Australian Government
Australian Maritime Safety Authority

Report of the 2023-24 review of the National Plan for Maritime Environmental Emergencies

September 2024

FOREWORD

The National Plan for Maritime Environmental Emergencies was established in 1973 and provides a framework for managing the consequences of marine pollution incidents from shipping and the offshore energy sector. The current arrangements have primarily focused on response and recovery from oil spills. However, this basis for planning is being challenged as the international shipping industry seeks to reach net-zero greenhouse gas emissions from international shipping by 2050[1].

In response, the Infrastructure and Transport Senior Officials' Committee (ITSOC) at its meeting in October 2022 agreed to conduct a review of the National Plan to ensure it provides an effective emergency response framework for the future.

The review comes at a critical time. Over 99% of Australia's international trade is by sea[2], and there are growing tourism and blue economy needs for the use of marine areas, especially near coastlines. Changes to industries that utilise Australia's marine environment will present new hazards to the community. Decarbonisation of the shipping industry, the introduction of new fuels, the establishment of offshore energy industries and predictions of increasingly severe weather events, mean that current arrangements within the National Plan are insufficient to protect the community and the environment. This review of the National Plan presents an opportunity to address these emerging hazards.

The report of this Review covers known and predicted challenges, both current and future, that national maritime emergency arrangements need to consider. However, not all challenges are apparent now so new national arrangements will need to be flexible and adaptive.

This report benefits from the strong collaboration of industry, jurisdictions and a range of stakeholders from government agencies and private firms at a series of workshops, as well as other input across three governance committees. The review was a collaborative and cooperative experience that provided numerous insights on potential ways to work together to address the complex and imminent challenges of maritime emergencies in the near future.

National Plan Strategic Coordination Committee

[1] https://www.imo.org/en/MediaCentre/PressBriefings/pages/Revised-GHG-reduction-strategy-for-global-shipping-adopted-.aspx
[2] Operating environment – snapshot | Australian Maritime Safety Authority (amsa.gov.au)

EXECUTIVE SUMMARY

The National Plan is reviewed periodically to ensure it remains current and fit for purpose. Previous reviews have resulted in National Plan responsibilities being expanded to encompass cargoes of hazardous and noxious substances in 1998 and maritime casualty response in 2011.

The 2023-24 review used its terms of reference (refer Chapter 1.3) to examine the types and nature of maritime risks Australia may face over the next ten years, the operational effects of the National Plan, its scope, and the effectiveness of existing funding and governance arrangements for pollution response.

The National Plan review applied a co-design process with stakeholders, which involved four comprehensive stakeholder engagement workshops. This report captures the themes that emerged from the workshops and makes recommendations on how to progress new national arrangements. The review concluded that current arrangements are insufficient to manage hazards associated with alternative fuels emerging in the shipping industry and changes to the offshore energy sector.

The review concluded that the future state is expected to be more complex and the National Plan is now only partially fit for purpose. The national arrangements must continue to provide for traditional oil-based spill responses, while extending its capabilities to manage hazards associated with alternative fuels and emerging industries.

The arrangements must be consistent with community standards and expectations, be consistent with contemporary emergency management practice and adopt a community centred approach to preparedness, response and recovery. New arrangements need to include reporting and accountability mechanisms, incorporate whole of government emergency management policies and assess gaps in funding and legislation.

Lastly, the review concluded that the scope of new national arrangements will need to broaden to encompass the changing risk to human and marine environment health and safety.

Eleven recommendations have been made that, if adopted, will provide a framework to enable Australian governments and industry to effectively respond to current and future maritime hazards.

RECOMMENDATIONS

The review concluded that Australian communities will face an increasingly complex set of maritime transport and energy infrastructure hazards over the next ten years. These hazards may not only threaten the environment but may also affect community safety and critical infrastructure.

In this context, the review proposes the following recommendations:

Recommendation 1

That ITSOC agrees the Australian, state and Northern Territory governments will establish arrangements to manage the consequences of emergencies that may be caused by maritime transport and offshore energy industries. The arrangements should prepare to:

- Intervene to control the source of the emergency
- Mitigate community and environmental effects
- Enable the community and the environment to recover from any impacts.

Recommendation 2

That ITSOC reaffirms that Australian, state and Northern Territory governments are accountable within the bounds of their jurisdiction for preparing for, and managing the consequences of a maritime emergency, consistent with their respective constitutional responsibilities for the protection of life, property, and the environment.

Recommendation 3

That ITSOC agrees, consistent with current arrangements in the Australian Government Crisis Management Framework (AGCMF) and Australian Government Disaster Response Plan (COMDISPLAN):

- the Australian Government will provide a leadership role for maritime emergencies, including maintaining current National Plan responsibilities for coordinating support to the states and Northern Territory government and industry where requested
- responsibility for coordination of national support will rest with the relevant lead agency as defined within the AGCMF.

Recommendation 4

That ITSOC agrees jurisdictions will continue to progress integration of arrangements for maritime emergencies into Australian, state and Northern Territory governments crisis and disaster management arrangements.

Recommendation 5

That ITSOC agrees that identification of new stakeholders and the development of these new partnerships (including with First Nations people and industries) will be prioritised as part of new national arrangements.

Recommendation 6

That ITSOC agrees the Australian Government, with input from state and Northern territory governments, and relevant stakeholders, will develop a program of work to ensure international and domestic regulatory frameworks enable the effective response to, and recovery from, maritime emergencies. This will include new challenges:

- caused by a release of alternative fuel carried as bunker
- caused by the release of hazardous and noxious substances carried as cargo
- caused by new technology and emerging industries
- requiring intervention to stop, or slow the progression of, an incident for the purposes of public safety or to protect the marine environment
- required to support community and environmental recovery from maritime emergencies.

Recommendation 7

That ITSOC agrees:

- the National Plan Strategic Coordination Committee (NPSCC) will bring forward option(s) for a contemporary governance framework, including consideration of whether revised intergovernmental agreement(s) or other mechanisms are appropriate, to supersede the 2002 *Intergovernmental Agreement on the National Plan to combat pollution of the sea by oil and other noxious and hazardous substances* and the 2008 *Intergovernmental Agreement on the National Maritime Emergency Response Arrangement*, for the consideration of Ministers.
- the contemporary governance framework will seek to:
  - provide for national capability to respond to maritime emergency incidents that significantly impact the community including public safety, environment and supply chains
  - provide for coordination of mutual aid arrangements between governments and industry
  - provide for coordination of transboundary and/or multi-sector incidents
  - ensure stakeholders are accountable for delivery of relevant national capability
  - assure governments and stakeholders that effective arrangements are in place.

Recommendation 8

That ITSOC agrees the Australian, state and Northern Territory governments will each review their own management arrangements to ensure the necessary resource and regulatory frameworks are in place to respond to and recover from an expanded scope of maritime emergencies. The arrangements must cover both current and emerging risks and must include stakeholder and First Nations people engagement and report to the NPSCC on progress.

Recommendation 9

That ITSOC agrees the Australian Government, through the responsible portfolios, will maintain national capabilities to supplement jurisdictions and industry in the management of maritime incidents of national significance. These capabilities will be maintained and/or established where there are clear benefits for reasons of effectiveness and/or efficiency.

Recommendation 10

That ITSOC agrees the National Plan Strategic Coordination Committee, with input from the National Plan Strategic Industry Advisory Forum, will develop and implement a work program to design the capability required to manage current and emerging risks to public safety and the environment in a maritime emergency. The work program will also address capability gaps, including those:

- caused by a release of alternative fuel carried as bunker
- caused by the release of hazardous and noxious substances carried as cargo
- caused by new technology and emerging industries, including offshore firefighting
- caused by chemical release
- requiring intervention for public safety or to protect the marine environment
- required to support community and environmental recovery from maritime emergencies.

The work program will consider innovation and flexibility, to allow for continued improvement in responding to emerging and currently unknown risks.

Recommendation 11

That ITSOC agrees, on completion of the work program to design the capability required and address capability gaps, the National Plan Strategic Coordination Committee with input from the National Plan Strategic Industry Advisory Forum will develop a model for resourcing new national arrangements for consideration by governments.

ACRONYMS

AEP	Australian Energy Producers
AGCMF	Australian Government Crisis Management Framework
AGCRC	Australian Government Crisis and Recovery Committee
AGNPC	Australian Government National Plan Committee
AMOSC	Australia Maritime Oil Spill Centre
AMOS Plan	Australian Maritime Oil Spill Plan
AMSA	Australian Maritime Safety Authority
COMDISPLAN	Australian Government Disaster Response Plan
DISR	Department of Industry, Science and Resources
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications, and the Arts
EEZ	Exclusive Economic Zone
EST	environment, science and technology network
ETC	Emergency Towage Capacity
ETV	Emergency Towage Vessel
GBRMPA	Great Barrier Reef Marine Park Authority
GHG	Green House Gas
HNS	Hazardous and Noxious Substance
HAZMAT	Hazardous Material
IEA	International Energy Agency
IGA	Intergovernmental Agreement
IMO	International Maritime Organization
ITSOC	Infrastructure and Transport Senior Officials' Committee
MERCOM	Maritime Emergency Response Commander
MERNAP	Maritime Emissions Reduction National Action Plan
NATSAR	National Search and Rescue Council
NEMA	National Emergency Management Agency
NCM	National Coordination Mechanism
NMERA	National Maritime Emergency Response Arrangement

NOPSEMA Authority	National Offshore Petroleum Safety and Environmental Management
NP	National Plan for Maritime Environmental Emergencies
NPSC	National Plan Steering Committee
NPSCC	National Plan Strategic Coordination Committee
NPSIAF	National Plan Strategic Industry Advisory Forum
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation 1990
OTEC	ocean thermal energy conversion
TOR	Terms of Reference
UK	United Kingdom
USA	United States of America
UN	United Nations

GLOSSARY

Advisory often issued by the Government to make an official announcement or warning; or provides recommendations but does not have the power to enforce them.

