The Senate

Environment and Communications References Committee

Oil or gas production in the Great Australian Bight

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Committee contact details

PO Box 6100
Parliament House
Canberra ACT 2600

Tel: 02 6277 3526
Fax: 02 6277 5818
Email: ec.sen@aph.gov.au
Internet: www.aph.gov.au/senate_ec

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Committee membership

Committee members in the 45th Parliament

Senator Sarah Hanson-Young, Chair (from 13 October 2016)	AG, TAS
Senator Linda Reynolds CSC, Deputy Chair (from 15 February 2017)	LP, WA
Senator Anthony Chisholm	ALP, QLD
Senator Sam Dastyari	ALP, NSW
Senator Jonathon Duniam	LP, TAS
Senator Anne Urquhart	ALP, TAS

Substitute members for this inquiry

Senator David Fawcett (LP, SA) for Senator David Bushby (LP, TAS) on 16 November 2016

Senator Chris Back (LP, WA) for Senator Jonathon Duniam (LP, TAS) on 16 November 2016 and from 8 February 2017

Senator Alex Gallacher (ALP, WA) for Senator Sam Dastyari (ALP, NSW) from 8 November 2016

Senator Sarah Hanson-Young (AG, SA) for Senator Larissa Waters (AG, QLD) from 10 October 2016 to 7 February 2017

Senator Sarah Hanson-Young (AG, SA) for Senator Peter Whish-Wilson (AG, TAS) from 7 February 2017

Participating members for this inquiry

Senator Nick Xenophon	NXT, SA
Senator Skye Kakoschke-Moore	NXT, SA
Senator Stirling Griff	NXT, WA
Senator Glenn Sterle	ALP, WA

Former members

Senator David Bushby (to 5 December 2016)	LP, TAS
Senator James Paterson (5 December 2016 to 15 February 2017)	LP, VIC
Senator Larissa Waters (to 7 February 2017)	AG, QLD

Committee members in the 44th Parliament

Senator Anne Urquhart, Chair	ALP, TAS
Senator Linda Reynolds CSC, Deputy Chair	LP, WA
Senator Chris Back	LP, WA
Senator Anne McEwen (from 18 April 2016)	ALP, SA
Senator the Hon Lisa Singh	ALP, TAS
Senator Larissa Waters	AG, QLD

Substitute members for this inquiry

Senator Sean Edwards (LP, SA) for Senator Linda Reynolds (LP, WA)
from 29 February 2016
Senator Glenn Sterle (ALP, WA) for Senator Joe Bullock (ALP, WA)
from 3 March 2016 to 13 April 2016
Senator Alex Gallacher (ALP, WA) for Senator the Hon Lisa Singh (ALP, TAS)
from 23 February 2016
Senator Robert Simms (AG, SA) for Senator Larissa Waters (AG, QLD)
from 24 February 2016

Participating members for this inquiry

Senator Nick Xenophon	IND, SA

Former members

Senator the Hon Anne Ruston, Deputy Chair (to 12 October 2015)	LP, SA
Senator the Hon James McGrath (to 12 October 2015)	LP, QLD
Senator Joe Bullock (to 13 April 2016)	ALP, WA

Committee secretariat

Ms Christine McDonald, Committee Secretary
Mr Colby Hannan, Principal Research Officer
Ms Fattimah Imtoual, Senior Research Officer
Ms Michelle Macarthur-King, Administration Officer

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List of abbreviations

AIP	Australian Institute of Petroleum
ALARP	As Low as Reasonably Practicable
AMCS	Australian Marine Conservation Society
AMOSC	Australian Marine Oil Spill Centre
AMOU	Australian Maritime Officers Union
AMSA	Australian Maritime Safety Authority
APPEA	Australian Petroleum Production and Exploration Association
BIA	Biologically Important Area
CBAA	Clean Bight Alliance Australia
CMR	Commonwealth Marine Reserve
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPLGA	Eyre Peninsula Local Government Association
FTE	Full-time Equivalent
GAB	Great Australian Bight
GDP	Gross Domestic Product
HOB	Head of the Bight
HSI	Humane Society International
IFAW	International Fund for Animal Welfare
IMO	International Maritime Organisation
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
JPDA	Joint Petroleum Development Area
LNG	Liquid Natural Gas
LPG	Liquid Petroleum Gas
MODU	Mobile offshore drilling unit

NOPSA	National Offshore Safety Authority
NOPSEMA	National Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NWS	North West Shelf
OPEP	Oil Pollution Emergency Plans
OPGGS Act	*Offshore Petroleum and Greenhouse Gas Storage Act 2006*
OPP	Offshore Project Proposal
OPRC Convention	International Convention on Oil Pollution Preparedness, Response and Co-operation
OPRC-HNS Protocol	Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000
OSRL	Oil Spill Response Limited
PAH	Polycyclic aromatic hydrocarbons
PRRT	Petroleum Resource Rent Tax
PSC	Production Sharing Contract
RDAWEP	Regional Development Australia Whyalla and Eyre Peninsula
RRR	Resources Rent Royalty
SAOGA	South Australian Oyster Growers Association
SARDI	South Australian Research Development Institute
SASQAP	South Australian Shellfish Quality Assurance Program
SFRT	Subsea First Response Toolkit
SGP	State Gross Product
VOCs	Volatile Organic Compounds
WSFs	Water-soluble fractions

Chapter 1

Introduction

Referral and terms of reference

1.1 On 22 February 2016 the Senate referred the following matter for inquiry and report by 12 May 2016:

> The potential environmental, social and economic impacts of BP's planned exploratory oil drilling project, and any future oil or gas production in the Great Australian Bight, with particular reference to:
>
> (a) The effect of a potential drilling accident on marine and coastal ecosystems, including:
>
> (i) impacts on existing marine reserves within the Bight,
>
> (ii) impacts on whale and other cetacean populations, and
>
> (iii) impacts on the marine environment;
>
> (b) social and economic impacts, including effects on tourism, commercial fishing activities and other regional industries;
>
> (c) current research and scientific knowledge;
>
> (d) the capacity, or lack thereof, of government or private interests to mitigate the effect of an oil spill; and
>
> (e) any other relevant matters.[1]

1.2 On 8 May 2016, the Governor-General issued a proclamation dissolving the Senate and the House of Representatives from 9 am on 9 May 2016 for a general election on 2 July 2016. As a result of the dissolution of the Senate, the committee ceased to exist and the inquiry lapsed.

1.3 The 45th Parliament commenced on 30 August 2016 and members of this committee were appointed on 1 September 2016. On 13 September 2016, the Senate agreed to the committee's recommendation that this inquiry be re-adopted with a reporting date of 29 March 2017. The Senate also agreed to the recommendation that the committee have the power to consider and use the records of the Environment and Communications References Committee appointed in the previous parliament that related to this inquiry.[2]

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1 *Journals of the Senate*, No. 138, 22 February 2016, pp. 3735–36.

2 *Journals of the Senate*, No. 5, 13 September 2016, p. 177.

Conduct of the inquiry

1.4 As noted above, the inquiry spans two parliaments—the 44th and 45th—with the conduct of the inquiry interrupted by the dissolution of the Senate prior to the 2016 general election.

Progress during the 44th Parliament

1.5 In accordance with its usual practice, the committee appointed in the previous parliament advertised the inquiry on its website and wrote to relevant individuals and organisations inviting submissions. The date for receipt of submissions was 1 April 2016.

1.6 The committee received 63 submissions, which are listed at Appendix 1. The public submissions are also available on the committee's website at http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Oil_drill_Great_Aus_Bight.

1.7 In addition to the published submissions, the committee received a significant number of form letters which expressed opposition to oil or gas drilling in the Great Australian Bight. The committee received three different form letters, and agreed to publish an example of each type of form letter and the number received on its website. A breakdown of the form letters by type is at Appendix 1.

1.8 During the 44th Parliament, the committee conducted a hearing in Adelaide on 28 April 2016. A list of witnesses who appeared at the hearing is at Appendix 2.

Progress during the 45th Parliament

1.9 Following the re-adoption of the inquiry on 13 September 2016, the committee published a further 22 submissions (numbers 64 to 85). The committee also continued the program of public hearings with a public hearing held in Adelaide on 16 November 2016, and a hearing in Canberra on 7 February 2017.

1.10 As above, further information on the submissions and witnesses who participated in public hearings is at Appendices 1 and 2 respectively.

Termination of BP's proposed exploratory program

1.11 Following the re-adoption of the inquiry in the current Parliament, BP announced that it would not be progressing its exploration drilling program in the Great Australia Bight.[3] Although BP is no longer active in the Great Australian Bight, other companies, including Chevron, retain exploration licences. The matters related to BP's previously planned exploratory drilling program remain active for these projects.

3 Department of Industry, Innovation and Science, *Submission 72*, p. 3.

Acknowledgement

1.12 The committee would like to thank the organisations and individuals who provided evidence to the inquiry.

Structure of the report

1.13 Chapters 1 to 6 of this report contain an overview of the evidence provided to the committee. Members of the committee have expressed their views in additional comments attached to this report.

1.14 Chapters 1 to 6 are as follows:

- Chapter 1 provides overview of Australia's oil and gas industry, and BP's exploratory program as well as an introduction to the geographical, social and economic features of the Great Australian Bight region.
- Chapter 2 provides an overview of the regulatory framework governing offshore oil and gas activities in Australia.
- Chapter 3 canvasses issues raised in relation to the regulation of the offshore oil and gas industry. This includes issues with the adequacy of community consultation, and proponent and regulator transparency.
- Chapter 4 examines the economic impact of oil and gas exploration and production, at both the regional and national level.
- Chapter 5 examines the potential effects of an oil spill on the region's industries, wildlife, and ecosystems. It also examines the potential impact of exploratory activities such as seismic surveying.
- Chapter 6 examines the capacity of industry and government to mitigate the effects of an oil spill.

Oil and gas production and use in Australia

1.15 Oil and gas exploration and production has been a significant contributor to the Australian economy through export revenue, employment opportunities, and regional development. In 2014–15, the oil and gas extraction industry (both onshore and offshore) was estimated to contribute $31 billion to industry gross value added, and to employ around 24,000 people. It also plays an important role in maintaining global and domestic long term energy security.[4]

1.16 Most known oil resources in Australia are condensate and naturally occurring liquid petroleum gas (LPG) associated with large offshore gas fields. Australia has limited resources of crude oil, holding only approximately 0.2 per cent of world crude oil reserves. In 2014–15, Australia's crude oil and condensate production declined by 5 per cent while naturally occurring LPG production also fell by 11 per cent. These falls in output continued the longer term decline of Australia's production of primary petroleum.[5]

1.17 Australia is a net importer of crude oil and other refinery feedstock, importing around 75 per cent of the crude oil it refines into liquid fuels, and importing around 50 per cent of the refined liquid fuels in Australia.[6] In 2014–15, crude oil imports were valued at $14.9 billion while imported refined petroleum products were valued at $19.3 billion.[7]

1.18 The Australian Petroleum Production and Exploration Association (APPEA) submitted that Australia's consumption of oil and natural gas is expected to remain strong through to 2050, and as such, the continual replacement of energy reserves will be required as established reserves are depleted. With current rates of consumption, Australia has seven to ten years of economic demonstrated resources of crude oil remaining. This is expected to decline unless new discoveries are made, while the volume of imported refined products is projected to rise by 6.7 per cent per year to 796 million barrels by 2019–20. APPEA concluded that new discoveries of commercially-viable oil supply will bring critical energy security benefits'.[8]

1.19 According to the Department of Industry, Innovation and Science, current market approaches have ensured a diversity of supply that has protected Australia's fuel supply from disruption over many decades. However, Australia's ability to import crude oil and refined products is still vulnerable to high-impact geopolitical events such as widespread global conflict. As such, it is important that areas with moderate to high prospectivity continue to be identified in order to ensure Australia can maintain

4 Department of Industry, Innovation and Science, *Submission 4*, p. 6.

5 Geoscience Australia, *Submission 70*, p. 3.

6 Department of Industry, Innovation and Science, *Submission 4*, p. 6.

7 Geoscience Australia, *Submission 70*, p. 4.

8 APPEA, *Submission 46*, p. 9.

diverse and resilient energy supplies, and to sustain energy security both domestically and regionally.[9]

Prospectivity of the Great Australian Bight

1.20 Offshore Australia has proven to be one of the world's mostly highly prospective areas for oil and gas exploration and development. At 15 March 2016 there were 172 exploration permits, 75 retention leases, and 92 production licences active in Commonwealth waters.[10] Offshore oil and gas exploration of the Great Australian Bight has occurred in three major phases—the late 1960s and early 1970s, the early 1990s, and 2000 through to current exploration efforts. In total, 45 oil and gas exploration permits have been granted in the Great Australian Bight, and 13 exploration wells were drilled between 1972 and 2003. Since then, only seismic surveys have been conducted.[11]

1.21 In 2014, Geoscience Australia published a petroleum geology inventory of Australia's 35 offshore frontier basins,[12] sub-basins and provinces on Australia's northern, north-western, south-western, southern, south-eastern and remote eastern margins. The prospectivity of each area was determined through the examination of its geological history, and the presence of geological factors necessary for the existence of a petroleum system.[13]

1.22 Geoscience Australia's examination of the Great Australian Bight, ranked the Ceduna Sub-basin as the most prospective for hydrocarbons.[14] The areas of the Bight Basin are provided in the map below.

9 Department of Industry, Innovation and Science, *Submission 4*, p. 6.

10 Department of Industry, Innovation and Science, *Submission 4*, p. 6.

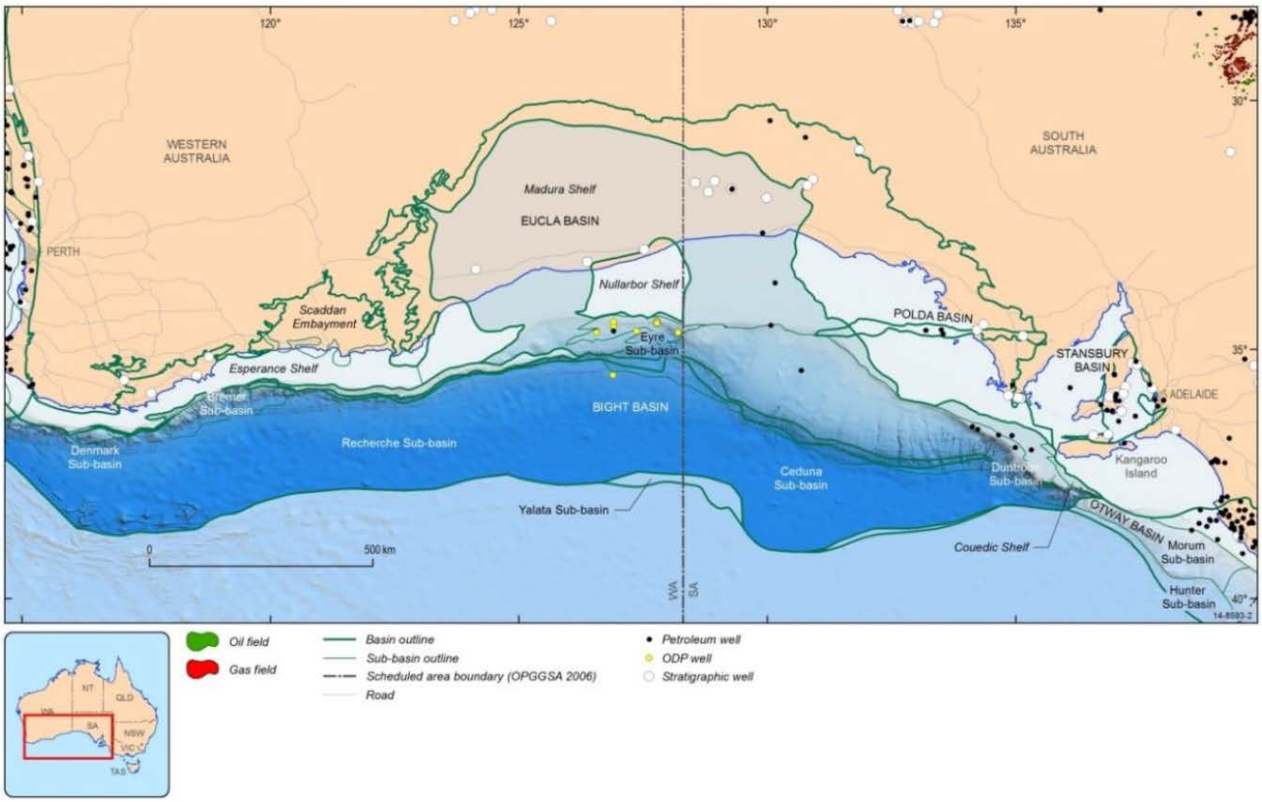
11 Department of Industry, Innovation and Science, *Submission 4*, p. 8. See also, South Australian Government, *Submission 44*, p. 3.

12 A frontier basin is defined as one that is considered prospective for hydrocarbons due to its geology, but where no hydrocarbon discoveries have been made.

13 Geoscience Australia, *Submission 70*, p. 6.

14 Geoscience Australia, *Submission 70*, p. 6.

Figure 1.1 – Map showing location of the Bight Basin



Source: Geoscience Australia, Submission 70, p. 8

1.23 Ten petroleum exploration wells have been drilled in the eastern Bight Basin with only five in the Ceduna Sub-basin. With the exception of Gnarlyknots 1A, all exploration wells were drilled in the relatively shallow water near the basin margin.[15]

1.24 In 2003, a Woodside Energy-led joint venture was awarded permits in the Ceduna Sub-basin with an indicative investment of $90 million over six years. The Gnarlyknots 1A well was drilled by the Woodside Energy-led joint venture, however due to harsh ocean conditions it was plugged and abandoned at 4736m, before reaching its prime objective. The failure of this venture had a significant impact on the perception of the prospectivity of the area.[16]

1.25 As a result of the failure of Gnarlyknots 1A, Geoscience Australia undertook a $6.7 million precompetitive study in 2007 which collected and identified world-class marine, oil-prone potential source rocks in the Bight Basin. As a result, there was a renewed interest in exploration in the area with permits awarded to: BP Exploration (Alpha) in 2011 with Statoil subsequently taking a 30 per cent interest in these permits

15 Geoscience Australia, *Submission 70*, p. 10.

16 Geoscience Australia, *Submission 70*, pp. 11–12.

in 2013; and Chevron Australia New Ventures Pty Ltd, and Murphy Australia Pty Ltd and Santos Offshore Pty Ltd in 2013.[17]

1.26 The BP permits were awarded with an indicative guaranteed work program of $605 million and included four wells, and a secondary work program in excess of $800 million in three subsequent years.[18]

1.27 Chevron's two permits were awarded with an indicative guaranteed work program of $486 million including four wells, and a secondary work program of $10 million in three subsequent years. Murphy Australia Oil and Santos Offshore's permit was awarded with an indicative guaranteed work program of $50 million, and a secondary work program of $53 million in three subsequent years. The guaranteed work programs for the three permits is valued at $536 million over the first three years.[19]

1.28 Since the award of permits in 2011, exploration activities conducted by permit holders has resulted in the acquisition of approximately 32,000km^2 of 3D seismic surveys. The data acquired from these surveys has transformed the knowledge base for the Basin by providing uniform coverage in high quality 3D data.[20]

1.29 The Department of Industry, Innovation and Science noted that titleholders are currently undertaking geological studies and planning four exploration wells due to be drilled by October 2018.[21]

Overview of the Great Australian Bight

1.30 The Great Australian Bight extends from Cape Catastrophe, Eyre Peninsula in South Australia to Cape Pasley, east of Esperance in Western Australia. This coast is part of the world's longest south-facing continental margin. It experiences small tidal heights but is exposed to the strong wind and wave regimes generated in the Southern Ocean. Intense low-pressure systems that traverse the Southern Ocean occasionally hit the coast.[22]

1.31 For over 200 kilometres from the Head of the Bight in South Australia to the Western Australian border, iconic limestone cliffs averaging 80 metres in height rise

17 Geoscience Australia, *Submission 70*, pp. 12–13.

18 Geoscience Australia, *Submission 70*, p.12.

19 Geoscience Australia, *Submission 70*, p.13.

20 Geoscience Australia, *Submission 70*, p.13.

21 Department of Industry, Innovation and Science, *Submission 72*, p. 6.

22 Geoscience Australia, *Submission 70*, p. 14.

above the water. These coastal cliffs are of both geomorphological significance, and are considered of high scenic value.[23]

1.32 Isolation and difficult coastal access combine to make the Great Australian Bight relatively pristine. It is a region with high levels of biodiversity and endemism, and is recognised as being of global conservation significance for species of rare and endangered marine mammals and seabirds. It provides critically important calving regions for the endangered southern right whale, and colonies (including pupping areas) for Australia's only endemic pinniped, the Australian sea-lion. Other protected species known to inhabit the area include the great white shark, humpback whale, and a number of species of albatross.[24]

1.33 Mr Matthew Collis, Policy and Campaigns Manager for the International Fund for Animal Welfare (IFAW) stated that:

> The bight is an incredibly important area for marine mammals. It is home to nearly half of all the world's species of whales and dolphins, and all three species of seals and sea lions found regularly in mainland Australian waters. The Australian government has mapped biologically important areas in the bight for blue whales, southern right whales, sperm whales and the Australian sea lion, some of which overlap directly with, or are in close proximity to, BP's proposed drilling area. The bight is also recognised as globally important for elusive and rarely seen beaked whales.[25]

Coastal environment

1.34 The coastal environment of the Great Australian Bight includes a number of areas of outstanding natural value. These include the Head of the Bight, Nuyts Archipelago, Kangaroo Island, Recherche Archipelago, and the Coorong Coast.

