risk from alternative fuel.
- Gas dispersion analysis performed and ship-specific dispersion contours are available.
- Risk to third parties is quantified according to the chosen fuel, storage method, and design solutions.
- The ship's bunker plan and operational manual should be specific to the fuel.
- The ship's crew are trained to respond to and limit potential releases.

Port specific considerations

- Port bylaws and local regulations are updated to accommodate vessels with alternative fuels.
- Restrictions and limitations on bunkering (pressure, flow rate, hose diameter), weather or local traffic are identified.
- Emergency personnel on land are trained and familiar with the relevant fuel.
- Port bunker crew are trained for responding to and limiting potential releases.
- Bunker crew have available suitable personal protective equipment (PPE) for handling, responding, and escaping from a release of fuel.
- A designated escape plan is developed, and safe havens established if identified necessary.

Collaborative considerations

- Tabletop exercise conducted between shipowner and port to identify and understand potential hazards.
- Ship's crew and bunker personnel are invited to the tabletop exercise to familiarise themselves with the fuel and bunker systems and related hazards.
- Safety zones and control measures for bunkering are analysed and specified.
- Specific emergency plans are developed and agreed for when the vessel is in port.
- Simultaneous operations (SIMOPs) review conducted to analyse acceptable simultaneous port activities is performed.
- Safety critical task analysis (SCTA) and working environment health risk assessment (WEHRA) performed.

Technical considerations

- Sensors for leak detection installed in port (e.g., gas detection, thermal camera, or ultrasonic monitors).
- Bunker hoses, fixed piping, valves, and manifolds are certified for the relevant fuel.
- The bunker system is equipped with a safety breakaway dry-disconnect coupling.
- The ship shore link (SSL) and emergency shutdown (ESD) communication are compatible between port and ship.

Linking green corridors with green hydrogen

15 The International Renewable Energy Agency (IRENA) identified[9] that "green hydrogen" and derivatives give highly industrialised countries opportunities to transform their industries so as to achieve net-zero emissions, while also presenting prospects for industrial development in developing countries rich in renewable energy resources. Achieving these goals requires a combination of strong demand signals, effective public policies and proactive private sector involvement. Green hydrogen deployment will also lead to the creation of new value chains, some of them spanning the globe, involving a wide range of stakeholders. International collaboration is needed to share best practices and also the lessons learnt along the way.

16 Using as a case study green corridors between Australia and East Asia, the Getting to Zero Coalition of the Global Maritime Forum has identified the need to focus on both supply-side and demand-side policy mechanisms to both support the establishment of the green corridors but also drive green hydrogen production (Global Maritime Forum/Getting-to-Zero Coalition, 2024).

[9] IRENA (2024), *International co-operation to accelerate green hydrogen deployment*, International Renewable Energy Agency, Abu Dhabi. https://mc-cd8320d4-36a1-40ac-83cc-3389-cdn-endpoint.azureedge.net/-/media/Files/IRENA/Agency/Publication/2024/Apr/IRENA_CF_Green_hydrogen_deployment_2024.pdf?rev=ade363a1f5af497ba8ef88803b2f141b (accessed 2 June 2024)

Supply-side policy mechanisms

17 Scale up hydrogen production incentives:

.1 Production of hydrogen from renewable energy sources will be a key pathway for the production and supply of zero or near-zero GHG emission fuels (hydrogen carriers). As part of the NAP, the Contracting Party to the Barcelona Convention needs to consider policy mechanisms to incentivise the development of green hydrogen projects.

.2 Governments could also target projects with a wider range of end users to maximise their impact on market creation and investments. Governments could also consider a fiscal support for green hydrogen projects adopting a similar model to the Inflation Reduction Act (IRA) in the US.

18 Allocate fuel production subsidies for zero-emission shipping fuels:

.1 Regardless of bunkering location, fuel production subsidies could be earmarked for zero or near-zero GHG emission shipping fuels, to ensure that shipping is not outcompeted for supply by other sectors (including those with lower long-term market potential).

.2 If bunkering in a green corridor partner country, this can help a country kick-start its clean hydrogen production and export, with the green corridor and other first-mover projects bunkering in the green corridor partner acting as early off-taker for hydrogen production.

.3 If bunkering in the country, such an earmark could generate confidence in future demand and catalyse the investments needed to establish the new bunkering hub.