Alternative fuel in this document refers to the fuels that are predicted to replace fossil fuels, currently considered to be methanol, hydrogen and ammonia. See also transitional fuel.

AMOS Plan is managed by the Australian Marine Oil Spill Centre (AMOSC) and outlines the cooperative arrangements for response to oil spills by Australian oil and associated industries.

Bunker means a heavy fuel oil, intermediate fuel oil, blended distillate or diesel used as a vessel's fuel.

Capability is what an entity needs to be able to do and includes skills and resources.

Capacity refers to the amount, size or duration that capability is required for.

Casualty is an injured person, or a person killed or injured as the result of the incident or emergency.

Coastal Waters in relation to a State or the Northern Territory, means the territorial sea to an outer limit of three nautical miles from Australia's baselines and any waters that are on the landward side of the baselines, including waters not within the limits of the State or Northern Territory.

Chemical Terminal means a chemical refinery and/or chemical storage/distribution facilities with access to a maritime facility, but not including the maritime facility.

Command is the leadership and internal direction of the members and resources of an entity by someone who has the authority and skills to make decisions for that entity. Command operates vertically within an entity.

Commonwealth Waters means all waters in the territorial sea and exclusive economic zone seaward of three nautical miles from Australia's baselines.

Commonwealth Territories (of Australia) are administered, through DITRDCA and include the Indian Ocean Territories of Christmas Island and the Cocos (Keeling) Islands, Norfolk Island, the Jervis Bay Territory, the Ashmore and Cartier Islands, and the Coral Sea Islands.

Community means a social group with a commonality of association and generally defined by location, shared experience or function, and with a number of things in common such as culture, heritage, language, ethnicity, pastimes, occupation or workplace.

Control means the overall direction of emergency management activities during an emergency situation. Authority for control is established in legislation or administratively and carries with it responsibility for tasking organizations in accordance with the needs of the situation.

Control Agency means the agency or company assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency. The legislative or administrative mandate should be specified in the relevant contingency plan. The Control Agency will have responsibility for appointing the Incident Controller. This is the equivalent of Responsible Agency or Control Authority under AIIMS.

Coordination is the bringing together of entities to support an emergency management response in an orderly manner and for a common purpose.

Emergency means an event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response. The term emergency and disaster are used interchangeably within the Australian Emergency Management Arrangements.

Environment means the complex of physical, chemical and biological agents and factors which may impact on a person or a community, and may also include social, physical and built elements, which surround and interact with a community.

Hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Hazards may be natural, anthropogenic or socionatural in origin.

Hazardous and noxious substance means any substance which, if introduced into the marine environment, is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

Incident means an event, occurrence or set of circumstances that:

- has a definite spatial extent
- has a definite duration
- calls for human intervention
- has a set of concluding conditions that can be defined
- is or will be under the control of an **Incident Controller** appointed to make decisions to
- control and coordinate the approach, means and actions taken to resolve the incident.

Incidents of National Significance are high-impact events that require a coordinated and effective response by an appropriate combination of Federal, State, local, tribal, private-sector, and nongovernmental entities in order to save lives, minimise damage, and provide the basis for long- term community recovery. Incidents of National Significance risk outcomes with significant consequences including death, injury, psychological distress, financial loss, disruption to an entity or community, reputational damage or environmental damage.

Industry: unless already specified or defined in a particular context, means a business or commercial group or sector, or other socially valuable activity, such as fisheries, tourism, infrastructure, transport, etc. and their representative groups.

Internal waters means those waters that fall within the constitutional boundaries of a State or Northern Territory. The waters which are capable of falling within these limits are described in s.14 of the *Seas and Submerged Lands Act 1973* as ‘bays, gulfs, estuaries, rivers, creeks, inlets, ports or harbours which were, on 1 January 1901, within the limits of the States and remain within the limits of the States’.

Marine pollution refers to any occurrence or series of events with the same origin, including fire and explosion, which results or may result in discharge, release or emission of oil or a hazardous and noxious substance, which poses or may pose a threat to the marine environment, the coastline, animals or other resource, and which requires an emergency action or immediate response. Under the National Plan, marine pollution refers primarily to situations that may arise from shore-based oil and chemical transfer facilities, shipping operations and/or the operation of an offshore petroleum facility.

Marine Casualty means a collision, stranding or other incident of navigation, or other occurrence on board a vessel or external to it resulting in material damage or imminent threat of material damage to a vessel or cargo.

Maritime casualty means an event, or a sequence of events, that has resulted in any of the following which has occurred directly in connection with the operations of a ship: death or serious injury, loss of a person from a ship, loss, presumed loss or abandonment of a ship.

Maritime Environmental Emergency means potential and actual pollution of the sea or harm to the marine environment by oil or hazardous and noxious substance, originating from maritime casualties requiring salvage and intervention, emergency towage and requests for a place of refuge, oil pollution or hazardous and noxious substance pollution incidents from vessels, oil or hazardous and noxious substance pollution incidents from oil or chemical terminals (addressed by state and port plans), oil or hazardous and noxious substance pollution incidents from offshore petroleum activities, marine pollution from unknown sources, marine pollution from floating or sunken containers of hazardous materials, debris originating from a maritime casualty, or physical damage caused by vessels.

Maritime Facility means a wharf or mooring at which a vessel can be tied up during the process of loading or unloading a cargo [or passengers]. A maritime berth may be a sole user berth [such as a dedicated berth for an oil refinery] or may be a multi-user berth [such as a berth that handles general cargo, or one that handles bulk liquids such as petroleum for more than one user of the berth (sometimes known as a common-user berth)].

Offshore petroleum facility means a facility operating in accordance with the provisions of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, or any relevant State/ Northern Territory legislation.

Offshore Petroleum Incident Coordination Framework outlines the governance arrangements for the Offshore Petroleum Incident Coordination Committee (OPICC), including its purpose, membership and the responsibilities of member agencies. The OPICC is convened and chaired by the Department of Industry, Innovation and Science. The purpose of the OPICC is to effectively coordinate Australian Government efforts and resources and communicate to the public and affected stakeholders all matters relevant to a significant offshore petroleum incident in Commonwealth waters.

Oil means hydrocarbons in any liquid form including crude oil, fuel oil, sludge, oil refuse, refined products and condensates. Also including dissolved or dispersed hydrocarbons, whether obtained from plants or animals, mineral deposits, or by synthesis.

Oil terminal means a petroleum refinery and/or petroleum storage/distribution facilities with access to a maritime facility, but not including the maritime facility.

Petroleum includes oil and other substances extracted in the recovery of such substances, including LNG and LPG.

Place of refuge means a place where a ship in need of assistance can take action to enable it to stabilise its condition and reduce hazards to navigation, and to protect human life and the environment.

Port Authority depending on jurisdiction, may refer to a state agency, a state corporation or a private company.

Port is an area of water, or land and water (including any buildings installations or equipment situated in or on that land or water) intended for use either wholly or partly in connection with the movement, loading, unloading, maintenance or provisioning of vessels and includes:

- areas of water, between the land of the port and the open waters outside the port, intended for use by vessels to gain access to loading, unloading or other land-based facilities; and
- areas of open water intended for anchoring or otherwise holding vessels before they
- enter areas of water described in paragraph (a); and
- areas of open water between the areas of water described in paragraphs (a) and (b).

Pollution is the introduction of harmful materials into the environment. It is the contamination or undesirable modification of soil, food, water, clothing, or the atmosphere by a noxious or toxic substance. Any form of pollution can have adverse effects on health.

Protection of the Sea Levy is a statutory charge against ships, based on the 'potential polluter pays' principle, and is used to fund the National Plan for Maritime Environmental Emergencies. Funds are also used to meet clean-up costs which cannot be attributed to a known polluter.

Transitional fuel in this document means a maritime fuel that will be used to replace fossil fuels before the adoption of alternative fuels. Transitional fuels include a range of chemicals including LNG and LPG. See also 'alternative fuel'.

Twenty-foot equivalent units (TEU) is a general unit of cargo capacity, often used for container ships and container ports. The abbreviation stands for Twenty Foot Equivalent Unit. One TEU is a container of 20 feet long, 8'0" wide and usually 8'6" high. In metric terms, a TEU is 6.10 metres long, 2.44 metres wide and 2.59 metres high. A 40-foot container is equivalent to 2 TEU.