1.35 The Head of the Bight, marked by its shallow waters, provides critically important habitat for calving southern right whales, and sharks and seals.[26]

1.36 Nuyts Archipelago contains a complex of highly varied marine habitats which provide important nursery and feeding grounds for commercially and recreationally important crustacean and fish species. The southern right whale, Australian sea-lion, New Zealand fur seal, and a variety of bird species including little penguins also use the area for feeding and breeding. Kangaroo Island similarly supports populations of

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23 Australian Government, Director of National Parks, 'Great Australian Bight Marine Park (Commonwealth & State waters) – A Description of Values and Uses', 2005, p. 1, https://www.environment.gov.au/system/files/resources/0ad236e7-3655-422c-b2c2-c3ba2638acdd/files/gab-values.pdf, (accessed 10 August 2016).

24 Australian Government, Director of National Parks, 'Great Australian Bight Marine Park (Commonwealth & State waters) – A Description of Values and Uses', 2005, p. 1.

25 Mr Matthew Collis, IFAW, *Committee Hansard*, Adelaide, 28 April 2016, p. 27.

26 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 27.

little penguins, and significant populations of Australian sea-lions and New Zealand fur seals. It also supports populations of coastal wading birds, and white-bellied sea eagles.[27]

1.37 The Recherche Archipelago is composed of over 1500 granite islets with headlands and sandy beaches. It supports seagrass meadows and a variety of reefs. It provides habitat to over one per cent of the world's population of short-tailed shearwaters, white-faced petrels and pied oystercatchers. The Archipelago also provides habitat to a significant population of little penguins. Further, it is the only breeding site for the western subspecies of the Cape Barren goose, and supports a number of breeding colonies of Australian sea-lions and New Zealand fur seals.[28] The waters of the Eastern Recherche also provide important seasonal calving habitat for the southern right whale, important foraging areas for the great white shark, Australian sea-lion and the migratory flesh-footed shearwater.[29]

1.38 The Coorong Coast contains the Coorong National Park which was declared to protect the shallow saltwater lagoons located behind the coastal sand dunes. These wetlands are of national and international significance. However, the sandy beaches and fore dunes also provide important roosting and nesting sites for a number of bird species including the hooded plover. They also provide a number of breeding and haul-out sites for Australian sea-lions and New Zealand fur seals.[30]

Great Australian Bight Commonwealth Marine Reserve

1.39 Marine reserves are established to protect and maintain an area's biodiversity, including endangered and threatened species such as whales and pinnipeds, and their habitats. Marine reserves are globally recognised as one of the most effective ways to maintain the long-term health and productivity of marine ecosystems.

1.40 Commonwealth Marine Reserves (CMRs) are established by proclamation under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Director of National Parks is the statutory authority responsible for

27 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 27. For more information on the natural values of the Nuyts Archipelago, see: Department of Environment, Water and Natural Resources (SA), *Nuyts Archipelago Marine Park Management Plan 2012*, p. 6. See also the Department for Environment and Heritage (SA), *Island Parks of the Western Eyre Peninsula Management Plan* (2006).

28 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 27. See also Department of Environment and Planning (SA), *Coorong National Park Management Plan* (1991).

29 See: http://www.environment.gov.au/topics/marine/marine-reserves/south-west/eastern-recherche

30 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 28.

the administration, management and control of Commonwealth reserves under the EPBC Act.[31]

1.41 Management plans for CMRs are required under the EPBC Act and these plans give effect to broad reserve management principles, define what activities may occur within the reserve, and the level of approval required for each activity. The content of management plans is prescribed in the EPBC Act[32] and must detail how each zone of a reserve is to be managed, and include the conditions under which mining operations may be permitted in the reserve. Management plans must be approved by the Minister and registered on the Federal Register of Legislative Instruments.[33]

1.42 The Australian Government adopted the International Union of Conservation of Nature (IUCN) protected area categories for defining the management principles for CMRs. These categories have been given legal effect under section 346 of the EPBC Act and schedule 8 of the EPBC Regulations. Each CMR is assigned an IUCN category at proclamation, though a CMR may also be divided into two or more zones with an IUCN category applied to each zone.[34]

Great Australian Bight Marine Park

1.43 In 1998, the Great Australian Bight Marine Park (Commonwealth Waters) was declared by proclamation. In November 2012, the Great Australian Bight Commonwealth Marine Reserve (GAB CMR) was declared as part of the South-West Commonwealth Marine Reserve Network. The reserve was reproclaimed in 2013 to allow for the independent review of marine reserves announced by the Australian Government in 2012. While the review is under consideration, transitional arrangements for all reserves were declared by the Director of National Parks.[35]

1.44 The GAB CMR covers an area of more than 45,00km^2. It encompasses the former Great Australian Bight Marine Park (Commonwealth Waters) which stretched 200km west of Ceduna in South Australia following the coast to the Western Australian border. It includes a 20 nautical mile wide strip extending to 200 nautical miles offshore.[36]

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31 NOPSEMA, 'Guidance Note – Activities within Commonwealth Marine Reserves', 26 November 2015, p. 3.

32 *Environment Protection and Biodiversity Conservation Act 1999*, s. 367.

33 NOPSEMA, 'Guidance Note – Activities within Commonwealth Marine Reserves', 26 November 2015, p. 3.

34 NOPSEMA, 'Guidance Note – Activities within Commonwealth Marine Reserves', 26 November 2015, p. 3.

35 Department of the Environment, *Submission 15*, pp. 7–8.

36 Department of the Environment and Energy, *Former Great Australian Bight Marine Park (Commonwealth Waters)*, http://www.environment.gov.au/topics/marine/marine-reserves/south-west/gab-former, (accessed 15 February 2017).

1.45 The area of the former Great Australian Bight Marine Park (Commonwealth Waters) comprised two overlapping zones—the Marine Mammal Protection Zone and the Benthic Protection Zone. The Mammal Protection Zone was intended primarily to provide for undisturbed calving of the southern right whale and protection of Australian sea-lion colonies. The Benthic Protection Zone was intended to protect a sample of the unique and diverse plants and animals that live on and are associated with the ocean floor of the Great Australian Bight.[37]

1.46 The major conservation values for the area include:

- globally important seasonal calving habitat for the threatened southern right whale;
- important foraging areas for the:
    - threatened Australian sea-lion,
    - threatened white shark,
    - migratory sperm whales, and
    - migratory short-tailed shearwater;
- examples of the western ecosystems of the Great Australian Bight Shelf Transition and the easternmost ecosystems of the Southern Province; and
- three key ecological features including the ancient coastline, the benthic invertebrate communities of the eastern Great Australian Bight, and areas important for small pelagic fish.[38]

1.47 Under the transitional management arrangements for the GAB CMR, the management of the former Great Australian Bight Marine Park (Commonwealth Waters) must be consistent with the arrangements in place prior to November 2012. Under these previous management arrangements, mining (including exploration) was allowable in the Benthic Protection Zone but not allowed in the Marine Mammal Protection Zone. Under the GAB CMR, oil and gas exploration and mining is allowable in the Multiple Use and Special Purpose Zones (IUCN VI zones) of the reserve, but are not allowed in the Marine National Park Zone (IUCN II).[39]

1.48 The Director of National Parks also issued a general approval under section 359B of the EPBC Act for the areas of the GAB CMR which were not included in the former Great Australian Bight Marine Park (Commonwealth Waters). This removes

37 Department of the Environment and Energy, *Former Great Australian Bight Marine Park (Commonwealth Waters)*, http://www.environment.gov.au/topics/marine/marine-reserves/south-west/gab-former.

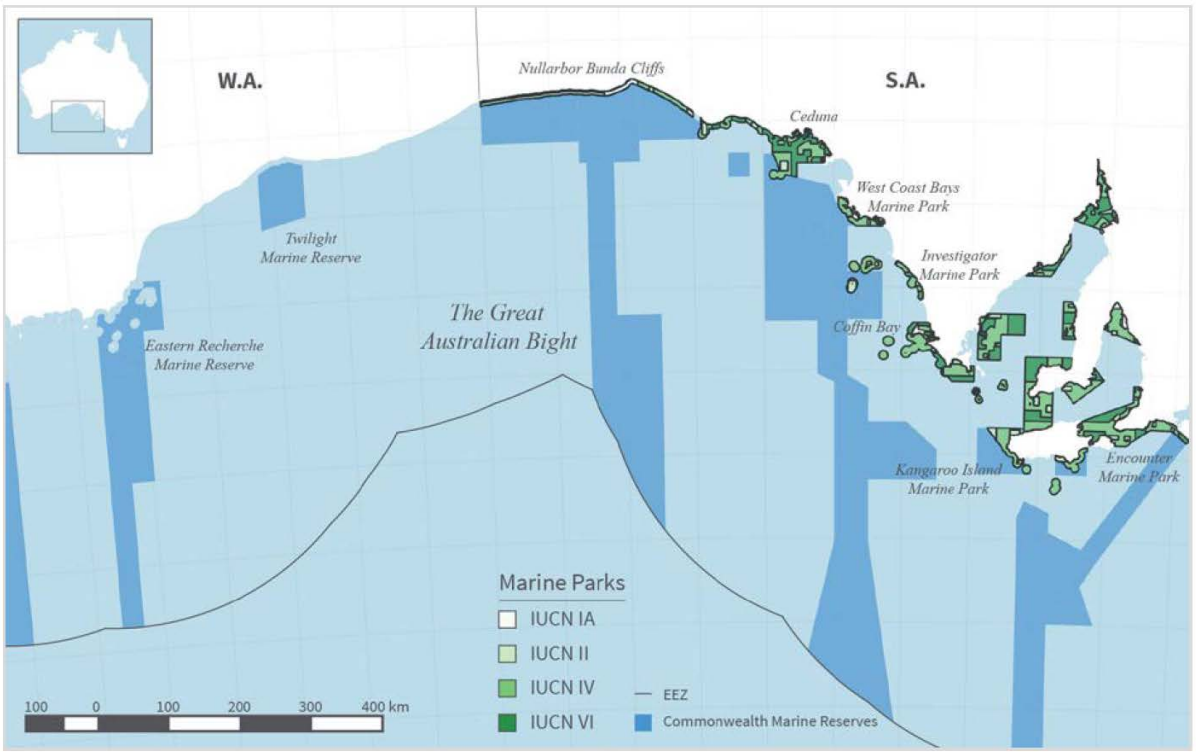
38 Department of the Environment and Energy, *Great Australian Bight Commonwealth Marine Reserve*, http://www.environment.gov.au/topics/marine/marine-reserves/south-west/gab.

39 Department of the Environment, *Submission 15*, p. 8.

the need for any further approval of individual activities to be sought from the Director of National Parks.[40]

1.49 The Great Australian Bight also contains a number of other marine reserves as illustrated in Figure 1.2 below.

Figure 1.2 – Marine reserves in the Great Australian Bight



Source: Mr Laurent Lebreton, Submission 35, Attachment 1, p. 18.

Great Australian Bight marine environment

1.50 Geoscience Australia provided the committee with a summary of information on the marine environment of the Great Australian Bight. The summary included that the seabed within the Bight comprises a broad continental shelf and continental slope that descends to 4,500 m water depth. Submarine canyons have incised deeply into the continental slope within the Great Australian Bight with shallower canyons known to provide habitat for rich communities of biota. Canyons also influence local productivity of the Great Australian Bight by acting as pathways for localised upwelling of nutrient-rich waters.[41]

40 Department of the Environment, *Submission 15*, p. 8. For more information on approvals for activities see: https://www.environment.gov.au/topics/marine/marine-reserves/south-west/management#Approvals_for_activities_within_new_areas.

41 Geoscience Australia, *Submission 70*, p. 15. See also Sea Shepherd Australia, *Submission 18*, p. 1.

Marine mammals

1.51 For the Great Australian Bight, and more specifically the area that may be affected by BP's proposed drilling, there are 28 whale species, eight dolphin species and three pinniped species listed under the EPBC Act. Of the whale species, five are listed as threatened.[42]

1.52 Within the Great Australian Bight, a number of Biologically Important Areas (BIAs) have been recognised for marine mammal species. Mr Collis stated that:

> The Australian government have highlighted, through the collection and review of research that exists, what they call 'biologically important areas' for marine mammals in the Great Australian Bight that includes blue whales, southern right whales, sperm whales and the Australian sea lion. There is well documented evidence of where those important areas are for those animals and they do, by in large, crossover with some of the exploration leases or within close enough proximity to certainly be affected by any spill.[43]

1.53 The southern right whale BIA is located approximately 220 kilometres from BP's proposed drilling sites. Typically, the southern right whale is present off the coast of southwest Western Australia and the far west of South Australia between May and November. As previously mentioned, the Head of the Bight is a significant aggregation area for southern right whales with up to half of the population gathering between May and November to calve.[44]

1.54 It is known that there are significant southern right whale migratory pathways through the Great Australian Bight, however exact pathways are currently unknown. It is thought that between September and November, populations move offshore to feeding areas including the Antarctic ice edge. It is also believed that the entire coastline from Kangaroo Island west to the Perth Canyon is an important migratory pathway and that there is likely to be a seasonal westward movement. Southern right whales have also been observed migrating directly into the Head of the Bight from a southerly direction, and have been observed moving out of the bight in a southerly direction without following the coastline.[45]

1.55 The Antarctic blue whale and the pygmy blue whale are both known to have feeding grounds in the Great Australian Bight. Both species feed on krill with Antarctic blue whales feeding primarily during summer and autumn, and pygmy blue

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42 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 31. See also the Department of Environment and Energy, 'Threatened Whale Species', http://www.environment.gov.au/marine/marine-species/cetaceans/legislation.

43 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 30.

44 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 32; International Fund for Animal Welfare, *Submission 29*, pp. 3–4.

45 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 32.

whales feeding during November to May. Pygmy blue whale migration is thought to follow the continental shelf break, and a migration BIA is located approximately eight kilometres from proposed drilling sites.[46] The endangered blue whale is found particularly around the Bonney upwelling area between Ceduna and Portland where upwelled nutrients stimulate the bloom of phytoplankton which provides an abundance of food.[47]

1.56 Important foraging grounds for sperm whales are also located along the shelf break of the Great Australian Bight, and in waters south of Kangaroo Island. This BIA overlaps with the northern 15 km of BP's proposed drilling area.[48] The International Fund for Animal Welfare (IFAW) submitted that it undertook the first-ever boat-based acoustic survey for cetaceans in the eastern Great Australian Bight. This study found sperm whale densities in the Kangaroo Island Canyons equivalent to other 'global hotspots' for sperm whales. The study also sighted six rare Shepherd's beaked whales, which have only been seen alive at sea on fewer than 10 occasions globally. IFAW submitted that based on a review of unpublished data on live sightings and strandings, it is believed that the Great Australian Bight provides important habitat for deep-diving species of cetaceans such as beaked whale species and pilot whales.[49]

1.57 The Australian sea-lion is listed as vulnerable under the EPBC Act, and as a threatened species under state legislation in both South Australia and Western Australia, is known to only breed in the coastal and offshore waters of South Australia. The estimated pup production per season is approximately 2,432 with estimated population estimates between 9,900 and 14, 700 over a number of decades.[50]

Reptiles and birds

1.58 In the Great Australian Bight, all three species of marine turtle found in the area are listed under the EPBC Act as threatened and migratory. These include loggerhead, green, and leatherback turtle species.[51]

1.59 In addition, 19 species of bird are listed under the EPBC Act as potentially being found in the proposed drilling area. These include migratory species which migrate annually to and from feeding and breeding areas. There are also a number of foraging BIAs in the Great Australian Bight which exist for listed species such as the

46 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 32.

47 Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 15.

48 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 33.

49 International Fund for Animal Welfare, *Submission 29*, p. 4.

50 Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 15.

51 Greenpeace Australia Pacific, *Submission 22*, p. 2; BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 33.

antipodean albatross, the flesh-footed shearwater, the little penguin, and the great-winged petrel.[52]

Benthic invertebrates

1.60 Geoscience Australia commented that the Great Australian Bight supports one of the world's most diverse soft-sediment ecosystems and has a high level of endemism, meaning many species occur nowhere else in the world. An estimated 85 per cent of fish, 95 per cent of molluscs, and 90 per cent of echinoderms are endemic to southern Australia. The Great Australian Bight has one of the world's highest species richness of macroalgae, with over 1,200 species and 75 per cent of red algae species endemic to southern Australia.[53]

1.61 Geoscience Australia went on to note that much of the information about biodiversity in the Great Australian Bight is for the continental shelf, with little known about biodiversity along the deeper waters of the continental slope.[54]

Regional population and industry profile

1.62 Whyalla and the Eyre Peninsula is one of the most complex planning regions in Australia. It is remote, vast in size at 230,000 km^2 and has a small population of approximately 57,000 people with the majority residing in the regional cities of Whyalla and Port Lincoln.[55]

1.63 The regional economy is diverse, with key industries including agriculture, manufacturing, fishing, and aquaculture. Tourism and mining are the region's fastest growing industries with substantial potential for future growth. Though industrial diversity provides strength and resilience, it is not shared across the region with particular industries focused in individual towns and areas. For example, 76 per cent of the region's fishing jobs are based in Port Lincoln, and tourism activity is predominantly focussed in coastal areas.[56]

1.64 The region has an ageing population with an older workforce profile for most industries than both South Australia, and Australia. There is an expected surge in retirements which has the potential to reduce the region's labour force by approximately 40 per cent by 2020. Additionally, the region has a smaller proportion

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52 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 33; Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 15.

53 Geoscience Australia, *Submission 70*, p. 16.

54 Geoscience Australia, *Submission 70*, p. 17.

55 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 3.