Demand-side policy mechanisms

19 To support the uptake of zero or near-zero GHG emission fuels in end-use sectors such as shipping, there is a need for demand-side incentives, as a complement to supply-side support. Green shipping corridors could be used to unlock the necessary investments and offtake opportunities. Demand side policy mechanisms to provide support to narrow the fuel cost-gap are considered as follows:

.1 A “Contracts for Difference” (CfD) scheme for zero or near-zero carbon ammonia is one way to implement demand side support and may provide cost efficiency for the Government without sacrificing the effective demand stimulus. Such a scheme could potentially be shipping-specific or multi-sector.

.2 In a scenario where the fuel may be bunkered outside of a Contracting Party to the Barcelona Convention, a mechanism for guaranteeing the origin of the fuel would be needed to ensure eligibility for demand-side subsidies (for example, establishing a Guarantee of Origin (GO) scheme would be an important verification mechanism).

.3 Another option to be explored is for government to set up an auction scheme for domestic producers and users of zero or near-zero GHG fuels to help aggregate demand.

.4 The 2023 IMO GHG Strategy is set to drive the uptake of zero or near-zero-emission fuels, especially in the 2030s. First mover support from national or regional Governments will be most relevant for kicking off the corridor. As such, demand-side support could involve a sunset mechanism, phasing out the support as IMO regulations kick in.

20 Global examples of announced demand-side schemes (Global Maritime Forum/Getting-to-Zero Coalition, 2024) include:

- New Zealand Equitable Transitions Strategy: Regional Hydrogen Transition Consumption Rebate[10].
- United States' Clean Hydrogen Hubs Strategy and Roadmap (which has allocated USD 1 billion for demand-side support)[11].
- Norway's Enova agency announced demand-side subsidies for the use of hydrogen and ammonia in shipping, which stipulates that vessels should spend a given proportion of their time in Norwegian waters to qualify for support, providing another point of reference for such a scheme.[12]

Green energy bunkering hub(s) for shipping

21 There are key advantages of establishing a bunkering hub to support green shipping (Global Maritime Forum/Getting-to-Zero Coalition, 2024). These include:

.1 generate economic value, spurring regional job creation and diversifying the economy (local/regional/national);

.2 provide local offtake opportunities for local/regional hydrogen projects while supporting the development of clean hydrogen export infrastructure in line with national policy and climate ambition, for example, to become a leading producer, exporter, and user of renewable hydrogen; and

.3 future-proof the port and maritime industry.

22 When a national Government is considering the establishment of a bunkering hub for green shipping, the following are recommended:

.1 Identify and maximise existing port infrastructure and invest in the necessary build-out to help create a bunkering hub at the identified port.

.2 Coordinate a bunkering hub programme, investing in safety, competency, regulatory, and technological developments by liaising with industry (including bunkering standards tailored to the port/local community).

.3 Invest in the training and upskilling of workers on the handling of the zero/near-zero fuels, including working with education and training establishments, to develop appropriate courses/syllabus.

.4 Accelerate permitting and approval processes for port infrastructure and the safe use of zero or near-zero fuels.

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[10] *Interim Hydrogen Roadmap*, August 2023, Government of New Zealand (2023) https://www.ena.org.nz/assets/9927-Interim-Hydrogen-Roadmap-AUG23.pdf (accessed 2 June 2024)

[11] *U.S. National Clean Hydrogen Strategy and Roadmap*, June 2023, US Department of Energy https://www.hydrogen.energy.gov/library/roadmaps-vision/clean-hydrogen-strategy-roadmap (webpage) https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/us-national-clean-hydrogen-strategy-roadmap.pdf?sfvrsn=c425b44f_5 (report) (accessed 2 June 2024)

[12] *Enova to Transform Norway's Maritime Sector with Hydrogen and Ammonia*, December 2023. https://energynews.biz/enova-to-transform-norways-maritime-sector-with-hydrogen-and-ammonia/ (accessed 2 June 2024)

Clean Energy Marine Hubs

23 The Clean Energy Marine Hubs (or CEM Hubs) is a cross-sectoral public-private platform intended to de-risk investments needed to produce low- and zero-emission fuels to be transported by the maritime sector. The aim of the initiative is to become the high-level platform that can catalyse and support the alignment of effort across the energy-maritime value chain.[13]

24 The CEM Hubs initiative is a first-of-its-kind partnership between the private sector and governments across the energy-maritime value chain – the ICS, the International Association of Ports & Harbors (IAPH) and the Clean Energy Ministerial (CEM), led by governments of Brazil, Canada, Norway, Panama, Uruguay and the United Arab Emirates (UAE). IRENA and the Global Centre for Maritime Decarbonisation (GCMD) support the initiative. In April 2024, Greece became the seventh nation to join the CEM Hubs initiative.