CHAPTER 1. INTRODUCTION

1.1 What is the National Plan

The 2020 National Plan for Maritime Environmental Emergencies[3] (the National Plan) mission is:

> *To maintain a national integrated government and industry organisational framework capable of effective response to pollution incidents in the marine environment and to manage associated funding, equipment and training programs to support National Plan activities.*

To achieve this, the National Plan sets out national arrangements, policies, and principles for the management of maritime environmental emergencies. The National Plan is managed through the following governance arrangements[4] to ensure accountability, coordination and integration with stakeholders:

- The National Plan Strategic Coordination Committee (NPSCC) sets the broad policy direction, oversees implementation of the National Plan and reviews its effectiveness. The NPSCC is comprised of senior Commonwealth, state and Northern Territory Government officials. It is accountable to governments through the Infrastructure and Transport Senior Officials' Committee (ITSOC).
- The National Plan Strategic Industry Advisory Forum (NPSIAF) is an independent industry-focused body that meets in conjunction with the NPSCC to advise on strategic issues and the future direction of the National Plan.
- The Australian Government National Plan Committee (AGNPC) coordinates the Australian Government arrangements under the National Plan. In a similar way, the states and Northern Territory coordinate their own government arrangements to meet their responsibilities under the National Plan.

The Australian Maritime Safety Authority (AMSA) manages the National Plan and leads governance arrangements, including regular reviews, to ensure the National Plan remains relevant and fit for purpose. The last major review was in 2012.

1.2 Background to the National Plan

On 3 March 1970, the Liberian-flagged oil tanker *Oceanic Grandeur*[5] grounded in the Torres Strait, spilling an estimated 1,100 tonnes of crude oil. At the time, the incident highlighted Australia's limited preparedness to deal with a major oil spill. Along with similar incidents worldwide, this provided the catalyst for the inception of the National Plan.

[3] National Plan for Maritime Environmental Emergencies 2020 (amsa.gov.au)
[4] National Plan governance and management (amsa.gov.au)
[5] Oceanic Grandeur, 3 March 1970 (amsa.gov.au)

Commonwealth and state ministers agreed to the division of responsibilities for the response to such incidents, and the *National Plan to Combat Pollution of the Sea by Oil* commenced on 1 October 1973.

In 1998, the document was expanded to include noxious and hazardous substances beyond oil and was renamed the *National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances.*

In 2012, the document was further expanded to include maritime casualty response and renamed the *National Plan for Maritime Environmental Emergencies*, which it continues to be called to this day.

Since its inception, the National Plan has facilitated Australia's response to over 30 large maritime incidents, and numerous smaller incidents. The 50-year anniversary of the National Plan in 2023 provided an opportunity to reflect on Australia's progress in marine pollution response.

1.3 2023-24 Review

In October 2022, ITSOC supported a third major review of the National Plan and agreed to the following Terms of Reference (ToR):

The Review will consider and make recommendations on:

1. *The types and nature of the maritime environmental risks that Australia may face over the next 10 years.*
2. *The operational effect(s) of the National Plan being sought by the parties to the National Plan.*
3. *The scope of the National Plan, including:*
    a. *whether the scope should be expanded to a broader range of complex maritime risks – for example, shipboard fires, mass casualty events, container losses, emerging marine based industry (for example, wind farms).*
    b. *re-defining (as per 3a) the maritime risks that are within scope of the National Plan.*
    c. *how the National Plan formally interfaces with Commonwealth and State/Northern Territory disaster management arrangements.*
    d. *the expectations of governments and the community and industry for the mitigation of risks of maritime incidents; and*
    e. *broad stakeholder identification and communication across the Australian government sector, industry, tourism and local communities, [First Nations people and Aboriginal Australian] communities and environmental representatives.*
4. *The effectiveness of existing funding and governance arrangements for pollution preparedness and response activities, noting the development of [the Australian] Government crisis management framework and other emergency and disaster response strategies.*

Appendix 1 provides a summary of how each term of reference has been addressed in the review.

The review has been led by AMSA, with oversight from the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA). The National Plan Steering Committee, chaired by DITRDCA, was established to provide project oversight of the National Plan Review. Government membership on the Steering Committee included representatives from DITRDCA, AMSA, Environment Protection Authority Tasmania, Marine Services South Australia, Maritime Safety Queensland, Transport for New South Wales, Transport Victoria and Transport Western Australia. Industry membership included representatives from the Australian Maritime Oil Spill Centre (AMOSC) and the Australian Energy Producers (AEP).

AMSA has prepared this report, with input from DITRDCA and the National Plan Steering Committee, NPSCC and NPSIAF. The Commonwealth has also consulted with the AGNPC, and jurisdictions have been responsible for consulting with their relevant government and industry bodies.

This report provides eleven recommendations.

CHAPTER 2. THE CHANGING ENVIRONMENT

The United Nations (UN) has set the goal for global greenhouse gas emissions to be reduced by 45 percent of 2010 levels by 2030 and reach net zero by 2050.

In response, the International Maritime Organization (IMO) developed the 2023 *IMO Strategy on Reduction of GHG Emissions from Ships* (the 2023 IMO GHG Strategy) to reduce emissions across international shipping by at least 40 percent (compared to 2008 levels) by 2030 and net-zero emissions by, or around 2050. One of the ways Australia will implement this strategy is through the *Maritime Emissions Reduction National Action Plan*[6] (MERNAP). Reducing emissions will require a shift from oil-based fuels to new fuels and new technologies over the next 25+ years. This is discussed further in Chapter 2.2.3.

New national arrangements will need to account for the future adoption of new fuels and technologies by industry.

2.1 Changing fuels

Significant change is required in maritime industries to meet the IMO's emission reduction targets: global shipping is likely to be powered by transitional and alternative fuels, further introduction of renewable energy infrastructure such as windfarms and new cargoes will include new fuels, chemicals and dangerous goods.

Figure 1 below displays the predicted use of maritime fuels by type to 2050.

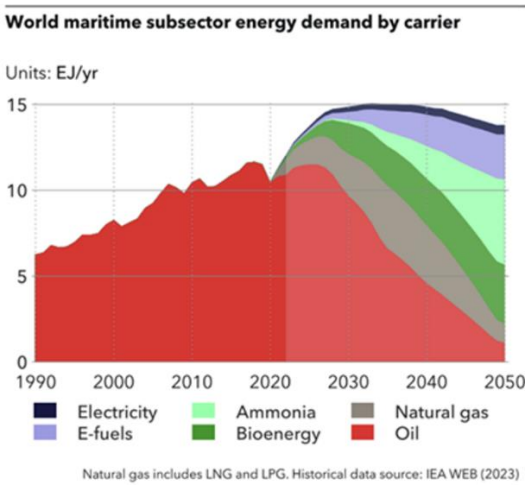

Figure 1: [7]Det Norske Veritas (DNV) publication *Energy Transition outlook 2023 – a global and regional forecast to 2050*

Compared to oil-based fuels, alternative fuels and energy sources have different characteristics and different risks. While oil fuels have well-established and widely

6 Charting Australia's Maritime Emissions Reductions | Department of Infrastructure, Transport, Regional Development, Communications and the Arts
7 Energy Transition Outlook – DNV

understood risk controls, the same cannot be said for new fuels. The current National Plan does not address the different risks that are posed by alternative fuels.

While oil presents a relatively low health risk to humans, oil discharges cause persistent and damaging impacts on the environment. In contrast, incidents involving alternative fuels such as ammonia, methanol and hydrogen are likely to present public safety risks.

Alternative fuels will require significantly different response capabilities and recovery strategies, compared to those used for oil fuels[8]. Some examples are as follows:

- Ammonia is an emerging alternative fuel and may be carried as cargo and vessel's fuel (bunkers). Ammonia is corrosive, weakens some metals via surface absorption and can absorb water, which forms a haze causing a public health threat and risks to infrastructure.
- The increasing carriage of lithium-ion batteries (as general cargo or incorporated into electric or hybrid vehicles) is predicted to rise significantly as many countries transition to battery storage for energy supply and adopt electric and hybrid vehicles to reduce transport emissions. Safe carriage of, and emergency response to, larger volumes of lithium-ion batteries will need to take account of experiences that have shown that lithium-ion battery fires are not common but can be difficult to extinguish once started. Many land-based firefighting options are not available at sea. In addition, lithium-ion battery fires emit toxic fumes and explosive gases, and water run off contains toxic chemicals which may be difficult to contain with traditional oil response capabilities.

Furthermore, the energy density of alternative fuels is often lower than oil, potentially requiring vessels to bunker more frequently. This is likely to provide opportunity to develop bunkering sites within Australia to allow for both multiple fuel types and more frequent refuelling.

The urgency required to deal with discharges of the alternative fuels will make conventional response for wildlife very difficult for all but small spills[9]. The flammability and toxicity of hydrogen, methanol and ammonia and their rapid dispersal will likely require evacuation of humans from the location, thus limiting wildlife protection options. The rapid action of ammonia in particular kills a wide range of species due to high alkalinity and even small spills, if repeated, cause cumulative impacts on the environment.[i10]

National arrangements will need to continue to manage emergencies resulting in the discharge of existing shipping fuels and cargoes and accidents involving offshore energy production but will also need to account for emerging alternative fuels, technologies and energy infrastructure.