56 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 3.

of young people to replace these retirees, and an annual exodus with 30 per cent of the region's young people moving to Adelaide for employment and study.[57]

Industry and tourism

1.65 The Great Australian Bight supports a number of industries including commercial fisheries and eco-tourism. Significant commercial fisheries include oyster, abalone, blue crab, marine scalefish, pipi, prawn, rock lobster, and sardine. Of all the wild-catch fisheries, the rock lobster is estimated to be the most valuable, followed by prawn and abalone.[58] The region contains five Commonwealth fisheries managed under the *Fisheries Management Act 1991* (Cth), and six South Australian fisheries managed under the *Fisheries Act 1982* (SA). It also supports significant recreational fishing, and fishing based tourism.[59]

1.66 South Australia's fishing and aquaculture production in 2010–11 was valued at $425.5 million, with the Great Australian Bight region accounting for 97 per cent of production valued at $234.7 million. The region accounted for 100 per cent of South Australia's southern bluefin tuna production, 100 per cent of marine finfish production, 97 per cent of oyster production, 92 per cent of mussel production, 62 per cent of abalone production, and 97 per cent of all other aquaculture. It also supports an important sardine fishery with 94 per cent of the catch sold as tuna farm fodder.[60]

1.67 The southern blue fin tuna industry is Australia's most profitable commercial aquaculture industry. The South Australian Government submitted that it contributes $136 million annually to State Gross Product (SGP).[61]

1.68 The South Australian oyster industry directly employs 254 full-time equivalent (FTE) in regional areas, supports a further 433 FTE in downstream positions, and contributes to a further 533 FTE in flow-on business activity.[62] According to the South Australian Oyster Growers Association (SAOGA), the industry contributes $35.3 million in farm-gate value to the state's economy and a

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57 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 3.

58 Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 16

59 Miss Rebecca Faulkner, *Submission 38*, p. 9.

60 Regional Development Australia Whyalla and Eyre Peninsula, *Regional Profile 2014–16*, September 2014, p. 25, http://www.rdawep.org.au/wp-content/uploads/2016/02/RDAWEP-REGIONAL-PROFILE-2014-16-September-2014.pdf, (accessed 3 March 2017). See also Miss Rebecca Faulkner, *Submission 38*, p. 9.

61 South Australian Government, *Submission 44*, p. 11.

62 South Australian Oyster Growers Association, *Submission 42*, p. 4.

further $68.3 million from associated downstream activities. In addition, the oyster industry contributes $145.6 million to the economy through flow-on to other sectors.[63]

1.69 Tourism is also a major contributor to the economy in the region providing a combined $1.2 billion per year for 2013–2014. Employment from the tourism industry in the region containing marine parks is estimated to directly and indirectly account for nearly 10,000 full-time equivalent jobs.[64] The Eyre Peninsula was the fourth most popular tourism region in South Australia with an estimated 390,000 visitors in 2012. Visitor expenditure exceeded $277 million in 2011–12, from 700 businesses.[65]

1.70 The Aboriginal Lands Trust owns and manages the Head of the Bight Visitor/Interpretive Centre which it stated 'is a successful Aboriginal business and is situated on Aboriginal freehold held by the Aboriginal Lands Trust'. It stated that the Head of the Bight:

> …is recognised as one of South Australia's iconic tourist destinations with a growing profile both nationally and internationally. The area promotes the local habits and biodiversity as well as the behaviours and other scientific curiosities relating to the Southern Right Whale.[66]

1.71 The Aboriginal Lands Trust also stated that during the whale season, on average approximately 30,000 tourists visit the Centre each year between mid-May and late October. It noted that:

> The cost to manage and maintain the Centre is dependent upon visitor attendance and ticket sales which enables the Trust to offer a great facility for up close experiences with the Southern Right Whales and other marine life. It is a major tourism draw card for the region.[67]

1.72 The creation of highly protected marine ecosystems is expected to further provide a strong base for developing ecotourism in South Australia in the longer term by supporting the growth of activities such as whale and dolphin watching, shark watching, scuba diving and boating.[68] The City of Victor Harbor highlighted that the opportunity to 'view whales up close and in their natural environment' has become a 'marketable experience'. It particularly noted that 'day trippers for whale watching

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63 South Australian Oyster Growers Association, *Submission 42*, p. 2.

64 Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 17. See also Miss Rebecca Faulkner, *Submission 38*, p. 9.

65 Regional Development Australia Whyalla and Eyre Peninsula, *Regional Profile 2014–16*, September 2014, p. 27, http://www.rdawep.org.au/wp-content/uploads/2016/02/RDAWEP-REGIONAL-PROFILE-2014-16-September-2014.pdf, (3 March 2017).

66 Aboriginal Lands Trust, *Submission 84*, p. 2.

67 Aboriginal Lands Trust, *Submission 84*, p. 2.

68 Mr Laurent Lebreton, *Submission 35*, Attachment 1, p. 17. See also Sea Shepherd, *Submission 18*, p. 5.

during the quieter winter months provides some economic stimulus that may not otherwise exist'.[69]

Current research and scientific knowledge

1.73 Scientific research is crucial to understanding the potential environmental, social and economic impacts of offshore oil and gas activity in the Great Australian Bight. NOPSEMA stated that 'it is of fundamental importance that the impact and risk evaluation process be supported by current knowledge and scientific evidence, relevant to the proposed activity, its timing, duration and location'.[70]

1.74 The Australian Marine Conservation Society (AMCS) submitted that despite a general understanding of the Great Australian Bight, it remains a largely unexplored frontier. Further, despite universal agreement amongst the scientific and conservation community as to the Great Australian Bight's significance, there are a number of knowledge gaps including of the region's physical processes, biodiversity and ecology. The AMCS submitted that:

> Senior scientists and researchers have authored a review of science knowledge of the Bight and have identified a range of key knowledge gaps in our current understanding of the region's physical processes, biodiversity and ecology. This major science review has made it clear that we cannot confidently assess the implications of potential oil spills for the region's ecosystems and reliant industries. This review noted that "Our current knowledge of the [Great Australian Bight] is not sufficiently developed to confidently assess the implications of potential oil and gas production, including potential oil spills, for the region's diverse marine ecosystems or for its economically important existing marine industries".[71]

1.75 The committee also received evidence that there are significant knowledge gaps in understanding the behaviour of migratory cetaceans. IFAW noted that oil and gas proponents have collected data, but that this information has not been widely shared. IFAW stated that:

> Scientific knowledge on marine life in the GAB, including most cetacean species remains poor. There is relatively little peer-reviewed published material and it is limited to just a few species. More data exists, with some collected by scientific studies and other data collected to inform environmental impact assessments by oil and gas companies. While it is welcome that such research was funded, it is deeply regrettable that the data is not shared more widely by companies or funding not provided to researchers to enable them to write up and publish this data.[72]

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69 City of Victor Harbor, S*ubmission 12*, p. 1.

70 NOPSEMA, *Submission 7*, p. 24.

71 Australian Marine Conservation Society, *Submission 19*, p. 5.

72 International Fund for Animal Welfare, *Submission 29*, p. 6.

1.76 Mr Matthew Collis, IFAW told the committee that 'our scientific knowledge of the bight is still relatively limited, particularly for species that spend most of their time offshore. This underlines the need for better baseline data before allowing damaging activities to proceed'.[73]

1.77 Similarly, the Humane Society International (HSI) submitted that 'for many of the threatened species found in the Great Australian Bight, there is still little scientific research to be able to identify critical habitat'. HSI concluded that as a result of these gaps in knowledge:

> …the impacts of oil or gas development in the area are likely to be more severe than current scientific knowledge suggests, with significant implications when considering exploration or drilling activities or should an oil spill occur.[74]

1.78 The committee received evidence of a range of research projects which are currently being undertaken by the scientific community in conjunction with state and commonwealth governments, and industry stakeholders. In particular, the Great Australian Bight Research Program, which involves BP, CSIRO, the South Australian Research and Development Institute (SARDI), the University of Adelaide and Flinders University. BP submitted that:

> This A$20 million four-year programme is one of the largest whole-of-ecosystem research programmes ever undertaken in Australian waters. It will obtain information to improve understanding of the environmental, economic, and social values of the Bight to inform future sustainable development. The programme will focus on seven major research themes including oceanography, pelagic (open water) ecosystem and environmental drivers, benthic (ocean floor) biodiversity, iconic species and apex predators, socio-economics and ecosystem modelling.[75]

1.79 The Wilderness Society stated that the Great Australian Bight Program is 'intended to produce an Integrated Ecosystem Model of the Bight – a powerful state-of-the art modelling tool of the structure and dynamics of the region's ecosystems'. But it also noted that the key outputs of this project are not expected to be available until mid-2017, which would have been after the scheduled first exploratory drilling proposed by BP.[76]

1.80 Ms Claire Charlton from Curtin University told the committee that research for the Great Australian Bight Whale Project is conducted in collaboration with a range of organisations including universities, state government organisations such as

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73 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 27.

74 Humane Society International, *Submission 3*, p. 2.

75 BP Developments Australia Pty Ltd, *Submission 20*, p. 31.

76 The Wilderness Society, *Submission 43*, p. 14.

the South Australian Museum and Western Australian Museum. Ms Charlton noted that:

> Current sponsors of this project are Murphy and Santos, who are oil and gas permit leaseholders here in the Great Australian Bight. Murphy and Santos are completing a three-year sponsorship of a PhD program as well as providing funds to see the long-term project continue. It is important to note that they recognise the importance of having a robust baseline dataset and information on the existing environment to be able to inform risk based decision making into the future.[77]

1.81 Ms Charlton explained that the objectives of the research are aligned with the Commonwealth Conservation Management Plan for the Southern Right Whale and includes:

> ...monitoring from the Head of Bight, from the Bunda Cliffs, and we complete population census, photo ID, fine-scale behaviour, underwater acoustics and just this year we have started collaborating with Murdoch University to use drones to assess the health and the body condition of the whales.[78]

1.82 APPEA submitted that in addition to these studies, there are a number of other programs being undertaken in collaboration with oil and gas companies. These include the CSIRO Great Australian Bight Deepwater Marine Program—a collaborative project with Chevron; and the Curtin University—Great Australian Bight, Understanding Underwater Sound Impacts—a collaborative project with BP.[79]

1.83 APPEA noted that scientific knowledge is advanced by information obtained directly from industry exploration activities including seismic surveying and drilling. It submitted that this knowledge is shared with the scientific community to build a broader knowledge base of the Great Australian Bight, and to ensure that all operations are conducted with minimal impact on the marine environment.[80]

1.84 Some submitters such as the Clean Bight Alliance Australia (CBAA) expressed concern regarding the independence of research conducted by or funded by the oil and gas industry. The CBAA stated that:

> Furthermore any research conducted or funded by companies should be thoroughly scrutinised and peer reviewed otherwise it cannot be seen as independent or reliable. CBAA believe that increasing our scientific

77 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 2.

78 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 2.

79 APPEA, *Submission 46*, p. 5.

80 APPEA, *Submission 46*, p. 5.

> knowledge of the GAB is a highly valuable task which should not be reliant on corporate funding.[81]

1.85 However, others such as IFAW stated that it 'has no problem per se with industry funding research, in fact we would welcome more funding, but the topics and priorities for research should be decided by scientists independently of funders, rather than research that suits the agenda or whim of a particular company'.[82]

81 Clean Bight Alliance Australia, *Submission 23*, p. 8.

82 International Fund for Animal Welfare, *Submission 29*, p. 6.

Chapter 2

Regulatory framework for oil and gas exploration and production

2.1 This chapter describes the regulatory arrangements for offshore oil and gas exploration and production, and the interactions between both federal and state authorities. Information is provided on the overall approach, legislative framework and approvals process which govern offshore operations.

2.2 This chapter also explores the unique role of the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as an independent 'one-stop' regulator, and the principles and legislation it administers. Finally, information is included on BP's proposed venture, and the status of its application to NOPSEMA.

Offshore oil and gas approval and regulatory regime

2.3 The offshore oil and gas industry is technically complex and its regulation requires both specialist knowledge and expertise, and the co-operation of state and Commonwealth governments.

2.4 In South Australia, petroleum operations which occur within the three nautical mile limit of state waters are administered under the *Petroleum (Submerged Lands) Act 1982* (SA) and the *Petroleum and Geothermal Energy Act 2000* (SA).[1]

2.5 Petroleum operations which occur outside this three nautical mile limit occur within Commonwealth waters, and are administered under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act), the *Offshore Petroleum and Greenhouse Storage (Regulatory Levies) Act 2003*, and a range of associated regulations. These regulations include:

- Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009;
- Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009;
- Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011; and
- Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Regulations 2004.[2]

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1 South Australian Government, *Submission 44*, p. 4.

2 NOPSEMA, *Submission 7*, p. 7.

2.6 This legislation 'provides for the orderly exploration for, and recovery of, offshore oil and gas resources and sets out a basic framework of rights, entitlements and responsibilities of government and industry'.[3] It is underpinned by four key principles. These are:

> (a) Offshore oil and gas resources in Australia are best exploited, and risk managed appropriately, through commercial development;
>
> (b) All offshore operations are undertaken in accordance with good oilfield practice, and are compatible with optimal long-term exploitation of oil and gas resources;
>
> (c) Risks to health and safety and the marine environment associated with offshore operations must be managed to be as low as reasonably practicable, and deemed acceptable;
>
> (d) A system of licencing and titles grants exclusive property rights to titleholders to provide protection and incentives throughout the oil and gas lifecycle. These rights and incentives are dependent on compliance with requirements under the OPGGS Act and associated regulation, and title conditions.[4]

Regulatory reforms

2.7 On 21 August 2009, the Montara wellhead platform located in the Timor Sea and operated by PTTEP Australasia (Ashmore Cartier) Pty Ltd suffered a blowout which resulted in the uncontrolled escape of oil and gas. The leak was stopped on 3 November 2009, after a number of attempts. As a result of the incident, the Australian government initiated the Commission of Inquiry into the Montara Incident which examined the likely cause of the incident, and the adequacy of Australia's offshore oil and gas industry regulatory regime.[5]

2.8 On 24 November 2010, the Report was publicly released and the findings highlighted a number of operator design and regulatory failures. It recommended the establishment of a single, independent regulatory body with safety, well integrity and environmental management as its objectives.[6]

2.9 In 2011, amendments to the OPGGS Act and associated regulations were made to implement recommendations from the Inquiry. The key amendments included:

- the separation of offshore regulation and titles administration through the establishment of the National Offshore Petroleum Titles Administrator

3 Department of Industry, Innovation and Science, *Submission 4*, p. 10.

4 Department of Industry, Innovation and Science, *Submission 4*, p. 10.

5 Department of Industry, Innovation and Science, *Submission 4*, p. 11.

6 Department of Industry, Innovation and Science, *Submission 4*, p. 11.

(NOPTA). This would ensure that any potential or perceived conflicts of objectives are avoided;

- the responsibility for the regulation of well operations management plans and approval of well activities was given to the former National Offshore Petroleum Safety Authority (NOPSA); and
- the regulation of environmental management in Commonwealth waters was also added to the remit of NOPSA, and its name was changed to the National Petroleum Safety and Environmental Management Authority (NOPSEMA) to reflect this additional responsibility.[7]

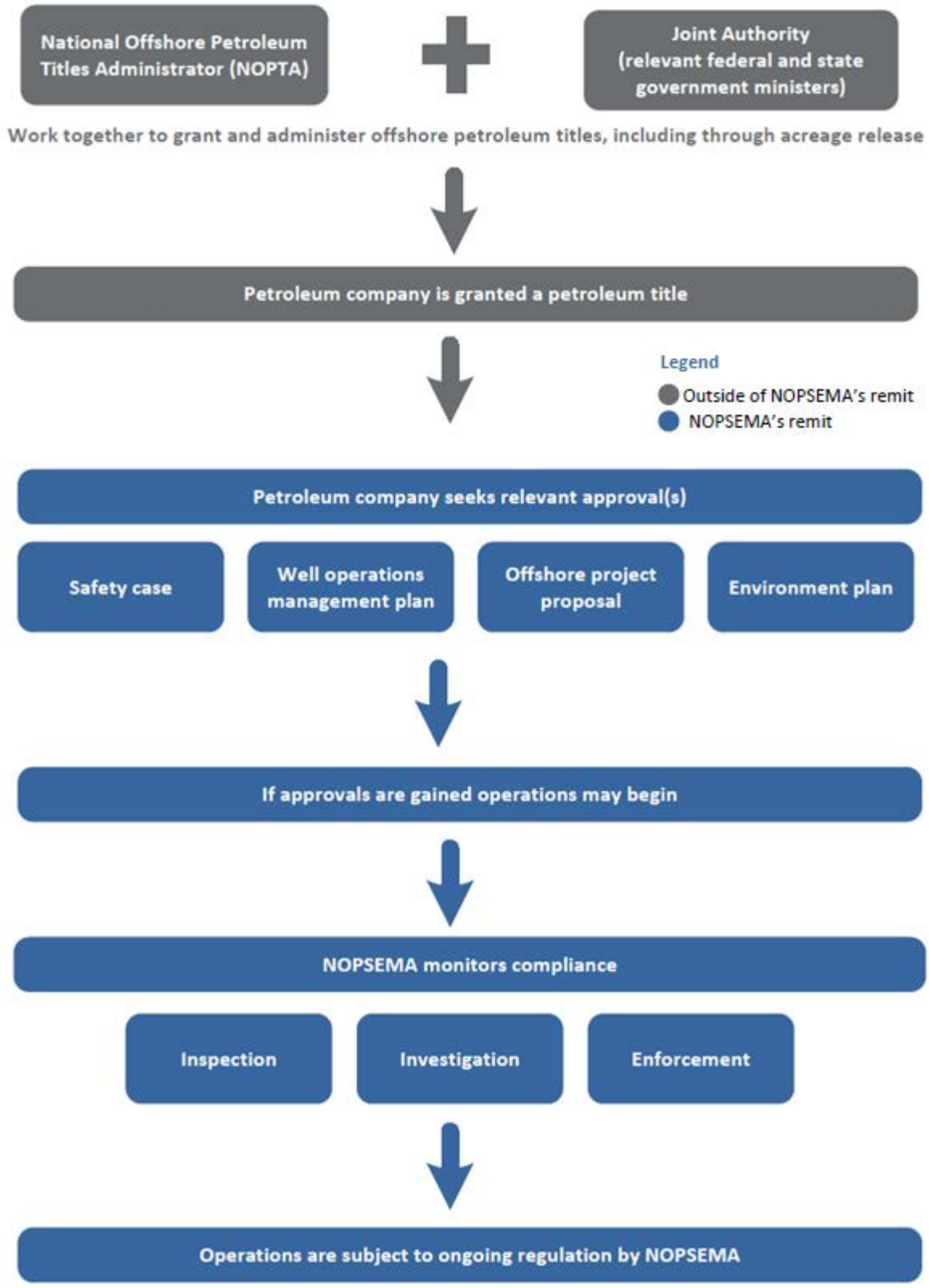
Regulatory responsibilities

2.10 The legal framework regulating the Australian offshore oil and gas industry is administered by three Australian Government entities: the National Petroleum Titles Administrator (NOPTA); NOPSEMA; and the Department of Industry, Innovation and Science. Legislation is also administered in co-operation with state and Northern Territory governments through Joint Authorities.[8] Figure 2.1 shows the regulatory process from the granting and administering of titles, through to the monitoring of oil and gas operations to ensure regulatory compliance.

7 Department of Industry, Innovation and Science, *Submission 4*, p. 11.

8 South Australian Government, *Submission 44*, p. 4.

Figure 2.1 – Oil and gas activity regulatory process



Source: NOPSEMA, Submission 7, Attachment 1, p. 30.

Joint Authority

2.11 Each offshore area is administered by a Joint Authority comprising the responsible Commonwealth Minister (the Minister for Resources and Northern Australia) and the relevant state or Northern Territory Resources Minister.