Maritime Just Transition Task Force

25 The Maritime Just Transition Task Force was established during the UNFCCC COP 26 in November 2021, by the ICS, the ITF, the UN Global Compact, the ILO and the IMO[14]. The Task Force has the aim of supporting a just and human-centred decarbonisation of the shipping industry. The Task Force is primarily funded by the Lloyd's Register Foundation, and its programme partner, the Singapore Maritime Foundation.

26 The lack of certainty on the future fuel options for shipping is having knock-on effects for seafarer training. A lack of clarity about viability and uptake of alternative fuel options, as well as uncertainty surrounding regulatory developments and financing, is making it difficult to plan effectively for the transition of the maritime workforce and to attract investment towards new skills programs, compatible with the future needs of the industry and decarbonised future.

27 Despite uncertainty, there are things that can be done today to kickstart seafarer training to support the transition. This includes investing in and enhancing maritime training establishments, including proper facilities and equipment, as well as fostering competent maritime trainers. Contracting Parties to the Barcelona Convention can also urgently revise or establish standards and training requirements for alternative fuel types through amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW) at the IMO.

10-point action plan for a Just Transition for Seafarers

28 A 10-point action plan to achieve a Just Transition for Seafarers was identified and, whilst this has a global focus, many of the points need to be implemented at a national level and so Contracting Parties to the Barcelona Convention developing their NAPs should consider what opportunities arise from this development according to their national circumstances and seek to ensure they are appropriately reflected so that those opportunities are not missed. The 10-points are as follows:

[13] https://www.cleanenergyministerial.org/initiatives-campaigns/hubs/ (accessed 28 May 2024).
[14] *Mapping a Maritime Just Transition for Seafarers – a position paper*, UN Global Compact/IMO/ICS/ITF, November 2022. 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 (accessed 28 May 2024).

1 Establish consensus to unlock training

To unlock the investments needed to equip the maritime workforce with essential skills necessary for a decarbonised shipping industry, urgently establish global consensus on an ambitious decarbonisation goal for shipping, which is more explicitly aligned with the 1.5ºC temperature goal of the Paris Agreement. This will provide the certainty needed to stimulate the uptake of alternative fuels and clean energy technologies for shipping.

Fundamental Just Transition Principles

2 Global labour standards

Ensure that Just Transition planning, as part of wider decarbonisation plans in the maritime industry, is aligned with globally established labour standards under the Maritime Labour Convention, as amended (MLC, 2006), underpinned by social dialogue and stakeholder engagement.

3 Gender and diversity

Champion 'Diversity, Equity and Inclusion' on board ships as a driver for better performance and risk management in the transition and beyond.

4 Health and safety

Ensure a health and safety-first approach to de-risk green transition of shipping with fit-for-purpose training and familiarisation onboard ships.

Recruitment and Attrition

5 Support seafarer career pathways

Support seafaring careers both at sea and ashore, by establishing mobility frameworks for seafarers to develop transferable skills over their time on board, preparing them for a career ashore, beyond seafaring.

6 Address attrition and recruitment

Take active steps to address seafarer attrition, which represents a significant challenge to attract and retain seafarers (including women) for green transition of shipping.

Skills and Training

7 Investing in skills

Ensure decarbonisation plans, including spending and investment, are aligned with the globally established ILO just transition guidelines, taking full account of the growing need of the maritime industry for skills to support its green transition.

8 Strengthening global training standards

Strengthen global training standards for seafarers, in the ongoing comprehensive review of the IMO STCW Convention and Code, identifying areas for revision. This includes replacing or updating obsolete competencies and knowledge, understanding and proficiency (KUP), in line with the digitalisation evolution and decarbonisation trajectory of shipping.

9 Delivering fair training

Deliver equitable training models for all seafarers to keep up with technological advances needed to support the decarbonisation of the industry as well as avoid a widening skills and training gap, which disadvantages seafarers, in particular from developing countries, SIDS and LDCs.

10 Monitoring skills

Develop national maritime skills councils, as advisory bodies, to complement the STCW training framework, including giving special attention to the additional skills that the maritime workforce will need to handle alternative fuels.

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