8 https://www.itopf.org/fileadmin/uploads/itopf/data/Photos/Papers/Alternative_fuels_-_a_shift_in_the_response_paradigm_ITOPF_ALM.pdf
9 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.maritime.dot.gov/sites/marad.dot.gov/files/2021-05/ORNLAlt_Fuels_Spill_Study_Report_19Mar2021.pdf
10 https://ammoniaenergy.org/articles/quantifying-the-environmental-impacts-of-ammonia-at-sea/

2.2 Changing industry

2.2.1. Changing shipping industry

The shipping industry is undergoing substantial change with ships increasing in size, becoming more specialised, and the privatisation of some ports. The majority of Australia's commodities (99 percent of by volume) enter and leave Australia by sea, and 75 percent of the world's largest bulk carriers visit Australia each year[11].

The use of new shipping technologies is also underway, including more streamlined hulls, more efficient propeller design, increased digitisation and new technologies such as air lubrication to improve efficiency and prevent drag. In addition, more ships are scheduling port visits through 'just in time arrivals'[12] optimising the speed of ships and improving fuel economy. Advancement in shipping technologies is leading to the creation of mega ships like the *Irina*[13] which can hold 24,346 twenty-foot equivalent units (TEU), or cruise ships like the *Icon of the Seas* which can accommodate 7,600 passengers[14] and 2,350 crew (up from general carriage of 3,000 passengers).

Ship design will continue to change to accommodate and transport new fuels. For example, some ships are being retro-fitted so they can run on diesel or methanol. Similarly, alternative-fuel-ready (e.g. ammonia-ready) vessels are also being developed. Such vessels currently operate with conventional fuels and would need limited technical modifications in the future to be able to run on alternative fuels[15].

This highlights the need to maintain and develop national arrangements that can manage the consequences of diverse maritime emergencies.

2.2.2. Changing offshore oil and gas industry

Many of the existing offshore oil and gas production facilities in Australia will be decommissioned in the next 30 years, with some being decommissioned in the next decade. About $60 billion worth of offshore decommissioning activity is expected to occur in Australia over the next 30 to 50 years[16].

Although oil demand is expected to significantly decline in the long term, oil will continue to be used as fuel and carried as cargo (e.g. to produce plastic) as reflected in Figure 1 above. Oil and gas exploration, and development and production activities will continue in Australia while there is consumer demand for the product and reserves capable for commercial extraction. While the present estimates of known commercial reserves extend to 2050 and beyond, offshore exploration continues, offering potential for the discovery of new oil or gas reserves. Additionally, new technologies continue to improve the extraction capability of previously non-attainable hydrocarbons, which is likely to extend the oil and gas industry lifespan further.

11 Candidate for the IMO Council—Category B (amsa.gov.au)
12 WhatsNewNews (imo.org)
13 World's Largest Shipping Container Ships in 2023 | SCF
14 Icon of the Seas: the Icon of Vacations (royalcaribbean.com)
15 https://www.iea.org/energy-system/transport/international-shipping
16 Consultation hub | Roadmap to establish an Australian decommissioning industry for offshore oil and gas: issues paper - Consult hub

To ensure incident response capability is maintained, oil and gas need to be retained as a category in scope of national arrangements for maritime emergencies as petroleum will continue to be extracted by the offshore petroleum industry and carried by ships into the medium term at least.

2.2.3. Emerging industries

New industries are emerging to produce and utilise alternative fuels such as hydrogen, ammonia and methanol. In addition, it is expected that other new maritime industries will emerge over the next fifteen years including offshore windfarms, wave and tidal energy facilities, floating solar and ocean thermal energy conversion (OTEC).

Although many of these technologies will develop their own management plans and environmental approvals to mitigate risks as they become operational, new national arrangements may need to account for how these industries interact with other maritime industry threats, particularly as they intersect with shipping.

This highlights the need for national arrangements that can respond to national maritime emergencies that may arise as a result of emerging industries.

2.3 Changing climate

The Australian Government's Australian Climate Service[17] reports that climate change is increasing the frequency and severity of many natural disaster events. Future risks affecting the National Plan include more extreme storms and more intense tropical cyclones that bring greater rainfall and higher storm surges due to rising sea levels. Cyclones are also predicted to occur further south along both the east and west coasts. The concurrence of extreme events is likely to increase, which would stretch emergency response capabilities and potentially lead to significant disruption at seaports. Given their location, seaports can be vulnerable to flooding, waves and high winds, potentially leaving ships unable to dock and affecting supply chains. As maritime trade volumes are expected to triple by 2050[18], climate change could cause significant problems in the maritime and supply chain environment.

The changing climate further highlights the need to retain a national arrangement that can respond to maritime emergencies.

2.4 Concurrent reviews

Several concurrent reviews have occurred over recent years, with some still occurring on matters related to search and rescue, maritime casualties and pollution response which are relevant to the National Plan review. The new arrangements should consider the findings of these reviews.

2.4.1 Environmental Scan – Search and Rescue in Australia

In October 2023, the National Search and Rescue Council[19] (NATSAR) endorsed a report '*Environmental Scan – Search and Rescue in Australia'*. The document predicted

17 https://acs-public-1-climateservice.hub.arcgis.com/pages/188f494773234b0d885605566bb83e98
18 Freight-2050-Final-Multi-Colour.pdf (infrastructure.org.au); Ocean shipping and shipbuilding - OECD
19 National Search and Rescue Council (amsa.gov.au)

widespread challenges across all search and rescue domains, driven by climate change and digital transformation. The document identified significant challenges relevant to the National Plan including increased risks due to changes in maritime industries, more weather-related incidents, rapid changes in communications technologies and high expectations by community.

Incidents associated with the National Plan can overlap with search and rescue.

2.4.2 Emergency Towage Vessels review

Part 3.5 of the current National Plan addresses emergency towage. As part of the Emergency Towage Vessel (ETV) review, in March 2023, AMSA held a workshop on Maritime Casualty Response – Emergency Towing Capability (ETC) to understand stakeholders' perspectives on maritime casualty risks and current emergency towage capacity in Australia. The consensus from the workshop was that Australia's maritime casualty arrangements needed reviewing and a capability statement should be developed.

Participants noted that vessels are getting larger, and port tugs are becoming more specialised and increasingly unable to travel outside ports. Therefore, more capable ETVs are needed. Participants agreed arrangements for the release of towage assets to respond to casualty situations needed clarification and in general, Australia will require overseas assistance for larger vessel salvage events. Capability gaps are discussed in more detail at Chapter 6.2.

The workshop also highlighted limitations of the National Plan in relation to public safety and marine casualty. For example:

- the National Plan applies only to environmental emergencies.
- the Protection of the Sea (Powers of Intervention) Act 1981 can only be applied where there is a risk of pollution of the maritime environment by oil or other hazardous and noxious substances (which may not necessarily apply to a release of gaseous hydrogen), and it cannot be applied when there is a risk to public safety and/or maritime casualty (see also Chapter 5.1 for more information on the risks associated with lack of legislative powers).

2.4.3 Capability review

The Australian Disaster Preparedness Framework20 defines capability as the collective ability and power to deliver and sustain an effect within a specific context and timeframe. In a National Plan context, capability includes trained personnel and equipment, including stockpiles and doctrine.

In 2022, the NPSCC, through AMSA, commissioned a *Statement of Capability* to review response capabilities of jurisdictions (including the Commonwealth and industry) under the National Plan, specifically considering 1. oil spills; 2. maritime casualty; and 3. hazardous and noxious substances.

[20] Australian Disaster Preparedness Framework (homeaffairs.gov.au)

The capability review concluded some jurisdictions have limited and sometimes no ability (i.e. equipment and/or personnel) for offshore containment and recovery response without activating the National Plan.

The capability review also identified the lack of response capability for Level 3 HNS (Hazardous and Noxious Substances) cargo incidents as a significant current gap. Chapter 4.1 provides further detail on incident levels.

Capability is discussed in more detail at Chapter 6.

2.4.4 Review of offshore petroleum industry preparedness and response arrangements

The Department of Industry, Science and Resources (DISR) and the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) are conducting a review of Australia's Offshore Petroleum Oil Spill Preparedness and Response Framework, which will identify the options for improving the resilience, effectiveness and efficiency of the current arrangements.

The review is considering how the framework can be simplified and strengthened, with the aim of enhancing resilience to external pressures and to protect against variations and performance between different title holders and safeguard against changing industry risks and the regulatory landscape.

The first phase of the review was completed in December 2023. It included a comparison of global frameworks, considered other similar frameworks and consulted with key stakeholders in the UK, Norway, Canada and the USA to examine best practices and how they could be incorporated into Australia.

Outcomes were considered and discussed with stakeholders from government, the petroleum industry and oil spill responders, and a cost-benefit analysis was undertaken to assess the introduction of new elements into the Australian offshore petroleum jurisdiction. DISR and NOPSEMA are currently reviewing the findings and recommendations of the first phase to identify elements of the framework to be further considered for implementation in the next two phases of the review.

New arrangements under the National Plan should take into consideration, and align with, the outcomes of this review. Refer also to Section 4.3 for integration with existing government arrangements.

CHAPTER 3. SCOPE OF ACTIVITIES

3.1 Current scope

The National Plan applies to potential and actual pollution of the sea or harm to the marine environment by oil or hazardous and noxious substances, originating from:

- maritime casualties requiring salvage and intervention, emergency towage and requests for a place of refuge
- oil pollution or hazardous and noxious substance pollution incidents from vessels
- oil or hazardous and noxious substance pollution incidents from oil or chemical terminals (addressed by state and port plans)
- oil or hazardous and noxious substance pollution incidents from offshore petroleum activities
- marine pollution from unknown sources
- marine pollution from floating or sunken containers of hazardous materials
- debris originating from a maritime casualty, or
- physical damage caused by vessels.