2.12 Joint Authorities make key decisions on resource management and resource security, and have responsibilities under the OPGGS Act including:

- the release of offshore oil and gas exploration areas; and
- the granting of titles, and making any subsequent changes to title conditions.[9]

National Offshore Petroleum Titles Administrator

2.13 Offshore oil and gas activity in Australia can only occur where a company holds a valid title. NOPTA is responsible for the administration of petroleum and greenhouse gas titles in Commonwealth waters in Australia. Its key functions include:

- the provision of information, analysis and advice to the Joint Authorities;
- the collection, administration and release of data;
- to facilitate title administration such as the approval of registration of transfers and dealings associated with titles, and Joint Authority considerations of changes to title conditions; and
- to maintain registers of offshore titles.[10]

2.14 The Offshore Petroleum Exploration Acreage Release (acreage release) is the key component of the Australian Government's strategy to encourage and facilitate the exploration and production of offshore oil and gas in Commonwealth waters. Acreage[11] is released regularly to provide new investment opportunities, and to provide industry the ability to plan ongoing investment in Australia's offshore oil and gas sector.[12]

2.15 The responsible Commonwealth Minister (currently the Minister for Resources and Northern Australia), the Department of Industry, Innovation and Science, and Geoscience Australia undertake a 10–12 month consideration process to select areas for acreage release. This process is made up of three key components: the nomination of an area by industry, state/Northern Territory governments, or Geoscience Australia; the consideration of nominated areas; and a consultation process. The consultation process considers a range of factors including the

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9 Department of Industry, Innovation and Science, *Submission 4*, p. 12.

10 Department of Industry, Innovation and Science, *Submission 4*, p. 12.

11 'Acreage' refers to vacant offshore areas in Commonwealth waters for which companies can place a competitive bid.

12 For more information on acreage release see http://www.petroleum-acreage.gov.au/. See also Department of Industry, Innovation and Science, *Submission 4*, pp. 15–16.

prospectivity of the area; existence of title; and the proximity to sensitive marine zones.[13]

2.16 Once areas have been shortlisted, the Department of Industry, Innovation and Science undertakes targeted consultation with Commonwealth, state and Northern Territory agencies responsible for managing the marine environment. In addition, consultation is undertaken with industry bodies whose members have access rights such as fishing licences. The department works closely with the Department of the Environment and Energy which provides comprehensive comments in relation to the environmental considerations of each release area. This includes considerations such as whether the area includes Commonwealth Marine Reserves.[14]

2.17 The Department of Industry, Innovation and Science submitted that the targeted 'consultation assesses factors such as such as maritime boundaries, environmental and fisheries impacts, defence and communications requirements, maritime safety and native title interests'. The outcomes of this consultation may lead to the development of special conditions which must be met in the event that title is awarded for the area.[15]

2.18 Following targeted consultation, the Department of Industry, Innovation and Science publicly makes available the proposed areas for the following year's acreage release. In recognition of the increased community interest in the acreage release process, the department also made the proposed areas for the 2016 acreage release publicly available on its consultation hub. This provided the public with an opportunity to provide comment on proposed areas.[16]

2.19 Following release, investors are invited to make competitive work program bids or cash-bids.[17] These bids are assessed by NOPTA to determine compliance with

13 Department of Industry, Innovation and Science, *Submission 4*, p. 15.

14 Department of Industry, Innovation and Science, *Submission 4*, p. 15.

15 Department of Industry, Innovation and Science, *Submission 4*, p. 15.

16 Department of Industry, Innovation and Science, *Submission 4*, p. 16.

17 Work program bidding allocates exploration acreage to the applicant who is proposing the most amount of work to explore the petroleum potential of a release area, subject to having the technical and financial competence to meet their work commitments. Under a competitive cash bidding system, applicants offer cash bids for the right to explore with exploration permits being awarded to the highest cash bidder. Permit holders have the exclusive right to apply for production licence if a resource is discovered. Cash bidding is used to allocate offshore petroleum acreage in mature areas and in areas containing known petroleum accumulations. The work program bidding system has been maintained for all other areas. See Department of Resources, Energy and Tourism, 'Competitive Cash-Bidding Fact Sheet', http://www.industry.gov.au/resource/Documents/upstream-petroleum/Cash-Bidding-Fact-Sheet.pdf

the OPGGS Act, and other relevant guidelines. NOPTA then provides advice to the Joint Authority which makes a decision as to which bid to accept.[18]

2.20 In making a bid, applicants are required to provide evidence of both financial and technical capability, and comprehensive details of proposed exploratory activity to be carried out. Following an assessment of bids, NOPTA acting on behalf of the Joint Authority, executes the decision to make an offer to the successful bidder. If the offer is successful, NOPTA on behalf of the Joint Authority will grant an exploration title, and publish a notification in the Australian Government Gazette.[19]

2.21 The Department of Industry, Innovation and Science stated that it is important to note that the granting of an exploration title authorises the holder to undertake oil and gas exploration activity subject to the OPGGS Act and its associated regulations. This includes a requirement that the titleholder apply to NOPSEMA for approval prior to undertaking any exploration activity.[20]

National Offshore Petroleum Safety and Environmental Management Authority

2.22 NOPSEMA is the independent statutory authority established under the OPGGS Act responsible for the regulation of 'health and safety, well integrity and environmental management for offshore oil and gas operations in Commonwealth waters and in coastal waters where regulatory powers and functions have been conferred'.[21]

2.23 In its submission to the committee NOPSEMA stated that the authority's 'vision is for safe and environmentally responsible Australian offshore petroleum and greenhouse gas storage industries'. It further stated that its 'mission is to independently and professionally regulate offshore safety, integrity and environmental management'.[22]

2.24 NOPSEMA's legislated functions are specified under section 646 of the OPGGS Act. They are summarised as follows:

- to promote the occupational health and safety of persons engaged in offshore petroleum operations;
- to develop and implement effective monitoring and enforcement strategies to ensure compliance with the OPGGS Act and associated regulations;
- to investigate accidents, occurrences and circumstances that affect occupational health and safety, or that relate to deficiencies in environmental

18 Department of Industry, Innovation and Science, *Submission 4*, p. 16.

19 Department of Industry, Innovation and Science, *Submission 4*, p. 16.

20 Department of Industry, Innovation and Science, *Submission 4*, p. 16.

21 NOPSEMA, *Submission 7*, p. 4

22 NOPSEMA, *Submission 7*, p. 4

management or the structural integrity of facilities, wells and well-related equipment;

- to advise on matters related to offshore health and safety, environmental management and the structural integrity of facilities, wells, and well-related equipment;
- to make reports on investigations to the responsible Commonwealth minister and each responsible state/Northern Territory minister;
- to provide support to the responsible Commonwealth minister through the provision of information, reports, analysis and recommendations; and
- to co-operate with other Commonwealth and state/Northern Territory agencies and authorities which have responsibility for regulated operations.[23]

2.25 The OPGGS Act requires that all offshore operations be carried out in accordance with 'good oilfield practice' which is defined as 'all those things that are generally accepted as good and safe in the carrying out of exploration for petroleum and petroleum recovery operations'.[24] Further, the Act also requires that offshore operations must not interfere with a range of activities including navigation, fishing, conservation, native title rights, or any other lawful oil or gas exploration activities.[25]

2.26 In the event of an escape of petroleum, titleholders are required under the Act to undertake a range of activities including controlling the spill, cleanup activities, recovery, and environmental monitoring.[26]

2.27 The OPGGS Act also provides NOPSEMA (or the responsible Commonwealth minister) with the authority to give written directions to titleholders on any aspect of petroleum exploration and production. This includes the authority to provide remedial directions to titleholders requiring the restoration of the environment, the removal or closure of well and well-equipment, the conservation and protection of natural resources and the rehabilitation of damaged seabed or subsoil.[27]

23 *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, s. 646. See also NOPSEMA, *Submission 7*, p. 7.

24 *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, s. 569. See also NOPSEMA, *Submission 7*, p. 8.

25 *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, s. 280. See also NOPSEMA, *Submission 7*, p. 8.

26 NOPSEMA, *Submission 7*, p. 8.

27 NOPSEMA, *Submission 7*, p. 8.

2.28 As the independent regulator, NOPSEMA is not involved in policy decisions such as the selection or release of areas for exploration and development, or the granting of petroleum titles. Rather, NOPSEMA makes 'merits based decisions on specific activities and their potential interactions with the environment in which they are proposed to occur'. NOPSEMA stated that:

> Decisions focus exclusively on the technical and scientific merits of risk management plans and are independent of economic, commercial and political factors.[28]

Approvals process

2.29 The Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Environment Regulations) require titleholders to prepare and submit an Environment Plan for activities proposed in Commonwealth Waters, to NOPSEMA for assessment and approval. The Environment Regulations set out the criteria for acceptance, and the content requirements for Environment Plans. The object of the Environment Regulations is to ensure that

> …oil and gas and greenhouse gas activities are carried out in a manner that is consistent with the principles of ecologically sustainable development and in a manner by which all environmental impacts and risks of the activity will be reduced to as low as reasonably practicable and acceptable levels.[29]

2.30 Once an Environment Plan is submitted to NOPSEMA, it is assessed against the criteria for acceptance contained in the Environment Regulations. If it is found not to meet these criteria, titleholders are given the opportunity to modify and resubmit the plan. NOPSEMA typically only allows titleholders two opportunities to modify and resubmit a plan before making a decision to accept or reject it.[30]

2.31 An Environment Plan is deemed to be in operation from the date it is accepted by NOPSEMA, and the titleholder is required to provide a summary for publication on the NOPSEMA website within 10 days. If an Environment Plan is rejected by NOPSEMA, the titleholder may choose to submit another Environment Plan for the same activity, and NOPSEMA will commence a new assessment.[31] NOPSEMA noted that its assessment process is iterative and that more than 90 per cent of Environment Plans have at least one interim decision before a final decision to accept or reject a

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28 NOPSEMA, *Submission 7*, p. 4.

29 Department of Industry, Innovation and Science, *Submission 4*, p. 21.

30 NOPSEMA, *Assessment Process*, https://www.nopsema.gov.au/environmental-management/assessment-process/, (accessed 15 February 2017).

31 NOPSEMA, *Assessment Process*, https://www.nopsema.gov.au/environmental-management/assessment-process/, (accessed 15 February 2017).

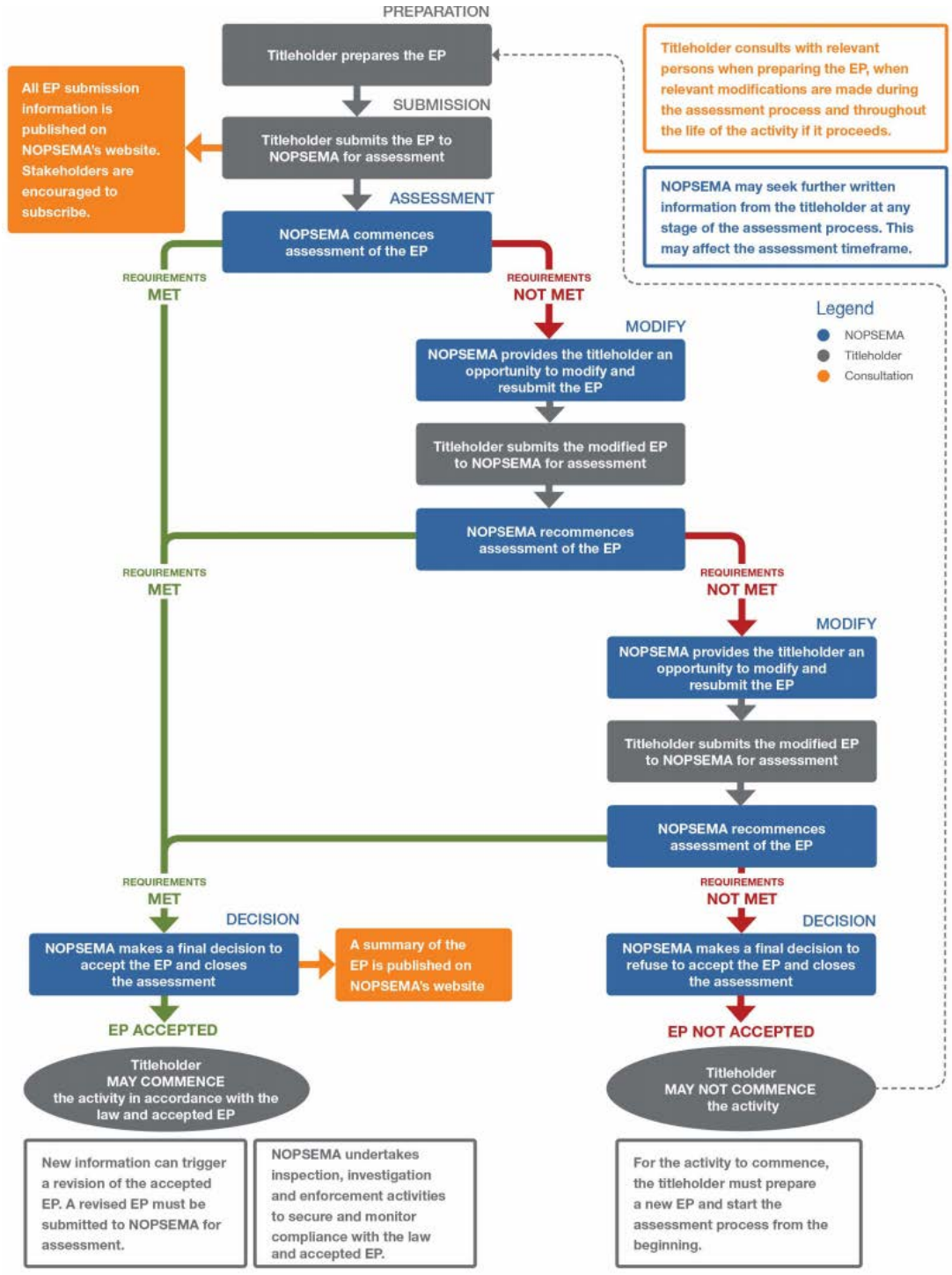
plan is made. Interim decisions can include requests for further information, or as noted above, an opportunity to modify and resubmit a plan.[32]

2.32 As an independent statutory authority, NOPSEMA's decisions are based only upon the requirements of the Environment Regulations, and the scientific and technical merits of proposed risk management strategies and measures. NOPSEMA submitted that with the exception of potential impacts and risks to socioeconomic aspects of the immediate environment, NOPSEMA does not consider economic, commercial, or political factors when making a decision.[33] Figure 2.2 shows the assessment process for environment plans.

32 NOPSEMA, *Submission 7*, p. 13.

33 NOPSEMA, *Submission 7*, p. 13.

Figure 2.2 – Environment Plan approval process



Source: NOPSEMA, https://www.nopsema.gov.au/environmental-management/assessment-process/environment-plans/.

Assessment criteria

2.33 NOPSEMA submitted that during an assessment it has regard to: the compliance record of the titleholder where it relates to matters contained in the Environment Plan, all relevant information including correspondence from external stakeholders; all policies, guidelines and management plans related to matters protected under Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); and reputable, publicly available scientific and academic research relevant to the assessment.[34]

2.34 In order to be assessed as meeting regulatory requirements, titleholders must demonstrate that impacts and risks associated with oil and gas activities are reduced to As Low As Reasonably Practicable (ALARP), and that they are consistent with relevant Commonwealth Marine Reserve management plans where applicable.[35] The assessment and approval process also explicitly takes into consideration any potential impacts on matters protected under Part 3 of the EPBC Act. These include:

- world heritage properties;
- national heritage places;
- wetlands of national importance;
- listed threatened species and ecological communities;
- listed migratory species; and
- the Commonwealth marine area.[36]

2.35 NOPSEMA submitted that the Environment Regulations intend to ensure that any petroleum activity is carried out in accordance with the principles of ecologically sustainable development as defined under the EPBC Act. One of these principles, commonly known as 'the precautionary principle' states that:

> …if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.[37]

2.36 NOPSEMA stated that by implementing control measures that reduce or eliminate uncertainty, titleholders can demonstrate that impacts and risks will be of an acceptable level and ALARP.[38]

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34 NOPSEMA, *Submission 7*, p. 12.

35 Department of Industry, Innovation and Science, *Submission 4*, p. 21.

36 NOPSEMA, *Submission 7*, p. 14.

37 NOPSEMA, *Submission 7*, p. 24.

38 NOPSEMA, *Submission 7*, p. 24.

2.37 In preparing an Environment Plan, titleholders must also comply with rigorous consultation requirements. Titleholders must 'consult with relevant persons including a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the Environment Plan, or any other person or organisation that the titleholder considers relevant'. Relevant persons can include government agencies, community groups, industry bodies and operators, non-government and conservation groups.[39]

2.38 Titleholders are also required to provide 'sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person and a reasonable period for the consultation'.[40]

2.39 Under the Environment Regulations, NOPSEMA cannot accept an Environment Plan that does not demonstrate compliance with consultation requirements.[41]

2.40 The Environment Plan must also include a comprehensive Oil Pollution Emergency Plan (OPEP) which provides details of response and monitoring arrangements in the event of an oil spill. The OPEP must include information on control measures, response capability, and monitoring capability. It is intended to ensure that the titleholder has demonstrated its ability to quickly and effectively respond in the event of an oil pollution emergency.[42]

2.41 The OPGGS Act requires titleholders to demonstrate financial assurance sufficient to meet the costs, expenses and liabilities arising from carrying out oil and gas activities. This assurance is intended to ensure that the titleholder will have the capacity to meet any costs, expenses and liabilities associated with its legislative obligations under the OPGGS Act. This includes obligations to control, clean-up and monitor the effects of an oil spill, and in the event of failing to comply, the costs of reimbursing NOPSEMA or the responsible Commonwealth Minister.[43]

2.42 The Environment Regulations provide NOPSEMA with the ability to assess compliance with the requirement of financial assurance as a condition precedent to the acceptance of an Environment Plan. NOPSEMA must not accept an Environment Plan if it is not reasonably satisfied that financial assurance is sufficient or in an acceptable form. If financial assurance is not maintained during the course of oil and gas

39 Department of Industry, Innovation and Science, *Submission 4*, p. 21.

40 Department of Industry, Innovation and Science, *Submission 4*, p. 21.

41 Department of Industry, Innovation and Science, *Submission 4*, p. 21.

42 Department of Industry, Innovation and Science, *Submission 4*, p. 25.

43 Department of Industry, Innovation and Science, *Submission 4*, pp. 25–26.

activities, NOPSEMA has grounds to withdraw its acceptance of an Environment Plan.[44]

Endorsement of approvals process

2.43 In February 2014, the Commonwealth Minister for the Environment endorsed NOPSEMA's environmental authorisation program (the Program) as being 'appropriate to ensure that offshore oil and gas activities do not have unacceptable impacts on matters protected under the EPBC Act'.[45]

2.44 This endorsement had the effect of making NOPSEMA the sole environment regulator for oil and gas activities in Commonwealth waters. As a consequence, activities which are assessed and approved by NOPSEMA no longer require assessment and approval by the Department of the Environment under the EPBC Act. NOPSEMA stated that this streamlining reduced the duplication of environmental regulation whilst still maintaining strong environmental safeguards.[46]

2.45 In 2015, following the first 12 months of operation of the Program, NOPSEMA was subject to an independent review of its authorisation process. The review found that NOPSEMA was delivering the levels of environmental protection required under the EPBC Act.[47]

Objective based regulation

2.46 The OPGGS Act, and the Environment Regulations operate to provide an 'objective based' environmental management regime administered by NOPSEMA. NOPSEMA submitted that the Environment Regulations were:

> …developed to provide an objective-based regime within which titleholders are free to adopt environmental management practices and technologies best suited to individual company circumstances, activities and locations, subject to demonstrating that appropriate environmental performance outcomes and environmental performance standards will be met.[48]

2.47 The Environment Regulations 'do not prescribe specific processes, standards or procedures, but rather, regulates through the achievement of environmental objectives'. As such, proponents are able to determine how these objectives are to be achieved within the parameters of the Environment Regulations.[49]

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44 Department of Industry, Innovation and Science, *Submission 4*, p. 26.