In practice, the National Plan has been used primarily in response to maritime casualty incidents and oil spills, which have been the main maritime environmental risk for many decades. Over recent decades, activations of the National Plan to respond to oil spills have diminished, partly due to prevention activities such as enhanced port state control activities and improved coastal pilotage (including the Great Barrier Reef and Torres Strait vessel traffic service[21]). The National Plan training events have also increased knowledge around emergency prevention to help minimise incidents.

As the maritime industry adjusts to the IMO targets and the Australian Government's Net Zero Plan[22], mitigation, preparation and response to hydrocarbon (oil) spill risks will need to continue for several decades. In addition, as the maritime operating environment changes new hazards will arise.

The 2020 National Plan *does not apply to threats to the marine environment resulting from pest species, climate change, marine debris and rubbish from sources other than a maritime casualty, or other natural or man-made occurrences. These are managed under other regimes and agreements.* (Refer Part 1.3 of the National Plan.)

The National Plan is a domestic arrangement and applies within Australia's exclusive economic zone (EEZ), offshore islands and territories and the high seas where the incident has the potential to impact Australian interests. The National Plan also applies to internal and coastal waters. Under the Australian Constitution, states and the Northern Territory governments have responsibility for internal and coastal waters (generally to three nautical

21 Great Barrier Reef and Torres Strait vessel traffic service (amsa.gov.au)
22 Net Zero - DCCEEW

miles) and the Commonwealth government generally has responsibility between three and 200 nautical miles.

Australia, in acceding to the Antarctic Treaty, has obligations for environmental protection in the two Australian-claimed territories.

The National Plan defines an emergency as:

… an event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response. The term emergency and disaster are used interchangeably within the Australian Emergency Management Arrangements

Part 3.1 of the National Plan states that: *Prevention within the scope of the National Plan refers to those actions taken to prevent or minimise the release of marine pollution from a maritime casualty. In the context of the National Plan, prevention is limited to a maritime casualty.* It is intended that this be retained.

3.2 International assistance

Arrangements for international maritime environmental emergencies are managed and funded separately to the National Plan, although capabilities developed under the National Plan may be used to support an international incident.

The current National Plan (refer Part 2.6) outlines the framework for international support, from national governments as well as support from the Global Response Network, of which AMOSC is a member.

The National Plan is also supported by the *Guidance for Coordination of International Incidents Notification Arrangements*[23] which outlines the arrangements that apply where a maritime environmental emergency impacts on the interests of another country and includes coordination of international assistance under the Pacific Oil Spill Contingency Plan (PACPLAN). International assistance is coordinated by the Department of Foreign Affairs and Trade, or as defined under a specific agreement between an international jurisdiction and the Australian Government.

Arrangements for international assistance are well defined and enable activation of domestic resources. Arrangements for international assistance are also outside the scope of the National Plan however, National Plan resources may be utilised. No changes are recommended to these current arrangements.

3.3 Retention of oil response capabilities

The International Energy Agency (IEA) predicts that by 2050 approximately 16 percent of global maritime fuel use will still be oil[24]. Oil is predicted to continue to be produced by the offshore petroleum industry, carried as cargo by the maritime sector and remain in use for the production of plastic, asphalt and other products and for use as lubricant. Therefore, new

23 np-gui-007-coordination-of-international-incidents-notification-arrangements-guidance.pdf (amsa.gov.au)
24 DNV: Maritime fuel mix by 2050 projected to consists of 84% alternative bunker fuels | Manifold Times

national arrangements must recognise the continuing use and transport of oil and provide for continued oil pollution response capability.

3.4 Public safety and recovery

Part 5 of the National Plan identifies the health and safety of all people (responders and the community) in all activities is the highest priority. Part 6 of the National Plan states that:

… recovery refers to three distinct processes:

- recovery of costs for organisations involved in response arrangements or communities that suffer loss resulting from pollution
- rehabilitation of the environment
- return of an affected socio-economic community to its pre-incident level of functioning.

With the changing nature of shipping, there is increased potential of a maritime transport or infrastructure incident significantly impacting the public. This risk is heightened with increasingly high residential density around ports. For example, a major leak, explosion, or fire involving ammonia, hydrogen or methanol will produce multiple hazards, particularly toxic gases. In a port area, such incidents could cause mass casualties and infrastructure damage.

A fire or explosion resulting from an alternative maritime fuel is likely to require a lengthy recovery phase involving coordinated services from government agencies, as well as long-term environmental monitoring and social and economic support that are not part of the current National Plan.

3.5 Expanded scope

The scope of the National Plan includes oil (carried as both fuel and cargo) and hazardous and noxious substances carried as cargo. However, it is potentially limited in its ability to respond to other incidents, such as those involving alternative fuels. New national arrangements need to account for the increased development around ports and the impact this could have on the severity of incidents, as well as meet public expectations for response to emergencies.

Any proposed new national arrangements should retain a focus on the health and safety of people and communities but be expanded to account for hazards from new shipping fuels and new cargo types.

It will also require preparedness for hazardous material (HAZMAT) response to be retained and improved, both aboard marine vessels and in the adjacent environment.

New national arrangements will require the flexibility to address new maritime industries (as mentioned at Chapter 2.2.3) including offshore infrastructure, wave, and tidal energy facilities, floating solar, ocean thermal energy conversion (OTEC) and carbon capture technologies. Many of these emerging industries are in the early planning stages, and the associated hazards are yet to be fully understood. In addition, the arrangements required to manage hazards related to their operation are yet to be determined. Arrangements will need to consider international best practice if there are no approved guidelines or frameworks. They should also incorporate management plans and environmental approvals that are developed with the new industries as part of their risk mitigations. Offshore wind projects will

require environmental approvals under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and management plans approved by the regulator.

With these technologies coming online in the near future, the National Plan must provide flexibility in its scope to embrace known and emerging fuels and technologies.

In addition to activities mentioned at section 1.3 of the National Plan, new national arrangements will not include matters such as cyber security, aquaculture or warships. These are managed under other regimes and agreements.

Recommendation 1

That ITSOC agrees the Australian, state and Northern Territory governments will establish arrangements to manage the consequences of emergencies that may be caused by maritime transport and offshore energy industries. The arrangements should prepare to:

- *Intervene to control the source of the emergency*
- *Mitigate community and environmental effects*
- *Enable the community and the environment to recover from any impacts.*

CHAPTER 4. A NATIONAL APPROACH

4.1 Current approach

The aim of National Plan governance is to ensure a coordinated, integrated and accountable system is in place to manage maritime environmental emergencies (refer National Plan, Part 2.1). The National Plan outlines how this is achieved through advisory and reporting frameworks, stakeholder engagement, technical input to support decision making and links to other arrangements across the Commonwealth, states, and the Northern Territory.

The National Plan's supporting documents[25] provide additional policies, guidance and advisory information. For example, there are policies on how to implement strategic management of the National Plan; guidance documents for the application of specific response arrangements such as the Activation of the Fixed Wing Aerial Dispersant Capability Guidance; and scientific, technical, and operational advisories that provide advice on specific technical issues, such as Volunteer Management.

Part 5.2 of the National Plan identifies three levels of incidents:

- Level 1 Incidents are generally able to be resolved through the application of local or initial resources only (e.g., first-strike capacity).
- Level 2 Incidents are more complex in size, duration, resource management and risk, and may require deployment of jurisdiction resources beyond the initial response.
- Level 3 Incidents are generally characterised by a degree of complexity that requires the Incident Controller to delegate all incident management functions to focus on strategic leadership and response coordination and may be supported by national and international resources.

In addition to how the National Plan identifies levels 1 to 3 incidents, consideration is also given to an incident's geographical location. As noted at Chapter 3.1, under the Australian Constitution, states and Northern Territory governments are responsible for internal and coastal waters (generally to three nautical miles) and the Commonwealth government generally has responsibility between three and 200 nautical miles offshore. All jurisdictions (i.e. Australian, state and the Northern Territory governments) have responsibility to meet their obligations under the National Plan through legislation, governance frameworks and capabilities, within the bounds of that jurisdiction.

Under the National Plan, AMSA has the responsibility to provide assistance to the states and the Northern Territory for shipping incidents. This is most likely to occur with Level 2 and Level 3 incidents. In addition, the Department of Industry, Science and Resources may request AMSA to support an offshore petroleum industry response consistent with Australian Government crisis coordination arrangements.

The States and the Northern Territory routinely prepare and manage their own jurisdictional emergency plans, which cover all hazards and environments and provide appropriate authority for response. For example, the 2023 *Queensland State Disaster Management Plan*[26] outlines how Queensland will prevent, prepare, respond to, and recover from

25 Index of supporting documents for the National Plan (amsa.gov.au)

26 Interim-2023-QSDMP-V1.2.pdf (disaster.qld.gov.au)

disasters. The Queensland Plan notes: *Queensland's disaster management arrangements are based on partnerships between the community and groups at the local, district, state, and Commonwealth levels to deliver coordinated, cooperative, and integrated outcomes*.

Part 3.3 of the National Plan outlines the role of the Maritime Emergency Response Commander (MERCOM):

The MERCOM is responsible for the management of emergency intervention issues in response to maritime casualty incidents where there is an actual or potential risk of significant pollution. The MERCOM is appointed by AMSA and is supported by statutory powers under the Protection of the Sea (Powers of Intervention) Act 1981 (Powers of Intervention Act). The MERCOM will consider the reasonable views and stated positions of the relevant states, Northern Territory and stakeholders. These entities represent community views about economic, environmental, community and social interests that could be impacted by the MERCOM's decisions. Decisions made by the MERCOM will be expeditiously communicated to all relevant stakeholder groups and fully documented.

Directions to parties through the Powers of Intervention Act are restricted to the risk of pollution and may not necessarily address public safety or maritime safety posed by emerging fuel types. There are questions whether the Act provides an adequate framework to manage releases of alternative fuels, particular in gaseous form.

4.2 Jurisdictional responsibility

Current crisis and disaster management arrangements for maritime incidents are complex, vary across jurisdictions and may change depending on jurisdictional priorities and decisions. For example:

- In some but not all jurisdictions, transport agencies lead on maritime shipping emergencies.
- There is variation in how ports have been privatised or corporatised across jurisdictions.
- Response to oil pollution incidents from offshore petroleum facilities is industry led. In some instances, response to offshore petroleum incidents involving vessels undertaking offshore petroleum activities is industry-led, whilst in other instances the response is government-led.

With the changing environment and the proposed expanded scope of new national arrangements (refer Chapter 3.5 and Recommendation 2), response arrangements are expected to become more complex. It is impractical for new national arrangements to specify the lead agency within each jurisdiction. Similarly, it is impractical for new national arrangements to specify when states or the Northern Territory government have responsibility, and when privatised ports have responsibility.

New national arrangements, and any supporting documents, must build on the current premise of the National Plan, that the Commonwealth, states, and the Northern Territory have responsibility for ensuring preparation and response to maritime environmental emergencies within their jurisdiction. Refer to Part 2.1 of the current National Plan. It is important that new arrangements clearly define both maritime boundaries and incident responsibilities so that jurisdictions can ensure they have the capability to respond to incidents, and when those incidents exceed their capability, they can formally request the Commonwealth's help.

The existing arrangements have inbuilt flexibility through legislative means. For example, Commonwealth legislation allows states/Northern Territory to refer their regulatory powers to

the Commonwealth for offshore petroleum. It is recognised that there is a need and ability for innovation, preparedness and response improvements to address emerging and future risks.

It is also acknowledged that the Great Barrier Reef Marine Park (GBRMP) presents an exception because of its unique status and notwithstanding constitutional responsibilities, new national arrangements will need to specifically consider the GBRMP and its overlap with Commonwealth and state arrangements.

Recommendation 2

That ITSOC reaffirms that Australian, state and Northern Territory governments are accountable within the bounds of their jurisdiction for preparing for and managing the consequences of a maritime emergency, consistent with their respective constitutional responsibilities for the protection of life, property, and the environment.

4.3 Integration with existing government arrangements

The Australian Government Crisis Management Framework[27] (AGCMF) is Australia's principal document for crisis management, and outlines the Australian Government's approach to preparing for, responding to, and recovering from crises. The AGCMF designates the lead agency or Minister responsible for incidents.

The AGCMF identifies AMSA as the lead agency for the National Plan (refer AGCMF Annex B).

Annex C of the AGCMF outlines the crisis management and response arrangements. Annexes C9 and C10 are relevant to the National Plan:

- Annex C9 deals with incidents involving offshore petroleum facilities in Commonwealth waters. Incidents may include any non-security related event that occurs at, or has a direct link to, an offshore petroleum facility in Commonwealth waters (e.g. fire, oil spill) and requires a whole-of-government response.
  - The lead minister for response and recovery is the Minister responsible for Resources.
  - The lead agency for response and recovery is the Department of Industry, Science and Resources.
  - Annex C9 identifies and interfaces with several national plans and arrangements including the National Plan.
- Annex C10 deals with transport incidents (maritime, aviation, road, and rail) within Australia, the Australian Search and Rescue Region, or the Australian Exclusive Economic Zone, and maritime and aviation transport incidents, other than terrorism, that require a whole-of-government response. This may include crashes of, and search and rescue efforts for, commercial aircraft and vessels (within Australia or the Australian Search and Rescue Region) or maritime environmental emergencies, including maritime

[27] Australian Government Crisis Management Framework (pmc.gov.au)

casualties, oil and/or hazardous and noxious substance spills (within the Australian Exclusive Economic Zone) stemming from these incidents.

- The lead minister for response and recovery is the Minister responsible for Transport.
- The lead agency for response is DITRDCA.
- The lead Agencies for recovery are the National Emergency Management Agency (NEMA) and DITRDCA.

The 2020 Australian Government Disaster Response Plan[28] (COMDISPLAN) allows states and territories to request non-financial assistance from the Australian Government during an emergency or disaster within Australia or its offshore territories. NEMA coordinates requests for assistance and the Minister for Emergency Management approves requests under COMDISPLAN.

Several key mechanisms facilitate whole-of-government coordination in response to, or recovery from crisis:

- The Australian Government Crisis and Recovery Committee (AGCRC) is the primary mechanism that brings together relevant Australian Government Agency representatives.
- The National Coordination Mechanism[29] (NCM) brings together relevant Australian Government, state and territory governments and private sector representatives to ensure effective response and recovery coordination, communication, and collaboration during domestic crises."[30]
- The AGCMF, COMDISPLAN, AGCRC and NCM, along with state and Northern Territory emergency plans (as mentioned at Chapter 4.1), facilitate an all-hazards approach and provide for flexibility and more rapid and efficient communication of needs.

Petroleum titleholders are the responsible party for oil pollution incidents resulting from offshore petroleum facilities – consistent with the legislative requirements set out under the OPGGSA and subordinate *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. Additionally, the AGCMF requires that strategic government coordination in response to incidents involving offshore petroleum facilities in Commonwealth waters is led by the Department of Industry, Science and Resources (DISR). DISR may stand up the Offshore Petroleum Incident Coordination Committee (OPICC) to draw together expertise and capability from across government and guide a coordinated Commonwealth Government strategic response. Refer Section 5.2.

The current National Plan arrangements do not align with these Australian Government crisis management settings. Clear alignment of the National Plan to the AGCMF will provide clarity across Australian Government agencies and stakeholders of the responsibilities and accountabilities of Australian Government agencies. This lack of clarity was raised consistently across the co-design workshops conducted as part of the Review process.

28 Australian Government Disaster Response Plan 2020 (COMDISPLAN) (homeaffairs.gov.au)
29 National Coordination Mechanism (homeaffairs.gov.au)
30 Australian Government Crisis Management Framework (pmc.gov.au)

Recommendation 3

That ITSOC agrees, consistent with current arrangements in the AGCMF and COMDISPLAN:

the Australian Government will provide a leadership role for maritime emergencies, including maintaining current National Plan responsibilities for coordinating support to the states and Northern Territory government and industry where requested.

responsibility for coordination of national support will rest with the relevant lead agency as defined within the AGCMF.

It will be important that each jurisdiction has appropriate arrangements in place to allow them to meet their responsibilities under new national arrangements.

Recommendation 4

That ITSOC agrees jurisdictions will continue to progress integration of arrangements for maritime emergencies into Australian, state and Northern Territory governments crisis and disaster management arrangements.

4.4 Stakeholder and First Nations people Relationships

Non-government stakeholders and First Nations people can play an important role in the National Plan. Stakeholder and First Nation People partnerships are critical to the National Plan's success.

First Nations people are custodians of cultural knowledge and have ongoing cultural responsibilities to care for their country. National arrangements that incorporate the expertise and experience of First Nations people are recommended.

Under the National Plan, responsibilities are shared across various industry, maritime agencies, government entities and affected communities. While the role of industry varies across each jurisdiction due to differing governance arrangements (for example, some ports are privatised, and others are not), the significant expertise within industry is invaluable in maritime emergencies.

Sectors that contribute to the National Plan include the environment, science and technology (EST) network, fire authorities, petroleum institutes and associations, petroleum industry mutual aid, chemistry associations, ports, shipping salvage, towage casualty, and insurance industries. Noting the emergence of new industries, the breadth of stakeholders will also change in the future. New national arrangements may require increased focus on communities and volunteers, as well as stakeholders from emerging industries.

As discussed in Chapter 1, the NPSIAF is an independent industry focused body established to provide input to the NPSCC on the strategic direction of the National Plan. The members of the NPSIAF include stakeholders with a direct interest in the operational arrangements of the National Plan, covering the commercial maritime sector, peak oil and chemical industry bodies, and professional bodies representing salvage and towage interests.

Industry experience is essential, and the National Response Team are made up of both state and Northern Territory government and maritime and petroleum industry personnel who can support responses. AMSA holds nine stockpiles of response equipment around Australia, and industry, through AMOSC, holds four. The petroleum industry contributes to the National Plan via the AMOSPlan[31], and as part of the National Plan arrangements, AMOSC provides oil spill response training for the petroleum industry. Industry will be at the forefront of innovation, including how to respond to new threats such as new fuel type fires.