45 NOPSEMA, *Submission 7*, p. 14.

46 NOPSEMA, *Submission 7*, p. 14.

47 NOPSEMA, *Submission 7*, p. 14.

48 NOPSEMA, *Submission 7*, Attachment 3, p. 6.

49 NOPSEMA, *Submission 7*, Attachment 4, p. 17.

2.48 Objective based environmental regulatory systems are considered to be best practice for high hazard industries such as offshore petroleum operations. Such systems require project developers to:

> …consider and identify the acceptable outcomes for all environmental matters, including matters of national environmental significance. The activity approved must also include a clear demonstration of how those outcomes will be delivered. This is in contrast to requirements under a prescriptive regulatory regime, where the project developers only consider those matters specifically identified by the regulation and meet the minimum standard of protection the regulator prescribes.[50]

2.49 The global adoption of objective based regulatory frameworks for the offshore oil and gas sector stems largely from the worldwide reassessment of regulation which occurred following the 1988 Piper Alpha disaster in the United Kingdom's North Sea. The large explosion which destroyed the Piper Alpha oil and gas platform and killed 167 people, led to the UK government conducting an inquiry into the factors which caused the disaster. The UK Committee of Inquiry into the Piper Alpha incident recommended moving from prescriptive regulation to an objective based regime.[51]

2.50 Objective based regulatory regimes are based on the principle that while the legislation provides broad safety and environmental objectives, titleholders must develop and implement the measures to achieve these goals. The Department of Industry, Innovation and Science explained that this 'places the onus and duty of care for environmental protection on project developers seeking to undertake offshore activities'.[52]

2.51 The Department of Industry, Innovation and Science explained that such an approach encourages the:

> …continuous improvement to achieve appropriate environmental outcomes and ecologically sustainable development. It ensures flexibility in operational matters to meet the unique nature of different projects, and avoids a 'one size fits all' approach to regulation, allowing industry to determine the most effective and efficient way to operate.[53]

BP's proposed venture – process and status

2.52 The following provides an overview of the proposal for petroleum exploration and production in the Great Australian Bight put forward by BP Development Australia Pty Ltd (BP).

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50 Department of Industry, Innovation and Science, *Submission 4*, p. 19.

51 Department of Industry, Innovation and Science, *Submission 4*, p. 19.

52 Department of Industry, Innovation and Science, *Submission 4*, p. 19.

53 Department of Industry, Innovation and Science, *Submission 4*, p. 19.

2.53 In June 2009, areas of the Great Australian Bight were released under the 2009 Offshore Petroleum Exploration Acreage Release. In April 2010, BP Exploration (Alpha) Ltd[54] lodged a bid for four release areas. On 14 January 2011, following an assessment of BP's technical and financial competence to undertake the proposed work program, the Commonwealth-South Australia Offshore Petroleum Joint Authority awarded four petroleum exploration titles (EPP37–40) to BP.[55]

2.54 The Joint Authority, in recognition of the sensitive environmental and agricultural elements critical to the rural economy of the Great Australian Bight region, and in light of the Deepwater Horizon incident, imposed additional special conditions on all four titles. These special conditions included the requirement that:

> All well casing and cement design is to be undertaken by an appropriately qualified and experienced engineer, who, along with other such personnel associated with permit activities, will make themselves available for peer review at the discretion, and to the satisfaction of NOPSEMA.[56]

2.55 They also included the requirement that:

> Prior to the commencement of drilling, the permittee is required to lodge with NOPSEMA:
>
> - An approved well design integrity monitoring plan designed to assure well integrity within each well, which must be agreed by NOPSEMA and will include quarterly compliance reporting.
> - Independent certification by the original provider, prior to installation, that each Blowout Preventer to be used has been satisfactorily tested to design pressures.[57]

2.56 Prior to the commencement of drilling, BP would also have to:

> …satisfy and have approved by NOPSEMA, the hydrocarbon spill mitigation technologies and risk mitigation processes that it will deploy throughout the drill and maintain for the active life of the well.[58]

2.57 There were also conditions which applied during exploration. These included the requirement that:

> As soon as practicable after the completion of drilling, and prior to the commencement of any other exploration activity, the permittee will conduct and report to NOPTA, for review by NOPSEMA, on Cement Bond Logging to demonstrate effectiveness of cement jobs behind well casing.[59]

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54 The titles were later transferred to BP Developments Australia Pty Ltd in 2012.

55 Department of Industry, Innovation and Science, *Submission 4*, pp. 16–17.

56 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

57 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

58 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

59 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

2.58 Finally, BP would be required to:

> …undertake an annual Environment, Health and Safety Management System self-assessment each year, as per requirements determined by NOPSEMA, in relation to the effectiveness of system elements, including the Management of Change processes and procedures.[60]

2.59 Throughout its exploratory activities, BP would be required to satisfy regulators that it was not only compliant with special conditions, but also standard title conditions, and all other legislative requirements.[61]

2.60 On 1 October 2015, BP submitted an Environment Plan to NOPSEMA proposing exploration drilling in a joint venture with Statoil Australia Theta B.V. The proposed drilling would have occurred at water depths between 1,000 and 2,500 metres approximately 395 km west of Port Lincoln, and 340 km south of Ceduna in South Australia.[62]

2.61 On 16 November 2015, NOPSEMA notified BP that it was not satisfied that the Environment Plan met the approval criteria of the Environment Regulations. BP was provided with an opportunity to change and resubmit its Environment Plan accordingly. On 15 March 2016, BP resubmitted its modified plan to NOPSEMA for approval.[63]

2.62 On 16 May 2016, after a complex assessment[64] NOPSEMA again notified BP that it was not reasonably satisfied with the Environment Plan, and again BP was given the opportunity for modification and resubmission. On 12 July 2016, BP sought an extension of time for the modification and resubmission of its Environment Plan.[65]

2.63 On 18 August 2016, BP sought, and was granted an extension until 31 December 2016. On 19 August 2016, BP submitted a new Environment Plan for two exploration wells advising that these two exploration wells were a subset of the activity covered by the original plan which would need to be amended accordingly to remove them from its scope.[66]

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60 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

61 Department of Industry, Innovation and Science, *Submission 4*, p. 17.

62 NOPSEMA, *Submission 7*, p. 16.

63 NOPSEMA, *Submission 7*, p. 16.

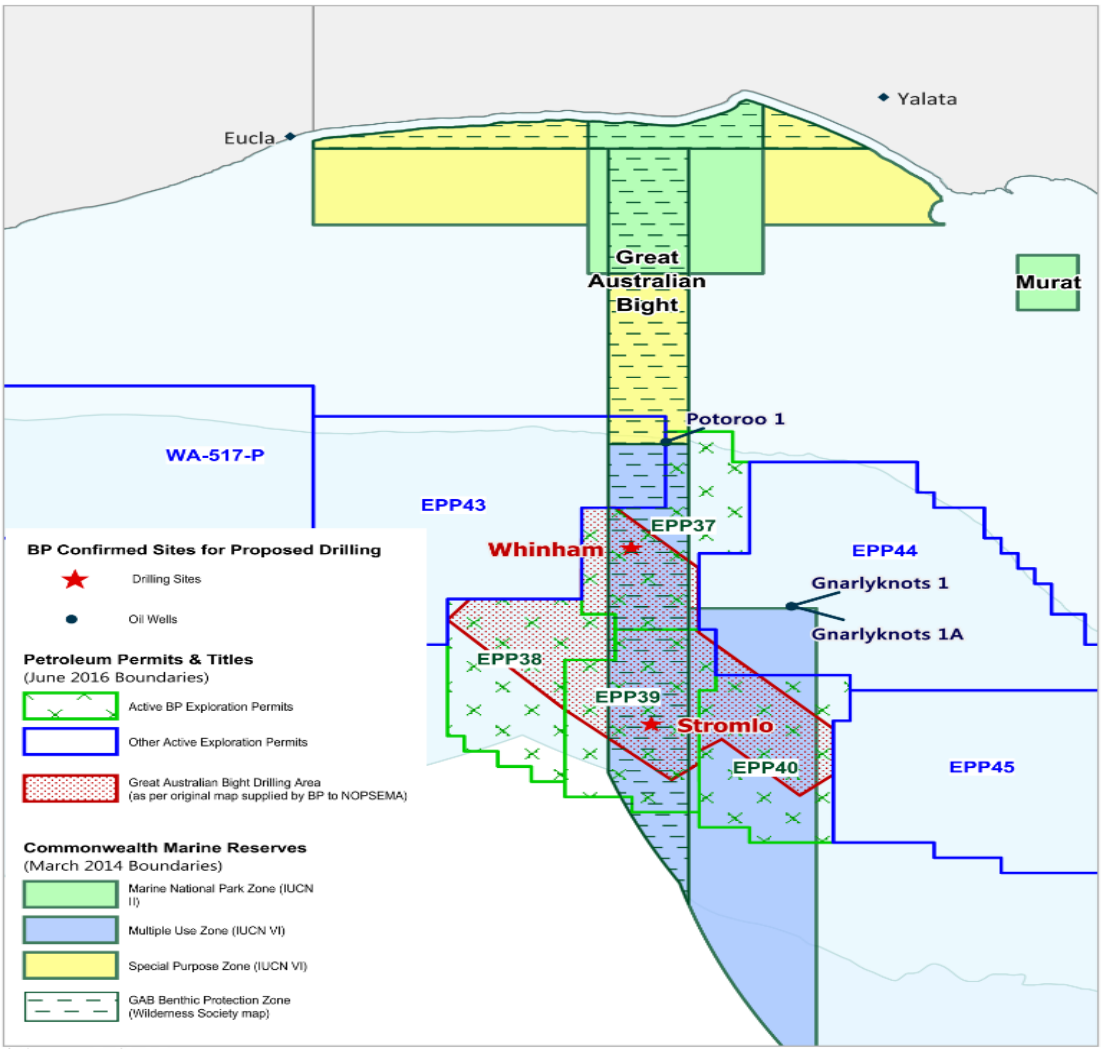
64 NOPSEMA outlined on their website that they were unable to make a decision within the 30 day timeframe as it considered the Environment Plan required a complex assessment.

65 NOPSEMA, *Great Australian Bight Exploration Drilling Program*, https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/details/340, (accessed 15 February 2017).

66 NOPSEMA, *Great Australian Bight Exploration Drilling Program*, https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/details/340, (accessed 15 February 2017).

2.64 The new proposal stated that the two wells (Stromlo-1 and Whinham-1) would be drilled by a semi-submersible mobile offshore drilling unit. Stromlo-1 was located approximately 600km west of Port Lincoln and 400km southwest of Ceduna in a water depth of approximately 2,250m. Whinham-1 was located approximately 600km west of Port Lincoln and 350km southwest of Ceduna in a water depth of approximately 1,150m (see Figure 2.3). The drilling program was scheduled to commence in the fourth quarter of 2016 to the first quarter of 2017. It was anticipated that each well would take approximately 75 days to drill. NOPSEMA was due to make a decision on this new Environment Plan on 19 September 2016.[67]

Figure 2.3 – Map showing proposed drilling sites for Stromlo-1 and Whinham-1



Source: Australian Parliamentary Library.

67 NOPSEMA, *Great Australian Bight Exploration Drilling Program*, https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/details/375, (accessed 15 February 2017).

2.65 On 15 September 2016, BP released its own oil spill modelling for the proposed exploratory drilling program. This modelling was based on a 'worst credible case' oil spill scenario. BP also released its oil spill response planning strategic review.[68]

2.66 On 11 October 2016, BP announced that it would not be progressing with its exploration drilling program in the Great Australian Bight 'citing commercial reasons and a change in their global investment strategy'.[69] On 20 December 2016, BP withdrew both Environment Plans.[70]

2.67 In an official statement, BP Developments Australia's Managing Director for Exploration and Production, Ms Claire Fitzpatrick, commented:

> The decision follows the review and refresh of BP's upstream strategy earlier this year, which included focusing exploration on opportunities likely to create value in the near to medium term, primarily building on BP's significant existing upstream positions.
>
> BP has determined that the GAB project will not be able to compete for capital investment with other upstream opportunities in its global portfolio in the foreseeable future.
>
> We have looked long and hard at our exploration plans for the Great Australian Bight but, in the current external environment, we will only pursue frontier exploration opportunities if they are competitive and aligned to our strategic goals. After extensive and careful consideration, this has proven not to be the case for our project to explore in the Bight.[71]

2.68 NOPSEMA noted that prior to BP withdrawing the Environment Plan, it had requested further information from BP on the following key issues:

- potential oil spill scenarios and arrangements in place to ensure that control measures proposed were appropriate to manage potential impacts and risks;
- plans for monitoring of the environment in the event of an oil spill;
- the values and sensitivities of the surrounding environment including but not limited to fisheries, Commonwealth Marine Reserves and matters protected under the EPBC Act, the potential for impacts and risks to these features and how these were proposed to be managed;

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68 Available with The Wilderness Society submission, *Submission 79*. See also Chapter 3.

69 Department of Industry, Innovation and Science, *Submission 72*, p. 3.

70 NOPSEMA, *Great Australian Bight Exploration Drilling Program*, https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/details/340, (accessed 15 February 2017).

71 BP Developments Australia, Press Releases, *BP decides not to proceed with Great Australian Bite exploration*, 11 October 2016, http://www.bp.com/en/global/corporate/press/press-releases/bp-decides-not-to-proceed-with-great-australian-bight-exploration.html, (accessed 27 October 2016).

- consultation with relevant persons, and demonstration that this consultation met regulatory requirements;
- management of potential impacts and risks from planned emissions and discharges from the activity; and
- the implementation strategy for the activity, and demonstration that the environmental management system in place for the activity would be effective in continuously identifying and reducing environmental impacts and risks to levels that are acceptable and as low as reasonably practicable.[72]

2.69 Further information on these key areas was not provided prior to the withdrawal of the Environment Plans, and NOPSEMA stated that no further assessment of the submissions would occur.[73]

Title default

2.70 The Department of Industry, Innovation and Science stated that if 'exploration wells are not drilled by 30 June 2017, the title will be in default on its work commitments, and may be cancelled at any time'. It noted that prior to default, titleholders are able to seek investors to take-over their commitments which could allow the continuation of the permits.[74]

2.71 In the event that the titles fall into default and are subsequently cancelled, titleholders are able to 'make good on their commitments by diverting the committed expenditure to exploration of other areas—via a Good Standing Agreement'.[75]

2.72 The Department of Industry, Innovation and Science explained that:

> The Good Standing Agreement is a policy mechanism available to companies that wish to maintain 'good standing' with government to 'make good' their default. If a company chooses not to enter into a Good Standing Agreement, its default will reflect poorly on past performance and may affect its ability to secure new exploration permits.[76]

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72 NOPSEMA, *BP withdraws Environment Plans for drilling in the Great Australian Bight*, 21 December 2016, https://www.nopsema.gov.au/news-and-media/nopsemas-assessment-of-the-great-australian-bight-drilling-program/bp-withdraws-environment-plans-for-drilling-in-the-great-australian-bight/, (accessed 15 February 2017).

73 NOPSEMA, *BP withdraws Environment Plans for drilling in the Great Australian Bight*, 21 December 2016, https://www.nopsema.gov.au/news-and-media/nopsemas-assessment-of-the-great-australian-bight-drilling-program/bp-withdraws-environment-plans-for-drilling-in-the-great-australian-bight/, (accessed 15 February 2017).

74 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

75 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

76 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

2.73 If permits cease to exist, they revert to vacant acreage and may be nominated in future acreage releases to be considered for new petroleum exploration permits.[77]

2.74 According to the Department of Industry, Innovation and Science 'as of 20 October 2016, BP and its joint venture partner had not made an application to the Commonwealth-South Australian Joint Authority regarding the future of the permits'.[78]

77 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

78 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

Chapter 3

Regulatory issues

3.1 This chapter examines concerns raised by submitters regarding the transparency and independence of the regulatory regime, the adequacy of community consultation during project development, and the provision of information to interested stakeholders.

Ministerial oversight and decision-making expertise

3.2 As previously noted, prior to 2014 all proposed offshore oil and gas projects in Commonwealth waters were required to be referred to the Minister for the Environment for assessment and approval under the EPBC Act if they were likely to have a significant impact on a Matter of National Environmental Significance (MNES). Following the development of the 'one-stop-shop' model for the approval of offshore oil and gas projects, this responsibility was transferred to the National Offshore Petroleum Safety and Environment Authority (NOPSEMA).[1]

3.3 The industry supported the oil and gas regulatory framework with Chevron stating that it welcomed NOPSEMA's regulatory regime as 'it adds independence and rigour to the process'.[2]

3.4 Several submitters raised issues with the removal of departmental and ministerial oversight of the approval process. The International Fund for Animal Welfare (IFAW) expressed concern that 'there is no longer any ministerial accountability for such decisions now that sole assessment and approval powers have been given to an unaccountable arms-length body'. Further, it stated that 'it is not appropriate that decisions about proposals that could have catastrophic impacts…are taken without proper political accountability'.[3]

3.5 The Humane Society International (HSI) also stated that it has 'consistently opposed the devolution of responsibility for the environmental assessment and approval of offshore oil drilling projects in Commonwealth waters'. It considered that 'ministerial accountability and in particular confirmation of the role of the Federal Environment Minister with regard to threatened species must be restored.'[4] Similarly, the Australian Marine Conservation Society (AMCS) stated that it:

> ...is concerned about the lack of ministerial accountability regarding threatened species impacts and other impacts and the lack of full public

1 See Chapter 2.

2 Dr David Moffat, Chevron, *Committee Hansard*, 16 November 2016, p. 43.

3 International Fund for Animal Welfare, *Submission 29*, p. 8.

4 Humane Society International, *Submission 3*, p. 3.

> access and consultation in the approvals process. NOPSEMA has been the sole assessor and approver of offshore oil and gas activities since March 2014, [and] there is no longer any ministerial accountability for such decisions and public access and transparency has been lost in the system.[5]

3.6 Dr David Ellis, an environmental consultant, expressed concern that 'with no Commonwealth Government ministerial oversight and the establishment of a relatively new regulator NOPSEMA, the Australian public and international community are yet to see how this regulatory body begins to attempt to seriously and scientifically assess the potential impacts of BP's proposed project'.[6]

3.7 Mr Lyndon Schneider, The Wilderness Society, commented that the US National Commission which investigated the Deepwater Horizon disaster 'spoke…damningly about the poor level of political oversight and a failure by, if you like, the political class to properly regulate and manage the risks around this industry. They talked a lot about a national interest'. Mr Schneider went on to note that:

> A national interest in this instance involves both the national interest around the use of resources, which is the more traditional one, but a national interest also involves the idea of making decisions that are to the benefit of the wider community and managing risk. I think an argument that would say, 'Leave this to the experts,' when we are dealing with Commonwealth of Australia waters, we are dealing with a resource that is owned by the Australian people, and we are dealing with an environment that is fragile—of course there needs to be political oversight. The needs to be very direct political oversight. These decisions are being made around resources owned by the Australian community.[7]

3.8 Mr Stuart Smith, Chief Executive Office, NOPSEMA, in acknowledging concerns raised, stated that:

> The idea of having a minister making the decision on environmental factors has some merit, but I also recognise that that sort of approach brings with it the possibility that factors other than economic conditions would be taken into account, and I do not think that is appropriate for determining environmental impacts and the subsequent decisions arising from that. I think an independent statutory authority is the appropriate way to go. Having said that, I do see there being a role for elected officials in determining whether an activity should proceed, and there is in the current process. The decision to award acreage, for instance, is a decision made by the elected officials in the federal government and the state and territory governments, and I think that is quite appropriate. But, when it comes to decisions around the environmental impacts and how those impacts should

5 Australian Marine Conservation Society, *Submission 19*, p. 6.

6 Dr David Ellis, *Submission 30*, p. 75.

7 Mr Lyndon Schneiders, The Wilderness Society, *Committee Hansard*, 28 April 2016, p. 36.

> be managed, I think those decisions should be made by an independent statutory authority such as NOPSEMA.[8]

3.9 In addition to concerns regarding the lack of ministerial and departmental oversight, some submitters were concerned that the streamlining of the approvals process could 'lead to a lowering of environmental standards' and a failure to meet the standards of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). [9] Some submitters also raised concerns that NOPSEMA staff lack the expertise to make assessments which support the objectives of the EPBC Act. For example, The Wilderness Society stated that the 'devolution of environmental decision-making powers to NOPSEMA is highly inappropriate' and that there is not the appropriate EPBC Act expertise within NOPSEMA.[10] It particularly noted that it had been advised by Mr Stuart Smith, Chief Executive Officer of NOPSEMA that as at December 2015 there had not been a transfer of staff experienced in making EPBC Act assessments from the Department of Environment to NOPSEMA.[11]

3.10 However, Mr Cameron Grebe, Head of Division, Environment, NOPSEMA, told the committee that NOPSEMA employs appropriately qualified staff including:

> …28 environment specialists in the environment division, and many of them have been there since we started in 2012—so for quite some time. They cover a range of expertise. There are eight PhDs covering marine science, eco-toxicology and cetacean biology—whales, dolphins and so on—and we have arrangements in place and we do seek external advice if we do not have the skills and experience necessary in-house.[12]

3.11 NOPSEMA submitted that its staff 'includes former Department of the Environment employees, regulatory experts and other Australian and international technical scientific experts with extensive knowledge of the OPGGS Act and the EPBC Act regimes' which ensures that 'it has the capacity to implement the necessary environmental safeguards'.[13] NOPSEMA also noted that it has 'systems in place to ensure that regulatory staff obtain and maintain relevant competencies and that these competencies are demonstrated prior to staff undertaking lead regulatory roles'.[14]

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8 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 16 November 2016, p. 34.