An ongoing partnership approach with stakeholders and First Nations people is essential under new national arrangements, noting that new national arrangements will include new stakeholders, First Nations people and new industries.

Recommendation 5

That ITSOC agrees that identification of new stakeholders and the development of these new partnerships (including with First Nations people and industries) will be prioritised as part of new national arrangements.

[31] AMOSPlan – Australian Marine Oil Spill Centre (amosc.com.au)

CHAPTER 5. INTERNATIONAL CONVENTIONS & NATIONAL GOVERNANCE

5.1 International Conventions

Part 7 of the current National Plan deals with cost recovery. However, there is no international or domestic framework for marine pollution incidents that consider alternative fuels (for example, the *International Convention on Oil Pollution Preparedness, Response and Co-operation 1990* (OPRC) only address oil products, and the HNS Protocol only deals with cargoes). This creates gaps in both response capability and liability.

As summarised at part 2.1 of the National Plan, Australia is party to international conventions that provide a global framework of uniform standards and liability arrangements for marine pollution incidents related to oil and hazardous noxious substances carried as cargo. These are generally implemented as part of domestic legislative arrangements and recovery is enacted through a polluter pays system. Conventions ratified by Australia, and relevant to the National Plan include:

- International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90)
- Protocol on Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol)
- International Convention on Civil Liability for Bunker Oil Pollution Damage 2001 (Bunker Convention)
- International Convention on Civil Liability for Oil Pollution Damage 1992 (CLC Convention)
- International Oil Pollution Compensation 1992 (IOPC)
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992 (the 1992 Fund Convention).

The *Nairobi International Convention on the Removal of Wrecks 2007* (the Nairobi Convention) sets out the rules on the removal of both wrecks and objects lost at sea, such as shipping containers. The Joint Standing Committee on Treaties has recently recommended the Australian Government become a signatory to the Nairobi Convention.

The *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances (HNS) by Sea 2010 (the HNS Convention*) covers death or injury to a person, loss or damage to property and costs of cleaning pollution, preventing the spread of pollution and undertaking environmental regulation. Australia is not currently a signatory to this convention.

Currently, Australian legislation does not cover all known forms of pollution, nor adequately address recovery arrangements.

Noting the lengthy timeframes often associated with the development and ratification of conventions, and the introduction of new legislation, Australia will be reliant on existing domestic legislation to manage incidents associated with alternative fuels and/or technology.

Given the introduction of alternative fuels is imminent, with some already trialled across various shipping areas (including hydrogen, ammonia and methanol) being, the Australian Government has an opportunity to scope and influence development of international

arrangements for alternative fuels, for potential use domestically. In the absence of international conventions for liability associated with an alternative fuel incident, such as the *International Convention on Civil Liability for Bunker Oil Pollution Damage (2008)*[32] (the Bunkers Convention)[33], any claims for costs, injuries or losses will be entirely dependent upon domestic law. Therefore, jurisdictional involvement will be important given the application of response and liability matters may apply to Commonwealth/state/Northern Territory regulation.

Failure to consider these gaps may leave the Australian, state and Northern Territory governments without a national regulatory and management framework to manage appropriately risks (at a jurisdictional level) related to alternative fuels carried as bunker and emerging industries and technology.

Recommendation 6

That ITSOC agrees the Australian Government, with input from state and Northern territory governments, and relevant stakeholders, will develop a program of work to ensure international and domestic regulatory frameworks enable the effective response to, and recovery from, maritime emergencies. This will include new challenges:

- *caused by a release of alternative fuel carried as bunker*
- *caused by the release of hazardous and noxious substances carried as cargo*
- *caused by new technology and emerging industries*
- *requiring intervention to stop, or slow the progression of, an incident for the purposes of public safety or to protect the marine environment*
- *required to support community and environmental recovery from maritime emergencies.*

5.2 National governance

As well as the National Plan governance structures (refer Chapter 1.1), two intergovernmental agreements (IGAs) are in place. The IGAs were signed by Ministers of each jurisdiction and committed their governments to a series of actions and processes. The IGAs are:

- 2002 Intergovernmental Agreement on the National Plan to combat pollution of the sea by oil and other noxious and hazardous substances[34], which sets out the plan for how Australia will respond to marine pollution spills in Australian waters.

32 International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKER) (imo.org)
33 Australia is a signatory to the Bunkers Convention.
34 https://www.amsa.gov.au/about/who-we-work/intergovernmental-agreement-national-plan-combat-pollution-sea-oil-and-other#:~:text=and%20hazardous%20substances-,Intergovernmental%20agreement%20on%20the%20National%20Plan%20to%20combat%20pollution%20of,pollution%20spills%20in%20Australian%20waters.

- 2008 Intergovernmental Agreement on the National Maritime Emergency Response Arrangement[35] (NMERA), which details how Australia will deal with possible marine casualty incidents around the Australian coast and in the exclusive economic zone.

Governments and industry rely on the IGAs to authorise a range of operational and budgetary decisions. The IGAs require review for a number of reasons, including the following.

2002 Intergovernmental Agreement on the National Plan to combat pollution of the sea by oil and other noxious and hazardous substances:

- focusses on shipping and offshore oil and gas, and excludes a broader stakeholder group associated with, and potentially affected by, alternative fuels and technologies both as bunker and cargo.
- is granular in detail and commits agencies to resourcing activities which will be less relevant into the future, and may be best placed outside of national arrangements, for example:
  - maintaining support systems including fixed wing aerial dispersant spraying (refer Schedule 1, 12.1.6)
  - managing research and development project (refer Schedule 1, 14.)
- identifies offshore platforms as responsible for only first-strike capacity when responding to oil spills in Commonwealth waters – this arrangement has been superseded by changes to the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*, regulated by NOPSEMA), which require titleholders to prepare for all levels of response.

2008 Intergovernmental Agreement on the National Maritime Emergency Response Arrangement:

- focusses on shipping – it does not have capability to support responses associated with alternative fuels and technologies.
- includes the Powers of Intervention by MERCOM, however these powers are constrained to environmental damage and do not include public safety, which may be at increased risk with some alternative fuels and technologies, for example toxic fumes from fuels such as methanol and ammonia.

An agreement between governments remains necessary, however how that agreement is structured needs careful consideration. Rather than revising existing IGAs, it may be preferable to construct a new contemporary governance structure that will provide forward-looking guidance suited to rapidly evolving challenges.

35 https://www.amsa.gov.au/about/who-we-work/intergovernmental-agreements-australia-and-other-governments/intergovernmental

Recommendation 7

That ITSOC agrees:

- *the National Plan Strategic Coordination Committee (NPSCC) will bring forward option(s) for a contemporary governance framework, including consideration of whether revised intergovernmental agreement(s) or other mechanisms are appropriate, to supersede the 2002 Intergovernmental Agreement on the National Plan to combat pollution of the sea by oil and other noxious and hazardous substances and the 2008 Intergovernmental Agreement on the National Maritime Emergency Response Arrangement, for the consideration of Ministers.*
- *the contemporary governance framework will seek to:*
  - *provide for national capability to respond to maritime emergency incidents that significantly impact the community including public safety, environment and supply chains*
  - *provide for coordination of mutual aid arrangements between governments and industry*
  - *provide for coordination of transboundary and/or multi-sector incidents*
  - *ensure stakeholders are accountable for delivery of relevant national capability*
  - *assure governments and stakeholders that effective arrangements are in place.*

5.3 Australian, state and Northern Territory governance

The framework of the National Plan is for Australian governments to share responsibility for a range of matters in response to maritime environmental emergencies and identifies the parties responsible for leading responses to maritime incidents. However, at an operational level, arrangements for maritime environmental emergencies vary between the Australian, state and Northern Territory governments. For example:

- in some jurisdictions marine pollution incidents are the responsibility of environment agencies and it is transport agencies in others.
- in some jurisdictions fire agencies are responsible for hazardous and noxious substance response as part of emergency management agencies, while in other jurisdictions the maritime agency is responsible.
- nationally, the responsibilities of ports vary significantly depending on the level of privatisation.

In addition, arrangements within jurisdictions may change from time to time.

The National Plan does not provide a mechanism for monitoring or ensuring parties to the National Plan are able to deliver on their responsibilities under the arrangement. This was

recently demonstrated in the National Plan Capability Review (refer Chapter 2.4.3) which found that emergency towage capabilities have not kept up with the increasing size of modern vessels.

Each jurisdiction must review its management frameworks to ensure it is able to meet responsibilities under new national arrangements, as well as provide an effective response and recovery from maritime incidents.

Given the risks associated with alternative fuels and technologies (refer to Chapter 2.1), new national arrangements will need to focus on public safety as well as the marine environment. To be effective, new national arrangements should allow for early and efficient engagement with community, First Nations people and stakeholder in planning and responding to incidents. Effective stakeholder and First Nations people engagement can provide trust and reassurance to the community regarding risks, safety and effective response. New national arrangements will need to consider broad stakeholder and First Nations people identification and communication across the government, industry, tourism, local communities, Indigenous communities and environmental representatives.