9 Ms Rachel Walmsley, EDOs Australia, *Committee Hansard*, 28 April 2016, p. 19.

10 The Wilderness Society, *Submission 43*, p. 63.

11 The Wilderness Society, *Submission 43*, p. 62.

12 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 54. See also NOPSEMA, *Submission 7*, p. 5.

13 NOPSEMA, *Submission 7*, p. 15.

14 NOPSEMA, *Submission 7*, p. 5.

3.12 In addition, Mr Smith commented that the 'current arrangements have some substantial strengths, and I think it can be argued that it is actually superior to many other environmental approvals processes'.[15]

NOPSEMA's environmental standards

3.13 Prior to the endorsement of NOPSEMA's environmental authorisation program by the Minister for the Environment in 2014, a number of environmental groups participating in the consultation process[16] expressed their concerns with the streamlined process. HSI stated in its submission to this inquiry that their concerns, initially expressed during that consultation, remain relevant. Specifically that 'the decision to allow NOPSEMA to assess environmental impact has enshrined a less rigorous process for assessment and approval of offshore activities that impact nationally significant matters of environmental significance into law'.[17]

3.14 Similarly, EDOs of Australia provided the committee with its original 2013 submission provided during the consultation process[18] and noted that it remains concerned that the NOPSEMA assessment and approval processes do not equate to the regulatory requirements under the EPBC Act.[19] In particular, it is concerned that the OPGGS Environment Regulations 'do not mirror key components of the EPBC Act and are therefore unlikely to adequately regulate impacts associated with offshore petroleum activities on Matters of National Environmental Significance'.[20]

3.15 The Wilderness Society submitted that NOPSEMA's objective-based regulatory approach is 'an entirely inappropriate framework for the protection of environmental values'. It stated that 'even if risks and impacts can be managed to ALARP ("as low as reasonably practical") levels, this will not necessarily represent an appropriate protection of MNES as defined under the EPBC Act'.[21] It also submitted that the OPGGS Regulations are 'inadequate to enable an assessment of cumulative impacts and risks' arising from multiple offshore petroleum ventures in the Great Australian Bight.[22]

3.16 The Wilderness Society further criticised NOPSEMA's regulatory approach by stating that the OPGGS Regulations 'do not provide an appropriate range of assessment process options of complex and controversial' offshore proposals. In

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15 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 15.

16 For more information on this consultation process see Department of Industry, Innovation and Science, *Submission 4*, p. 23.

17 Humane Society International, *Submission 74*, p. 1.

18 See EDOs of Australia, *Submission 14*, Appendix1.

19 EDOs of Australia, *Submission 14*, p. 2.

20 EDOs of Australia, *Submission 14*, p. 2.

21 The Wilderness Society, *Submission 43*, p. 62.

22 The Wilderness Society, *Submission 43*, p. 63.

particular, it noted that under the EPBC Act, the Minister for the Environment 'could decide to assess projects under a Public Environment Report or Public Inquiry assessment process' however under the OPGGS Regulations, a 'non-transparent process of one-size-fits-all appears to be the only assessment option'.[23]

3.17 In responding to criticisms of its environmental approvals process, NOPSEMA noted that it is subject to a range of governance controls including parliamentary scrutiny, ministerial policy direction and independent statutory review.[24] In particular, it stated that it has been:

> …subject to an independent operational review of its regulatory performance every three years. It has also been subject to a review of its environmental management performance under the endorsed EPBC Act Program after the first 12 months of operating under this arrangement. Both reviews were most recently completed in 2015 and the reports from these reviews are public documents.[25]

3.18 The 2015 Operational Review found that NOPSEMA is delivering the levels of environmental protection required under the EPBC Act, and that it will continue to do so into the future. Though it did not make recommendations, it identified a range of opportunities to improve communication and information sharing between NOPSEMA and the Department of the Environment and Energy. NOPSEMA stated that it has implemented or is implementing a number of measures to facilitate the continuous improvement of the EPBC Act Program.[26]

3.19 NOPSEMA also explained that its environmental and approval processes contain the same essential elements as those of the EPBC Act. The key point of difference being that NOPSEMA is required to evaluate all environmental impacts and risks (including those to matters protected by the EPBC Act), and identify appropriate control measures to manage and monitor those impacts.[27] Mr Smith told the committee that:

> …the environmental regulations we administer do not just focus on matters protected under EPBC Act, the national environmental significance. It is all impacts and risks. If they are not protected and if there are unacceptable impacts or risks to those parts of the environment, they will not proceed, and that includes social and economic features in the environment as well.[28]

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23 The Wilderness Society, *Submission 43*, pp. 62–63.

24 NOPSEMA, *Submission 7*, p. 6. See also Department of Industry, Innovation and Science, *Submission 4*, p. 13.

25 NOPSEMA, *Submission 7*, p. 6. See also Mr James Tregurtha, Department of the Environment and Energy, *Committee Hansard*, 8 February 2017, p. 2.

26 NOPSEMA, *Submission 7*, p. 6.

27 NOPSEMA, *Submission 7*, pp. 14–15.

28 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

3.20 NOPSEMA rejected suggestions[29] that its standards do not enshrine in legislation the same protections offered by the EPBC Act. Mr Grebe told the committee that a range of legislative amendments made in 2014 as part of the streamlining process 'actually enshrined things such as the principles of ecologically sustainable development, the precautionary principle and the protection of matters protected under Part 3 of the EPBC Act into our legislation'.[30] Mr Grebe concluded that:

> The differences that appear in the process…are that, unlike the EPBC Act, the proponent does not get a choice as to whether they need to seek our approval or not. Under the EPBC Act there is a requirement for the proponent to refer if they believe, as it is a self-identification process, that it is likely to have a significant impact on a matter of NES, national environmental significance, as defined under the EPBC Act. Under our system, the simple fact is that they do not get a choice. Every single activity that is defined as a petroleum activity must get our approval before it can proceed.[31]

3.21 In response to suggestions that the approvals process should be amended to require the approval of the Department of the Environment, the South Australian Government submitted that re-introducing overlapping powers for the approval of offshore petroleum activities:

> …would be a retrograde step for the efficiency of objective-based legislation in Australia, as it would inevitably add unnecessary duplicative steps within the approvals process. Indeed, it is the South Australian Government's view that NOPSEMA has the necessary capabilities to be the nation's trusted regulator and approval authority for upstream petroleum operations in Commonwealth waters.[32]

3.22 Likewise, Santos Ltd, as a leading oil and gas producer regularly engaged with NOPSEMA's approvals process, told the committee that it:

> …is of the view that this streamlining has removed unnecessary duplication between two sets of legislation without compromising environmental outcomes. Streamlining does not mean the requirements of the EPBC Act are disregarded, but rather that the Environment Minister has determined that NOPSEMA processes, through the Environment Plan assessment procedure, satisfies the rigorous EPBC Act requirements. The titleholder is still required to demonstrate, within its Environment Plan, how it will address (among other things) the potential impacts and risks to matters of

29 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59. See also Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

30 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

31 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 16 November 2016, p. 34.

32 South Australian Government, *Submission 44*, p. 6.

> national environmental significance, just as it was obliged to do before streamlining.[33]

Adequacy of consultation processes

3.23 The success of a regulatory regime in part, relies on the regulator having the confidence of both stakeholders, and the public. Public consultation is an integral part of many regulatory regimes, including the NOPSEMA approvals process for offshore petroleum ventures. Though there are many models for public consultation—including regulator-led public consultation, and proponent-led public consultation, it is generally intended to improve transparency, increase efficiency, and promote public involvement in policy making.

3.24 As noted earlier, offshore oil and gas proponents are required to identify and consult with relevant persons in the course of preparing an Environment Plan. In relation to the EPBC Act and consultation, the Department of the Environment and Energy noted that:

> When the minister endorsed the NOPSEMA program the consultation requirements as mandated in that program were deemed to be sufficient in order to undertake a strategic assessment in relation to NOPSEMA…basically the requirement is as long as the consultation requirements set out in that document are met then for the purposes of the EPBC Act that would be called compliance.[34]

3.25 A number of submitters were generally critical of the NOPSEMA's proponent-led stakeholder consultation model while others were more specifically critical of the consultation carried about by BP in the course of preparing its Environment Plan. The following sections canvass submitters' concerns.

Consultation—general concerns

3.26 Submitters raised a range of concerns with the level and type of consultation required under NOPSEMA's approvals process. These included concerns that proponent-led consultation is inadequate or inappropriate, and that insufficient information is provided to the public and interested stakeholder groups as well as difficulties of stakeholders in accessing and understanding the system. In this regard, the South Australian Oyster Growers Association (SAOGA) provided the committee with evidence of its interactions with regulatory process.

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33 Santos Ltd, *Submission 16*, p. 7.

34 Mr James Tregurtha, Department of the Environment and Energy, *Committee Hansard*, 8 February 2017, p. 7.

3.27 SAOGA commented that it had been involved BP approval process for two years and that:

> We became very frustrated with the process for a couple of reasons. Firstly, we found the consultation process frustrating from the point of view that we did meet with BP on a number of occasions, however we did not feel that the points that we thought were important to consider were being considered. It took quite a long time to get feedback and information back. The second point was that we also struggled with the NOPSEMA process. We found it difficult to work out how that worked when you were always directed to ask your questions to the drilling party of BP, and they could say, 'No, we're not going to provide that information,' and we kind of had nowhere to go. So we did not really understand how that worked.[35]

3.28 IFAW pointed to concerns about public consultation and submitted that:

> …the new system leaves consultation to be dictated by the proponent oil and gas companies and has no direct mechanism for public consultation, with information supplied under the new system frequently very scant and mostly supplied after a decision has been made and even then only in summary form.[36]

3.29 IFAW also expressed disquiet with the apparent 'limited public access to important information determining decisions'.[37] This sentiment was echoed by the AMCS which stated that:

> The NOPSEMA system abdicates the consultation process to proponent oil and gas companies and has no direct mechanism for public consultation. The system also fails in transparency in that little or no information is provided by NOPSEMA about the decisions it makes i.e. approvals are given or rejected without any reasoning/justification provided to the public. Similarly little information is provided publically prior to decisions being made to facilitate public interest input.[38]

3.30 The Wilderness Society submitted that 'no clear minimum requirements [for consultation] are outlined or properly enforced under the NOPSEMA regulation'. It went on to describe consultation processes as 'deeply flawed'.[39] Similarly, the Conservation Council of South Australia stated that:

> The nature of the consultation process is that NOPSEMA tell BP to do 'sufficient consultation'. So what is defined as sufficient? We are telling the

35 Ms Trudy McGowan, Executive Officer, South Australian Oyster Growers Association, *Committee Hansard*, 16 November 2016, p. 51.

36 International Fund for Animal Welfare, *Submission 29*, p. 8.

37 International Fund for Animal Welfare, *Submission 29*, p. 8.

38 Australian Marine Conservation Society, *Submission 19*, p. 6.

39 The Wilderness Society, *Submission 43*, p. 61.

> Australian public and this Senate committee that we believe this consultation is insufficient.[40]

3.31 The Environmental Defenders Office SA (EDO SA) was concerned that there are limitations on participation placed on both the public and environmental advocacy organisations. EDO SA noted that NOPSEMA's guidelines provide for a broad interpretation of the concept of a 'relevant person' for titleholders, and guidance on how people and organisations may assert their relevance. However, it submitted that 'it is unjust that the titleholder determines the relevancy status of members of the public, as opposed to members of the public having an unfettered right to information as is the case under the EPBC Act'.[41]

3.32 EDO SA stated that it is concerned that by allowing titleholders to determine relevancy, affected people and organisations may not be involved in the consultation process. It submitted that 'any person should be allowed to comment' as this would improve accountability.[42]

3.33 In addition, EDO SA raised concerns that relevant persons are only required to be provided with 'sufficient information', rather than the Environment Plan, to make an assessment of the potential impact on their interests. EDO SA submitted that:

> Given the scale of some offshore projects and possible serious environmental and other impacts, it is clearly in the public interest that full and complete information about such projects is disseminated as occurs with proposals assessed under the EPBC Act.[43]

3.34 NOPSEMA, in responding to concerns regarding the adequacy of consultation requirements, assured the committee that all Environment Plans submitted for assessment and approval 'must demonstrate that appropriate consultation with relevant state, territory and Commonwealth agencies and person or organisations whose functions, interests or activities could be affected by the proposed activity has been undertaken by the titleholder'. This demonstration includes a range of criteria such as the provision of a report of any objections or claims made about adverse impacts, and a statement responding to each objection and claim. The Environment Plan must also include provisions for ongoing consultation with affected persons.[44]

3.35 Mr Grebe told the committee that in contrast under the EPBC Act, there is no specific requirement or prescription about the type or degree of consultation a proponent must engage in, prior to making an application. Mr Grebe further noted that

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40 Ms Kathryn Warhurst, Conservation Council of South Australia, *Committee Hansard*, 28 April 2016, p. 25.

41 EDO (SA), *Submission 9*, pp. 2–3.

42 EDO (SA), *Submission 9*, p. 3.

43 EDO (SA), *Submission 9*, p. 3.

44 NOPSEMA, *Submission 7*, p. 13. See also Chapter 2.

under the NOPSEMA process, 'the regulations set out detailed requirements about who must be consulted with and how that consultation at a principle level should be conducted. That is quite a unique feature of an environmental approvals process'.[45]

Adequacy of BP's stakeholder engagement

3.36 As noted earlier, criticisms of inadequate consultation were both general, and specifically directed against BP. Submitters who were concerned with BP's consultation process raised a number of issues including that BP did not consult with all stakeholders. Concerns were also raised regarding BP's failure to release sufficient information to allow for informed public consultation. In particular, BP was criticised for not releasing its oil spill modelling prior to, or during its public consultation phase, and for not releasing its complete Environment Plan.

Release of information

3.37 Access to information is important in ensuring open, accountable and transparent governance. Further, public access to information is an internationally recognised procedural right in environmental and planning law. This right manifests in a variety of ways including: the right to be notified of an opportunity to participate in in decision-making processes; and the right to access and comment on proposals. Access to information is a critical pre-cursor to exercising other rights such as the right to challenge government decisions in court.[46]

3.38 Submitters highlighted the importance of information being available to the public in order to make an informed assessment of the risks associated with offshore ventures. Mr Peter Owen from The Wilderness Society told the committee that 'consultation is…about being open and transparent with the community as to the magnitude of the risk that is potentially being imposed on that community and how that risk is being dealt with'.[47] However, submitters stated that in the case of BP's consultation process, stakeholders were not provided with sufficient information to make an informed view of the potential risk.

3.39 Ms Jessica Lerch from The Wilderness Society commented that her organisation had faced difficulties in obtaining 'basic information' from BP which would be required in order to fulfil their function as relevant persons under consultation guidelines. Ms Lerch stated:

> …it is very hard to form any kind of legitimate and credible opinion on how a project might affect your organisation and your members'—in our case—functions and interests in the absence of information like the worst credible potential impact of an oil spill in the region, which we were unable to get

45 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 16 November 2016, p. 34.

46 Environmental Defenders Office SA (Inc), *Submission 9*, p. 2.

47 Mr Peter Owen, The Wilderness Society, *Committee Hansard*, 16 November 2016, p. 24.

> from BP until, somewhat strangely, it was suddenly provided in retrospect almost at the eleventh hour of their latest assessment process.[48]

3.40 Similarly, the Clean Bight Alliance Australia (CBAA) told the committee that it has 'been advocating for full public disclosure of industry commissioned oil spill modelling and emergency response information' since its inception in 2014. It stated that as a 'small local group based in a remote area we only have access to information made readily available within the public record' and as such, the 'lack of transparency provided to the public' has an impact on their ability to adequately assess the risks associated with offshore petroleum ventures.[49]

3.41 CBAA went on to acknowledge that though BP was prepared to meet with several members of its organisation, it concluded that 'overall the information provided has been inadequate and our requests for BP's full environmental plan and oil spill modelling and emergency plan [were] declined'.[50]

3.42 Mr Lyndon Schneiders, The Wilderness Society, stated that in order for BP to operate in the Great Australian Bight, it needed to do so 'with the maximum confidence from the regional and local communities, and the Australian community, that something will not go wrong'. Further:

> …an environment that is clouded with secrecy, where core documents are not on the public record and are inaccessible to the public record through things like FOI, is just bad communications management…The issues around transparency are fundamental here. Getting all the information on the table is going to be critical, not just for decision makers, but also for communities potentially affected by these developments and what happens.[51]

3.43 Ms Warhurst from the Conservation Council of South Australia also commented that it had requested 'in the earliest consultation meetings' oil spill modelling but that 'BP have consistently refused to release the basic oil spill modelling'.[52] Similarly, The Wilderness Society submitted that since January 2014 it had repeatedly asked BP to release detailed worst case oil spill modelling for its proposed exploration program. It stated that:

> This modelling is necessary for a full assessment of the potential impacts a catastrophic oil spill in the Great Australian Bight could have on the

48 Ms Jessica Lerch, The Wilderness Society, *Committee Hansard*, 16 November 2016, pp. 24–25. See also The Wilderness Society, *Submission 43*, p. 61.

49 Clean Bight Alliance Australia, *Submission 23*, p. 2.

50 Clean Bight Alliance Australia, *Submission 23*, p. 2.

51 Mr Lyndon Schneiders, The Wilderness Society, *Committee Hansard*, 28 April 2016, p. 36.

52 Ms Kathryn Warhurst, Conservation Council of South Australia, *Committee Hansard*, 28 April 2016, p. 25.

> threatened and migratory species, the values of the marine environment and the social and economic values of the region.[53]

3.44 In its April 2016 submission, The Wilderness Society stated that BP failed the 'transparency test' because 'there is little relevant public information available regarding the potential worst case spill risk' arising from BP's proposed drilling program. The Wilderness Society submitted that this relevant information included:

> ...the proposed location of the four wells, the total well depths (both the water depth and further well depth into the seabed), the potential well pressures, and potential well flow rates or times when each well is expected to be drilled.[54]

3.45 As noted above, when BP submitted its Environment Plan to NOPSEMA for approval in 2015, it had not yet released any oil spill modelling to stakeholders or the public. As a result, 'The Wilderness Society commissioned independent, expert oil spill modelling to enable an understanding of the likely impacts of a significant oil spill from BP's Great Australian Bight drilling area'.[55] Many submitters made reference to this oil spill modelling, and utilised it in formulating their concerns regarding the potential impacts associated with BP's proposed drilling.[56]

3.46 BP released its oil spill modelling in September 2016. Submitters raised a number of concerns regarding BP's timing, and the details provided in the modelling. For example, The Wilderness Society questioned:

- why BP, after receiving numerous requests for this information during public consultation, only chose to release its modelling and oil spill response strategy at 'the eleventh hour of the assessment of its latest Environment Plan';
- how BP could have appropriately identified key stakeholders and relevant persons in the absence of oil spill modelling. Further, how members of the community could have self-identified as having interests which could potentially be impacted, without this information being publicly available; and
- why BP's 15 page publicly available response plan was lacking in detail, especially when compared to similar documents provided by proponents operating in the Arctic, which are over 400 pages in length.[57]

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53 The Wilderness Society, *Submission 43*, p. 37.

54 The Wilderness Society, *Submission 43*, p. 37.

55 The Wilderness Society, *Submission 43*, p. 39. For a further discussion of the results of this modelling see Chapter 5.

56 See The Conservation Council of South Australia, *Submission 14*; Dr David Ellis, *Submission 30*; Clean Bight Alliance Australia, *Submission 23*; International Fund for Animal Welfare, *Submission 29*; Miss Rebecca Faulkner, *Submission 38*; Emeritus Professor Robert Bea, *Submission 73*; Whale and Dolphin Conservation, *Submission 76*.

57 The Wilderness Society, *Submission 79*, p, 14.

3.47 The Kangaroo Island Council submitted that in order to understand BP's oil spill modelling conclusions, the data inputs for the modelling would be required. As BP had not released these data inputs, the Kangaroo Island Council stated that it 'therefore cannot accept the accuracy of the information provided by BP'.[58]

3.48 Similarly, The Wilderness Society was critical of BP's decision to withhold the assumed worst case flow rate used in its oil spill modelling released in September 2016, and stated that this information is:

> …critical to enable stakeholders, relevant experts and the public to assess the adequacy of modelling. It is also needed to enable an informed assessment of the full potential impact of a worst-case oil spill from the Great Australian Bight - a critical factor in any assessment of the risk of the proposal to the Australian community.[59]

3.49 BP, in its Environment Plan Summary agreed that the conclusions of oil spill modelling and the response plans derived from it are important matters of public consideration. It stated that it had provided information to stakeholders regarding how the modelling was conducted, such as the thresholds used and scenarios modelled. BP also submitted that it discussed key modelling results with stakeholders.[60]

3.50 BP stated that the details of how the proposed drilling program would incorporate lessons learned from the Deepwater Horizon incident were also discussed during consultation meetings. Specifically, information regarding prevention of loss of well control and technical solutions to a loss of well control event, such as capping and containment and relief well planning were provided.[61]

3.51 However, BP noted that due to the commercial sensitivities, model inputs, which are of commercially competitive significance (including hydrocarbon phase, volume and reservoir quality assumptions) would not be released.[62]

Adequacy of consultation with stakeholders

3.52 A number of submitters noted that not all affected stakeholders had been consulted by BP. For example, Ms Kerry Colbung, Chief Executive of the Aboriginal Lands Trust, stated that the Trust was concerned that there had been a lack of consultation as it had not been identified as one of the key Aboriginal stakeholders.[63]

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58 Kangaroo Island Council, *Submission 78*, p. 5.

59 The Wilderness Society, *Submission 79*, p, 8.

60 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 21.

61 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 21.

62 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 21.

63 Ms Kerry Colbung, Aboriginal Lands Trust, *Committee Hansard*, 16 November 2016, p. 9.

3.53 Ms Colbung noted that three groups—the Far West Coast Aboriginal Corporation, Yalata Aboriginal Community, and the Alinytjara Wilurara Natural Resources Management Board—had been identified as stakeholders during consultation. However, Ms Colbung stated that:

> …anecdotally people have indicated that they are not aware of the consultation that has taken place. Some groups have indicated that there have been public forums. They serve their purpose, but I think, specifically, when we deal with Aboriginal people we have to acknowledge that there needs to be Aboriginal space and there needs to be Aboriginal-specific forums. It would be great if there was the opportunity to allow Aboriginal space for Aboriginal people to talk about the issues that impact on them, particularly given the significance of this and the relevance to the responsibility that Aboriginal people hold for all those knowledge systems and structures, as well.[64]

3.54 Ms Viriginia Leek, Outposted Solicitor from the Crown Solicitor's Office, South Australia noted that despite the Aboriginal Lands Trust being the land owner of the land adjacent to the Head of the Bight, there had not been a direct approach for consultation from BP. Ms Leek stated:

> There has not actually been an approach from BP as far as we know to the lands trust itself. We looked back at all of the documents…What we saw from the early identification of stakeholders was that there were Aboriginal stakeholders identified but not specifically the Aboriginal Lands Trust. I think there may be some misunderstanding about the role of the trust in this space because it is actually the land owner of that land adjacent to the Head of the Bight.[65]

3.55 The Aboriginal Lands Trust expressed its disappointment that it had not been included in consultation during the environmental approvals process. It concluded that:

> Whilst BP identified Aboriginal stakeholders in the consultation phase, it has failed to identify the Trust as a key stakeholder for consultation and in doing so overlooked a major land holding body with a mandate to foster the economic, social, environmental, cultural heritage interests of all Aboriginal South Australians.[66]

3.56 The Australian Youth Climate Coalition and the Seed Youth Indigenous Climate Network also submitted that:

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64 Ms Kerry Colbung, Aboriginal Lands Trust, *Committee Hansard*, 16 November 2016, p. 10.

65 Ms Virginia Leek, Crown Solicitor's Office South Australia, *Committee Hansard*, 16 November 2016, p. 10.

66 Aboriginal Lands Trust, *Submission 84*, p. 3.

> Through independent consultation, we have determined that the affected Traditional Owner groups have not been consulted by any company wishing to drill or explore within the Great Australian Bight in any form.[67]

3.57 BP in its submission to the committee, provided the list of organisations, including Indigenous, business and commercial, non-government and community based organisations, it had consulted.[68] Mr Matthew Doman, APPEA, provided a response to comments received relating to BP's consultation process provided by witnesses at the committee's hearing of 16 November 2016. Mr Doman stated:

> Frankly, I think there has been some misrepresentation of the stakeholder engagement that BP has undertaken in relation to this project. I understand that they consulted over 70 community groups in that process. In fact, that consultation is detailed in their submission to this very inquiry. So some of the discussion that occurred earlier today missed the mark on that. However…we operate in an environment of increasing interest in the activities of our industry whether it be onshore or offshore in South Australia, the Northern Territory or anywhere else in the country. We have to stay on top of our engagement with the community and make sure that the information flow is there. We also face the task of countering misinformation wilfully spread by many of the opponents of development. That gives us an increasing task. It is something we are focused on and determined to do a better job of.[69]

Transparency of decision making

3.58 NOPSEMA, as the industry regulator was criticised by a number of submitters for failing to release information provided to it by BP, and for failing to publish the reasons for its decisions. The AMCS submitted that the approvals system:

> …fails in transparency in that little or no information is provided by NOPSEMA about the decisions it makes i.e. approvals are given or rejected without any reasoning/justification provided to the public. Similarly little information is provided publically prior to decisions being made to facilitate public interest input.[70]

3.59 Similarly, Mr Lyndon Schneiders, The Wilderness Society, told the committee that:

> The key thing we would want to see is the release of all of BP's documentation between it and the regulator. It should be released to this committee, at a minimum, and made public. The magnitude of the risk associated with what has been proposed here is potentially huge, so the

67 Australian Youth Climate Coalition, *Submission 77*, p. 5.

68 BP Developments Australia Pty Ltd, *Submission 20*, p. 24.

69 Mr Matthew Doman, APPEA, *Committee Hansard*. 16 November 2016, p. 57.

70 Australian Marine Conservation Society, *Submission 19*, p. 6.

> Australian public deserves to see this documentation. They deserve to know and understand what that magnitude of the risk is.[71]

3.60 NOPSEMA explained to the committee that, with the exception of information it is required to release by law, it does not typically publicly release information that has been provided to it as part of the deliberative process.[72]

3.61 Mr Stuart Smith, Chief Executive Officer, NOPSEMA explained that NOPSEMA is bound by legislation, including the *Freedom of Information Act 1982* (FOI Act). Mr Smith noted that individuals or organisations can seek information from NOPSEMA under the FOI Act, and that NOPSEMA is required to abide by any decisions made in accordance with that Act. Mr Smith reiterated that while information can be released, it is a matter of course that NOPSEMA does not release proponents' proposals 'up-front' or during the deliberative process. He explained that such a release:

> …could influence the nature of the information that companies provide and therefore diminish our capability to make an assessment. However, the companies are required to release an environment plan summary at the end of the process, and we will also release information about our deliberative process.[73]

Enhancements to the regulatory framework

3.62 In 2015, NOPSEMA identified that poor consultation practices in the offshore petroleum industry can lead to negative impacts on individuals, communities and organisations. Further, it identified that at the time, the transparency of its decision-making processes did not meet community expectations. The 2015 Operation Review, while endorsing NOPSEMA as an effective regulator, also found that there was a need for NOPSEMA to continue to build a social license to regulate by improving its capacity to engage with stakeholders. The Review made two recommendations:

- to develop a mechanism to provide greater transparency of decision making and assessment to stakeholders; and
- to continue to identify and implement cost effective and tailored/targeted education activities that improve its capacity to engage with stakeholders in order to share lessons, provide guidance and share new information.[74]

3.63 In August 2015, NOPSEMA announced a *Stakeholder engagement and transparency work program* to address these issues. In November 2016, it published its official guideline on consultation requirements. This document identifies

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71 Mr Lyndon Schneiders, The Wilderness Society, *Committee Hansard*, 28 April 2016, p. 39.

72 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 52.

73 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 56.

74 South Australian Government, *Submission 44*, p. 9.

NOPSEMA's position on key regulatory requirements for consultation and identifies the factors that influence its decision-making.[75]

3.64 As part of the *Stakeholder engagement and transparency work program*, it was also agreed that APPEA would prepare and publish a methodology for the effective consultation with relevant persons.[76] Dr Malcolm Roberts, Chief Executive Officer of APPEA, told the committee that he agreed that the obligation for effective consultation rests on oil and gas proponents but noted that the oil and gas industry is working with NOPSEMA to 'ensure that there is greater transparency', and in order to meet expectations around public consultation.[77] Dr Roberts informed the committee that APPEA, in conjunction with its members is developing a:

> …best practice framework which we expect will promote effective, transparent and consistent consultation with the community. We will soon be consulting with stakeholders on that framework, including some important principles such as publishing the intent to commence environmental plan preparation and related consultations as soon as possible, providing clearer information to stakeholders about industry activities and the possible impacts, ensuring sufficient time for stakeholders to review the information and provide their thoughts, following a consistent approach to assessing the merit of claims and objections made, and ensuring that assessment is provided to stakeholders and included in environmental plans and submissions to NOPSEMA. These practices are already being widely used across the industry, but we think explicitly setting higher, more rigorous standards will ensure better performance and continuous improvement.[78]

3.65 However, The Wilderness Society submitted that it considers it 'entirely inappropriate' to contract APPEA to deliver revised consultation guidelines. It noted that APPEA is 'behind on agreed timelines to undertake this work for its industry regulator'. The Wilderness Society concluded that it:

> …does not understand why NOPSEMA and/or the Department are not sufficiently resourced or experienced to undertake this work and considers NOPSEMA's outsourcing of such important guidelines to the peak body of the industry it is supposed to be regulating completely unacceptable.[79]

3.66 NOPSEMA also identified two enhancements to the current regulatory regime which would improve transparency and public consultation practices. The first

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75 For more information see: https://www.nopsema.gov.au/environmental-management/stakeholder-engagement-and-transparency/ and https://www.nopsema.gov.au/assets/Guidelines/A459065.pdf.

76 See https://www.nopsema.gov.au/assets/Corporate/A491964.pdf.

77 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, pp. 6–7.

78 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 16 November 2016, p. 56. See also BP Developments Australia Pty Ltd, *Submission 20*, p. 10.

79 The Wilderness Society, *Submission 79*, p. 15.

enhancement would be to include a public comment period at the point where a company has completed its environment plan and the consultation for that environment plan. Mr Smith, NOPSEMA, noted that this would go beyond the existing arrangements and provide an opportunity for any parties which felt they had not been consulted appropriately, to voice their interests and have those interests addressed. Secondly, environment plans could be released up-front, that is before a decision is made to the extent that those environment plans would be released under the FOI process. Mr Smith stated:

> We recognise that there is some very specific information which may be confidential, may have commercial sensitivity, so there may be some specific things that do not get released. But we think, in general, releasing the environment plans that are submitted to us would enhance the transparency of the process and assist the community in participating further in the process than they are able to do at the moment.[80]

3.67 The Department of Industry, Innovation and Science noted that it is working with NOPSEMA to review transparency:

> …on the basis that there is a very robust system and it would be better for everybody if people understood what was going on. There is nothing to hide here. It is an extremely robust system. It is clear that some improvement in the transparency would increase the public acceptance of the results. So we are doing some work.[81]

3.68 Mr Mike Lawson, Department of Industry, Innovation and Science, added that the review is considering how to increase 'citizen acceptance and awareness of the robustness of that system by making it more transparent'. He noted that transparency imposes cost 'but we believe that is likely to be a price that needs to be paid'.[82]

80 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 16 November 2016, p. 37.

81 Mr Mike Lawson, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 8.

82 Mr Mike Lawson, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 8.

Chapter 4

Effects of oil and gas exploration and production in the Great Australian Bight

4.1 During the course of the inquiry, the committee received evidence of the impacts, both economic and environmental, of oil and gas exploration in the Great Australian Bight. The evidence, in the first instance, outlined the impacts arising during the exploration period and following production of oil and gas. More particularly, extensive evidence was received about the impacts in the event of an oil spill.

4.2 Matters related to impacts in the event of an oil spill are discussed in the next chapter. The discussion in this chapter canvasses the evidence received in relation to the regional and national economic effects which can result from exploration and production as well as possible mitigation of benefits as a result of current tax arrangements, including the Petroleum Resource Rent Tax arrangements. The chapter concludes with a discussion of environmental impacts arising during the exploration and production phases.

Economic impacts of oil and gas production

4.3 The committee received evidence that outlined the potential economic outcomes of oil and gas production in the Great Australian Bight. These included direct and indirect employment opportunities, remedying the widening trade deficit, and increasing Australia's energy security. Some witnesses challenged the extent to which these benefits could be realised.

4.4 Dr Malcolm Roberts, Chief Executive Officer of the Australian Petroleum Production and Exploration Association (APPEA), stated that 'there is a compelling economic case for Australia and South Australia to test the potential of the bight as an oil province'. Dr Roberts particularly noted the volume of oil imported and the costs associated with this.[1]

4.5 The contribution of new discoveries of commercially-viable oil supply to energy security was also noted by APPEA.[2] Ms Claire Fitzpatrick, BP Developments Australia, noted that under International Energy Agency rules, if oil is discovered,

1 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, p. 1. See also Dr Malcolm Roberts, APPEA, *Committee Hansard*, 16 November 2016, p. 56.

2 APPEA, *Submission 46*, p. 9.

'at the point those oil reserves become a project and they bring that forward, that would actually count towards your 90-day [energy] supply requirement'.[3]

4.6 The Department of Industry, Innovation and Science pointed to the size of the oil and gas industry:

> Over this time, Australia's offshore oil and gas resources and the underlying regulatory regime governing their management have been significant contributors to the Australian economy. In 2014–15 the oil and gas extraction industry (including onshore and offshore oil and gas) contributed around $31 billion to industry gross value added and employment of around 24,000 people.[4]

4.7 Dr Roberts also stated that the oil and gas industry is one of Australia's 'highest value-add industries' generating highly skilled jobs both directly in 'upstream exploration and production' and in 'downstream processing, engineering and other services'.[5] APPEA, in its submission to the committee, also detailed the results of a PwC report it commissioned in 2014 which found that the oil and gas sector generates significant value relative to its input. For every dollar of domestic production, the sector adds 70 cents to Australian output, compared to an average of 49 cents for all other industries. The report found that the total value-add of the petroleum sector was $32 billion and expected to rise to $67 billion by 2029–30.[6]

4.8 Dr David Moffat, General Manager, Exploration, Chevron Australia, outlined Chevron's operations in Australia and noted that significant economic benefit had arisen from these operations. Dr Moffat stated that Chevron had invested more than $80 billion in projects in Western Australia.[7]

4.9 Dr Moffat added that two seasons of seismic acquisition had been completed and they 'provide early but very promising evidence that the Bight represents a tremendous opportunity for both Australia and South Australia in particular, on a scale possibly akin to the Bass Strait or the North West Shelf'.[8]

4.10 The South Australian Government submitted that exploration in the Great Australian Bight was anticipated to bring with it 'investment into, and expenditure in South Australia through industry contracts, construction and suppliers'. It noted that

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3 Ms Claire Fitzpatrick, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 50.

4 Department of Industry, Innovation and Science, *Submission 4*, p. 6.

5 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, p. 1.

6 APPEA, *Submission 46*, p. 10.

7 Dr David Moffat, General Manager, Exploration, Chevron Australia, *Committee Hansard*, 16 November 2016, p. 45.

8 Dr David Moffat, General Manager, Exploration, Chevron Australia, *Committee Hansard*, 16 November 2016, p. 43.

while the greatest scope for local investment lies in a future development and production phase, there have still been a number of opportunities in a range of services.[9]

4.11 Regional Development Australia Whyalla and Eyre Peninsula (RDAWEP) and the Eyre Peninsula Local Government Association (EPLGA) noted that oil and gas activity in the Great Australian Bight will create opportunities for the development of business capability and diversification though direct and indirect services provision. RDAWEP and EPLGA submitted that:

> Power, water and freight infrastructure in the region is generally antiquated and inadequate. Economic activity that creates additional demand for port infrastructure, standard gauge rail, improved roads, increased transmission capacity and cheaper and more abundant power and water in the region is most welcome if it leads to an improvement in the provision and efficiency of the relevant infrastructure.[10]

4.12 However, the RDAWEP and EPLGA acknowledged that the potential benefit to the region from oil and gas activities is unknown, and dependent upon the nature and extent of the oil and gas activity in the future.[11] They did however state that:

> GAB oil and gas activities have had a positive economic impact in the region to date.[12]

4.13 BP similarly noted that at the early stages of exploration, it is not possible to quantify precisely what economic benefits any future development would bring, but pointed to economic benefits arising from Bass Strait oil and gas operations and natural gas operations in Western Australia. BP stated that 'these potential outcomes are the prizes that motivate companies and governments in the pursuit of new oil and gas resources in the Great Australian Bight'.[13]

4.14 It also submitted that its exploration work had already created jobs and infrastructure for South Australia through initiatives such as upgrading Ceduna Airport to handle helicopter flights, and developing Port Adelaide to include a

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9 Government of South Australia, *Submission 44*, p. 12.

10 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 5.

11 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 5.

12 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 5.