Recommendation 8

That ITSOC agrees the Australian, state and Northern Territory governments will each review their own management arrangements to ensure the necessary resource and regulatory frameworks are in place to respond to and recover from an expanded scope of maritime emergencies. The arrangements must cover both current and emerging risks and must include stakeholder and First Nations people engagement and report to the NPSCC on progress.

CHAPTER 6. CAPABILITIES

The Australian Disaster Preparedness Framework[36] defines 'capability' as the collective ability and power to deliver and sustain an effect within a specific context and timeframe. The National Plan maintains a range of capabilities designed to intervene, prevent, or respond to and manage the impacts of marine pollution and casualty incidents.

6.1 Maintaining National Capabilities

As previously noted, despite significant changes to the operational environment, the current marine pollution and casualty capabilities need to be maintained for the foreseeable future. Petroleum products will still be used as fuels, carried as Cargoes, produced through offshore petroleum activities and will present ongoing community and environmental hazards.

Changes resulting from alternative fuels and emerging industries will require new capabilities to be developed, in addition to maintaining existing capability. This will not only include the provision of new resources and facilities, but also engagement and training of stakeholders not previously involved in the National Plan. For example:

- fire and rescue capability to respond to lithium-ion battery fires on passenger and cargo vessels
- capability to respond to an incident related to bunkering of an alternative fuel, such as methanol.

The National Plan review supports the continued delivery of national level services and capabilities. Maritime emergencies are infrequent and there is unlikely to be a business case for each jurisdiction to develop its own capabilities, as might be the case for natural hazards. For reasons of efficiency and effectiveness, there are benefits in maintaining and developing national capabilities. For example, there are efficiencies in:

- maintaining national stockpiles of equipment to avoid the need for each jurisdiction to acquire and maintain its own equipment.
- continuing to develop national training programs to encourage national consistency in procedures and practices, as well as streamline administrative tasks associated with training programs.

These capabilities include emergency towage, offshore containment and recovery, aerial dispersant, and incident management (through the National Response Team). These capabilities are enabled by several existing programs including the National Response Team, response equipment, national equipment stockpiles, fixed wing aerial dispersant capability, national training and development, emergency towage capability (ETC), as well as National Plan exercises. Refer to Part 4 of the National Plan.

There needs to be clear objectives associated with the development of the national capabilities, which should be viewed as supplementing, not replacing, state and Northern Territory resources and capabilities and supporting, not replacing, offshore petroleum industry resources and capability.

36 Australian Disaster Preparedness Framework (homeaffairs.gov.au)

Recommendation 9

That ITSOC agrees the Australian Government, through the responsible portfolios, will maintain national capabilities to supplement jurisdictions and industry in the management of maritime incidents of national significance. These capabilities will be maintained and/or established where there are clear benefits for reasons of effectiveness and/or efficiency.

6.2 Capability gaps

As a result of technological advancements and market forces, ships have become larger and more specific in their design and capability. Consequently, harbour towage vessels have been built to keep pace with modernising ships. However, the design and capability of ocean-going ETVs differs greatly to harbour vessels.

As discussed at Chapter 2.4.3 in 2022 AMSA commissioned a *Statement of Capability* report to review existing response capabilities under the National Plan which, among other things, concluded:

- if one party fails to contribute, there is a risk to national arrangements and Australia's ability to deliver on the National Plan's effectiveness
- without activating the National Plan, state/Northern Territory agencies hold limited or no ability for offshore containment and recovery responses.

The *Statement of Capability* review identified existing and emerging capability gaps that Australian, state and Northern Territory governments need to address to provide greater assurance around public and environmental safety. These include:

- a reduction in emergency towage capability as identified through the National ETC Workshop Report
- variability in oil spill preparedness across jurisdictions
- lack of a national Level 3 HNS response capability.

Noting the recommended expanded scope of new national arrangements (as discussed at 3.5), further work is required to identify and quantify gaps in capability to respond to maritime emergencies associated with new fuels, technologies and industries. As well as considering the outcomes of the *Statement of Capability* and the ETV review (discussed at Chapter 2.4.2), further capability assessment may include:

- capability to respond to a chemical incident, either carried as fuels or cargoes
- capability to provide effective emergency towage into the future, noting the overall reduction in resources and the changing nature of such incidents with the introduction of alternative fuels
- capability to manage shipboard fires, particularly in the case of a lithium-ion battery fire on cargo and passenger vessels
- capability to respond to hazards around new technologies and infrastructure types
- capability to support community and environmental recovery from a maritime emergency.

The Review suggests that work to identify these capability requirements should commence as a matter of priority through the NPSCC, noting that several relate to gaps in current capability requirements.

Recommendation 10

That ITSOC agrees the National Plan Strategic Coordination Committee, with input from the National Plan Strategic Industry Advisory Forum, will develop and implement a work program to design the capability required to manage current and emerging risks to public safety and the environment in a maritime emergency. The work program will also address capability gaps, including those:

- *caused by a release of alternative fuel carried as bunker*
- *caused by the release of hazardous and noxious substances carried as cargo*
- *caused by new technology and emerging industries, including offshore firefighting*
- *caused by chemical release*
- *requiring intervention for public safety or to protect the marine environment*
- *required to support community and environmental recovery from maritime emergencies.*

The work program will consider innovation and flexibility, to allow for continued improvement in responding to emerging and currently unknown risks.

6.3 Resourcing the National Plan

Resourcing for any new capabilities cannot be defined until the actual requirements are determined. It is likely that current resourcing at both the Commonwealth, state and Northern Territory levels will be insufficient to build the capability required to prepare and respond to maritime environmental emergencies.

Noting Recommendation 10, once the capabilities work program has been developed, it would be beneficial for the NPSCC to consider the overall resourcing required under the new national arrangements, and to develop a resourcing model for the consideration of governments.

Recommendation 11

That ITSOC agrees, on completion of the work program to design the capability required and address capability gaps, the National Plan Strategic Coordination Committee with input from the National Plan Strategic Industry Advisory Forum will develop a model for resourcing new national arrangements for consideration by governments.

CHAPTER 7. IMPLEMENTING THE OUTCOMES OF THE REVIEW

Once the review report has been considered by ITSOC and recommendations are agreed, the NPSCC will be responsible for implementing those recommendations.

Given the importance of the National Plan, NPSCC may begin preparatory planning ahead of ITSOC consideration of this report and its recommendations.

APPENDIX 1 A summary of how each term of reference has been addressed in the review

Terms of Reference description	Chapters and recommendations referring in the review
1. The types and nature of the maritime environmental risks that Australia may face over the next 10 years.	**Chapters 1 Introduction and 2 Changing Environment.** These chapters drew upon workshop participant comments including two detailed iterations of a draft revised scope and additional analysis of reports by IMO and other data sourced referenced in the report. **Recommendation 1** **Recommendation 10**
2. The operational effect(s) of the National Plan being sought by the parties to the National Plan.	**Chapters 5 Responsibilities and 6 Capabilities**. These address the outcomes the NP (National Plan) should achieve and evaluates the responsibilities and capabilities according to national and jurisdictional roles. **Recommendation 9**
3. The scope of the National Plan, including: • whether the scope should be expanded to a broader range of complex maritime risks – for example, shipboard fires, mass casualty events, container losses, emerging marine based industry (for example, wind farms). • re-defining (as per 3a) the maritime risks that are within scope of the National Plan. • how the National Plan formally interfaces with Commonwealth and State/Northern	The Review considered both the current scope (Chapter 3.1) and the proposed expanded scope of the National Plan (Chapter 3.2) and interfaces with national arrangements (Chapter 4). Detailed analysis of the Australian Government Crisis Management Framework (AGCMF) and the National Coordination Mechanism (NCM) were incorporated throughout Chapters 3 and Chapter 8 (regarding new arrangements). While the technical and governance matters are too complex and specialised to discuss with community stakeholders at this stage, representatives from agencies that engage with the interests of key community groups were invited to the workshops. The National Indigenous Australians Agency were active participants and highlighted issues affecting First Nations people.

Terms of Reference description	Chapters and recommendations referring in the review
Territory disaster management arrangements). • the expectations of governments and the community and industry for the mitigation of risks of maritime incidents; and • broad stakeholder identification and communication across the Australian government sector, industry, tourism and local communities, First Nations people and Traditional Owner communities, and environmental representatives.	Industry was represented on the Design Team that developed the workshops in addition to participating on the National Plan Strategic Industry Advisory Forum that reviewed the drafts of this report. Jurisdictional representatives included participants from Fire and Emergency agencies and environmental managers (including GBRMPA (Great Barrier Reef Marine Park Authority)) to incorporate broad stakeholder views. **Recommendation 2** **Recommendation 4** **Recommendation 5** **Recommendation 6**
4. The effectiveness of existing resourcing and governance arrangements for pollution preparedness and response activities, noting the recent development of Whole-of-Government crisis management frameworks and other emergency and disaster response strategies.	Governance issues were discussed at Workshop 4 and are examined in detail in Chapter 4 covering national and jurisdictional governance as well as Australia's international commitments through maritime conventions. Current and future resourcing requirements of the National Plan are in Chapter 7. Whole of Government Crisis Management considered the AGCMF processes which are now consolidated in response for major national emergencies and also considered how these interact with state/Northern Territory strategies (see Chapters 4 and 7). **Recommendation 3** **Recommendation 4** **Recommendation 7** **Recommendation 8** **Recommendation 11**

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