13 BP Developments Australia Pty Ltd, *Submission 20*, p. 2.

dedicated oil and gas marine supply base.[14] The $8 million upgrade to Port Adelaide's bunkering facility provided more than 20 local jobs.[15]

4.15 However, some submitters challenged the economic benefits of offshore oil and gas ventures in the Great Australian Bight. Mr Peter Owen, Director, The Wilderness Society challenged the argument about the benefits of oil and gas to Australia's fuel security. Mr Owen commented that:

> I would suggest it is energy insecurity to continue to invest in the expansion of the fossil fuel industry when we know that it is not an option. We have to be investing in renewables, and investing in renewables rapidly, if we are serious about energy security…If we are going to talk about energy security, let us talk about it—for sure—but let us talk about it in real terms and acknowledge the reality that we are now facing: we have just signed the Paris Agreement. Australia cannot be seriously entertaining expanding the fossil fuel industry.[16]

4.16 Other submitters pointed to the high capital intensiveness of the oil and gas industry and questioned the employment benefits to the economy. For example, The Australia Institute described them as 'minimal'. It stated that:

> Such activities are highly capital intensive, so require relatively few workers. While eventual production would employ more people, in the context of the South Australian labour force, the impact would be minor.[17]

4.17 The Australia Institute also submitted that though offshore exploration and production in the Great Australian Bight would see a significant increase in oil and gas workers, it would only provide 'a very small increase in employment overall in South Australia'. It noted that due to the nature of the workforce, it expected that:

> …the majority of any future employees would be fly-in-fly-out (FIFO) workers who would be flown from around Australia to Adelaide and Ceduna and then to production rigs by helicopter. Many of these employees would not be from South Australia and would not reside in South Australia during their employment on the project.[18]

4.18 Similarly, the Australian Maritime Officers Union (AMOU) commented that the employment opportunities for its members in the exploration activities in the Great

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14 BP Developments Australia Pty Ltd, *Submission 20*, p. 33. See also Ms Claire Fitzpatrick, Managing Director, BP Development Australia, *Committee Hansard*, 28 April 2016, p. 44.

15 Infrastructure Magazine, 'Fueling South Australia's port infrastructure', 3 November 2016, http://infrastructuremagazine.com.au/2016/11/03/fueling-south-australias-port-infrastructure/, (accessed 20 February 2017).

16 Mr Peter Owen, Director, The Wilderness Society, *Committee Hansard*, 16 November 2016, pp. 23–24.

17 The Australia Institute, *Submission 37*, p. 1. See also Australian Youth Climate Coalition, *Submission 77*, p. 6.

18 The Australia Institute, *Submission 37*, pp. 5–6. See also Dr David Ellis, *Submission 30*, p. 77.

Australian Bight may be limited. The AMOU went on to state that it understood the bridge team of the Ocean GreatWhite would be predominantly workers on 457 visas (10 out of 12 mariners) and commented:

> We would expect that at the end of their swing the 457 visa holders would be helicoptered to the international airport at Adelaide and then flown home, never setting foot on the Australian mainland.[19]

4.19 The Aboriginal Lands Trust also expressed doubt in relation to the potential economic benefit to the Great Australian Bight region. It stated that:

> Whilst it's asserted that there will be economic benefit to the Region, the Trust is yet to see evidence of this although BP has identified that is has employed 4 Aboriginal people so far.[20]

4.20 It was also noted that there may be limited opportunity for the construction of oil and gas infrastructure in Australia with the Australia Institute noting that capital equipment such as the specialist rig Ocean GreatWhite is almost exclusively imported which provides little benefit to the Australian economy.[21]

4.21 In addition, The Australia Institute questioned the claims about the large multiplier benefit to the economy. Mr Roderick Campbell, Research Director, The Australia Institute, commented that:

> …what needs to be remembered is that the income of the employees being spent in local communities or at suppliers is usually not without some opportunity cost. It is not that the people or businesses would be sitting around unemployed in most cases. They would usually be doing something else. So claims of large multiplier benefit are generally rejected by economists…[22]

4.22 The committee was provided with evidence of costs to other industries as a consequence of oil and gas production. The South Australian Oyster Growers Association (SAOGA) provided its view of oil and gas activities in the Great Australian Bight. It submitted that it does not want to block the oil and gas industry from ventures, but it stated that the development of an oil industry in the Great Australian Bight poses a significant risk to the currently, pristine and unpolluted environment and its reputation as such. It highlighted that 'these are the features that the oyster industry's reputation and credentials in the market place are based upon, and have taken decades to establish and promote'.[23]

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19 Australian Maritime Officers Union, *Submission 75*, p. 7.

20 Aboriginal Lands Trust, *Submission 84*, p. 3.

21 The Australia Institute, *Submission 37*, p. 4.

22 Mr Roderick Campbell, Research Director, The Australia Institute, *Committee Hansard*, 28 April 2017, p. 10.

23 South Australian Oysters Growers Association, *Submission 82*, p. 1. See also South Australian Oyster Growers Association, *Submission 42*, p. 1.

4.23 SAOGA noted that Australia has a Quality Assurance Program that applies to all species of bivalve shellfish that are consumed in Australia or exported for consumption. This program is designed to ensure public health protections for consumers, and underpins sustainable development and consumer confidence. In addition, the South Australian Shellfish Quality Assurance Program (SASQAP) utilises a Risk Assessed Approach to monitoring with particular triggers determining levels of monitoring. According to SAOGA, oil and gas drilling activity in the Great Australian Bight would be a trigger for increased monitoring, and increased cost.[24] SAOGA stated that:

> As there are no natural seeps in the GAB, once drilling commences hydrocarbons or PAH will need to be added to SASQAP list of parameters for which to routinely test. This would add a significant additional cost to industry. Any further cost to SASQAP would be financially unsustainable for industry.[25]

4.24 SAOGA also highlighted that the South Australian Government has provided funding for the oyster industry to develop a code that certifies the quality and food safety of oysters, environmental sustainability and workplace safety. Quality assurance programs can be used to 'support marketing by a producer in particular markets to demonstrate attributes such as sustainability, biosecurity, [and] food safety'. SAOGA stated that 'activities in the GAB must not pose any threat to these kinds of credentialing programs and certifications which have been achieved through considerable energy, effort and cost'.[26]

Revenue and royalties

4.25 Submitters raised concern that existing taxation arrangements for offshore oil and gas projects may reduce the supposed economic benefits.[27] For example, The Australia Institute submitted that exploration drilling would be unlikely to yield royalties or tax to either the state or federal governments, and that in fact, expenses associated with exploration would likely be used as deductions from future income. It noted that the North West Shelf project required substantial investment—$8 billion up to 2009—from the Western Australian government in the form of infrastructure provision and subsidies before revenues were able to be collected.[28]

4.26 The Australia Institute warned that 'based on the Western Australian experience, if South Australia expects to develop an offshore gas industry, it must be

24 South Australian Oysters Growers Association, *Submission 82*, pp. 8–9.

25 South Australian Oysters Growers Association, *Submission 82*, p. 10.

26 South Australian Oysters Growers Association, *Submission 82*, p. 10.

27 See for example, Miss Rebecca Faulkner, *Submission 38*, p. 9.

28 Mr Roderick Campbell, Research Director, The Australia Institute, *Committee Hansard*, 28 April 2017, p. 12.

ready for potentially decades of subsidy before revenues are realised'.[29] It concluded that:

> …the economic impacts of oil production in the Great Australian Bight would be modest, particularly when seen in the context of the South Australian economy or the wider national economy.[30]

4.27 The South Australian Government also noted that should commercial quantities of petroleum be discovered and a production phase commenced, royalties in their entirety are paid to the Commonwealth. The South Australian Government does not receive any royalties on petroleum in Commonwealth licensed permits.[31]

4.28 Mr Campbell also commented on the need to put the benefits in context of the Australian economy and the timeframe of the projects:

> The idea that a range of projects can contribute hundreds of billions of dollars needs to be put in the context of the many, many years that they are over and the fact that it is the rest of the economy that is providing 99 per cent of the revenue to the Australian government and of the jobs in the economy. Let's not run around talking about the jobs that the gas industry or these projects might create without any context and without considering opportunity cost.[32]

4.29 The Wilderness Society submitted that 'the public simply should not subsidise such highly risky oil development activities'. [33] Mr Matthew Collis, IFAW, supported this view and stated that 'Australian taxpayers are subsidising offshore exploration in frontier areas like the Great Australian Bight by the concessions that are given to companies there'. He went to question whether Australian taxpayers should be undertaking that burden for what could potentially become stranded assets.[34]

4.30 Submitters were particularly critical of the subsidies available to titleholders under the Commonwealth *Petroleum Resources Rent Tax Assessment Act 1987* (PRRT Act). For example, The Wilderness Society noted that under PRRT Act, exploration activity that occurs in Designated Frontier Areas attracts subsidies. Under sections 36B and 36C, expenditure incurred by an oil or gas company during the exploration phase in a Designated Frontier Area is eligible to be deducted from the company's PRRT Act taxation liabilities at a rate of 150 per cent.[35] The Wilderness

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29 The Australia Institute, *Submission 37*, p. 8.

30 The Australia Institute, *Submission 37*, p. 5.

31 South Australian Government, *Submission 44*, p. 13.

32 Mr Roderick Campbell, Research Director, The Australia Institute, *Committee Hansard*, 28 April 2017, p. 13.

33 The Wilderness Society, *Submission 43*, p. 49.

34 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2017, p. 30.

35 The Wilderness Society, *Submission 43*, p. 49.

Society stated that three of the four permits held by BP would be eligible for such deductions.[36]

4.31 Ms Claire Fitzpatrick, Managing Director of BP Developments Australia explained the PRRT Act arrangements further. Ms Fitzpatrick told the committee that:

> …the 150 per cent for certain frontier exploration activities, would apply to three of our four permits. It applies to the PRRT tax regime, which only comes into force once your project has generated sufficient profit to trigger that. It is possible that in the future, if we are successful and there is a full-blown development and sufficient revenues have been generated to generate profit, that would be eligible under the current rules…No deductions in respect of that 150 per cent incentive have been charged or taken.[37]

4.32 The Department of Industry, Innovation and Science told the committee that the PRRT is 'designed to be—in a sense—a risk-sharing engagement' which encourages investment.[38] The Department also explained that BP would only be able to claim eligible portions of money spent on exploratory activity for deduction. In particular, it would only be able to claim money that has been spent rather than the entirety of its estimated work program of $538 million.[39] Under the PRRT, undeducted exploration expenditure for a project is also transferable to other projects with a taxable profit if, at the time the expenditure was incurred, the projects were held by the same entity. Similar rules apply in relation to the transfer of expenditure between projects held by companies in a company group.[40]

4.33 It should also be noted that expenses associated with clean-up activities necessary in the event of an oil spill during exploratory activities are considered 'exploration expenditure' for the purposes of the PRRT. The Australian Taxation Office, in answering a question taken on notice at the Senate Economics Legislation Committee Supplementary Budget Estimates hearing on 19 October 2016 stated:

> If there was a problem with an exploration well requiring remediation expenditure, to the extent that the expenditure had a close or quite direct connection with the physical activities of the petroleum project, it would be

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36 The Wilderness Society, *Submission 43*, p. 49.

37 Ms Claire Fitzpatrick, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 46.

38 Mr Mike Lawson, Acting Deputy Secretary, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 9.

39 Ms Marie Illman, Manager, Offshore Exploration, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 5; Mr Mike Lawson, Acting Deputy Secretary, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 6.

40 For more information on the PRRT, see:https://www.industry.gov.au/resource/Enhancing/ResourcesTaxation/PetroleumResourceRentTax/Pages/default.aspx.

considered exploration expenditure for petroleum resource rent tax purposes and would be available to be carried forward and uplifted.[41]

4.34 In November 2016, the Treasurer, the Hon Scott Morrison, announced a review into the design and operation of the PRRT. The review is being led by independent expert Mr Michael Callaghan, with the support of a secretariat within The Treasury.[42] In addition, on 1 December 2016, the Senate Economics References Committee resolved to broaden the scope of its inquiry into corporate tax avoidance to include an examination of Australia's offshore oil and gas industry including the treatment and/or payment of royalties, the PRRT, deductions, and other taxes.[43]

Environmental impacts

4.35 Submitters pointed to a range of environmental impacts arising during exploration and production of oil and gas in the Great Australian Bight. Of particular concern were the impacts of seismic surveying on mammals and the effects of increased shipping on the marine environment of the Great Australian Bight.

Seismic surveying

4.36 Seismic surveying, both 2D and 3D, is used by the oil and gas industry to explore the sea bed for oil and gas deposits. It is considered to be the most reliable form of initial exploration and is essential in identifying geological features below the surface. It reduces the need for excess exploration and ensures the efficiency and safety of oil and gas operations.[44] For example, Murphy Australia Oil conducted seismic surveying in the Great Australian Bight in 2013–14.[45] The Department of Industry, Innovation and Science noted that this work has been done consistent with the legal requirements, which include not undertaking survey work during restricted periods to avoid whale migration seasons and other potential impacts.[46]

4.37 In offshore operations, specialised vessels tow a seismic streamer—a collection of cables with seismic sources and hydrophones attached. These seismic

41 Australian Taxation Office, Answers to Questions on Notice, Senate Economics Legislation Committee, Supplementary Budget Estimates 2016–2017, Question 250, 19 October 2016 (received 9 December 2016).

42 For more information on the review see: http://www.treasury.gov.au/ConsultationsandReviews/Reviews/2016/Review-of-the-Petroleum-Resource-Rent-Tax.

43 For more information see: http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Corporatetax45th.

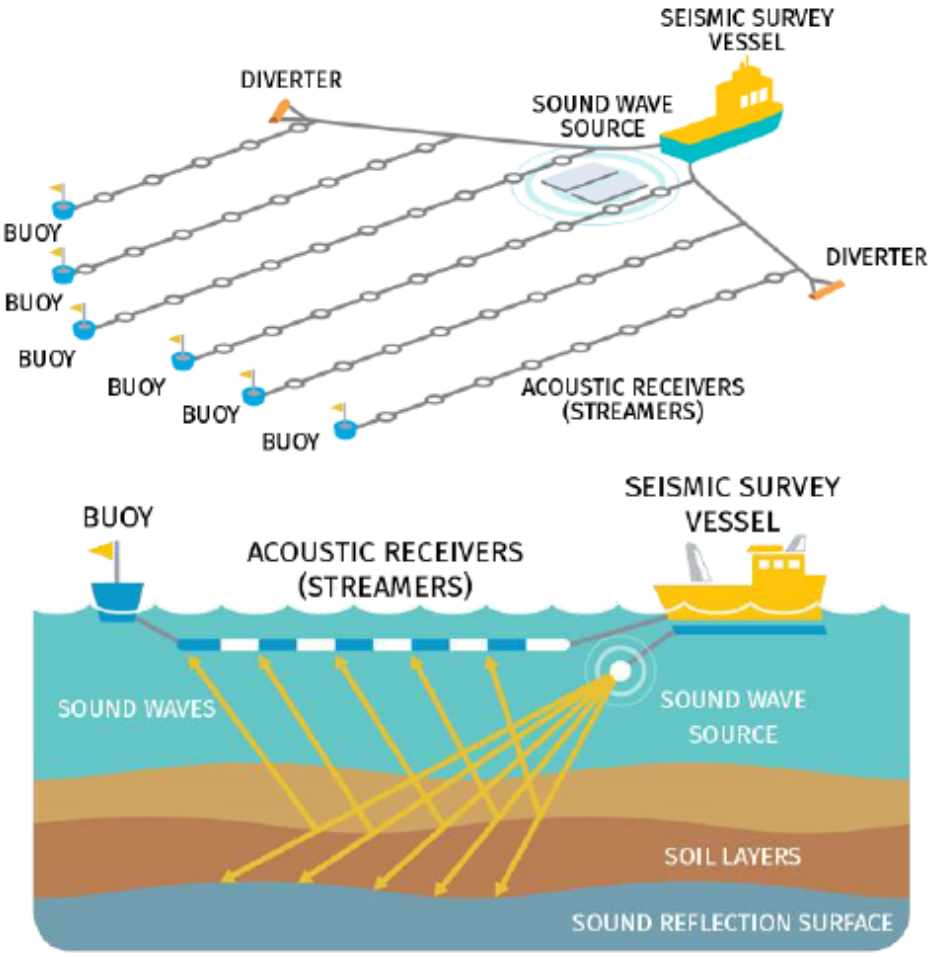
44 APPEA, *Submission 46*, p. 12.

45 Mr Derrick O'Keefe, Murphy Australia Oil, *Committee Hansard*, 28 April 2016, p. 62.

46 Mr Mike Lawson, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 3.

sources use compressed air to produce acoustic energy which bounces off rock formations on the seabed. The sound waves are reflected back to the surface where the hydrophones towed by the vessel capture them for analysis. This analysis provides information on the presence of gases or fluids in rock formations, and the type of rock present in the area.[47] The figure below illustrates the process of a seismic survey.

Figure 4.1 – Seismic survey process



Source: APPEA, Submission 46, p. 13.

4.38 Seismic surveys were the subject of some debate during the course of the inquiry with some submitters expressing concern that seismic surveying can have negative effects on cetaceans. Mr Matthew Collis, Policy and Campaigns Manager, IFAW, commented that seismic surveys introduce massive amounts of noise pollution into the marine environment which affect marine life, particularly whales. He added:

> As scientific knowledge improves, we are slowly beginning to understand the risks noise pollution entails for animals that rely on sound as their

47 APPEA, *Submission 46*, p. 13.

> primary sense and for every part of their life cycle. IFAW is concerned that neither the impacts of repeated seismic testing nor the wider cumulative impacts of multiple offshore projects are being properly taken into account under the current regulatory system.[48]

4.39 Greenpeace noted that a recent study had demonstrated that blue whales occur in 44 per cent of the areas of the Bight that have undergone seismic testing or where testing is planned and that whales are present during the months when testing occurs.[49] IFAW provided more information on the effects of noise on whales and submitted:

> Whales have a highly refined acoustic sense with which they monitor their surroundings. Whales use sound to navigate, locate prey and predators, attract mates, and for social interactions. Whales are extremely sensitive to man-made underwater noise pollution, including seismic surveys. Noise pollution can force whales away from important habitat, reduce feeding, cause stress, disorient them and inhibit their communication by masking their calls or forcing whales to call louder to be heard. At close range, loud noise can cause temporary or permanent damage to a whale's hearing, which has implications for their entire way of life.[50]

4.40 The Wilderness Society similarly noted that cetaceans use sound to communicate, navigate and feed, and submitted that 'a single seismic survey can cause endangered fin and humpback whales (both species rely on habitat in the Great Australian Bight) to stop vocalising—a behaviour essential to breeding and foraging—over an area at least 100,000 square nautical miles in size'.[51]

4.41 The AMCS submitted that there is scientific research which has concluded that:

> At least 37 marine species have been shown to be affected by seismic airgun noise. These impacts range from behavioural changes such as decreased foraging, avoidance of the noise, and changes in vocalizations through displacement from important habitat, stress, decreased egg viability and growth, and decreased catch rates, to hearing impairment, massive injuries, and even death by drowning or strandings. Seismic airgun noise must be considered a serious marine environmental pollutant.[52]

4.42 Some submitters, for example the South Australian Oyster Growers Association, also raised concern that there could be a connection between seismic

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48 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 28.

49 Greenpeace Australia Pacific, *Submission 22*, p. 6.

50 International Fund for Animal Welfare, *Submission 29*, p. 7.

51 The Wilderness Society, *Submission 43*, p. 22.

52 Australian Marine Conservation Society, *Submission 19*, p. 6; see also Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 32; Humane Society International, *Submission 3*, p. 2.

surveying in the Great Australian Bight and a number of whale strandings in the area which occurred in 2014–2015.[53]

4.43 However, Ms Claire Charlton, the lead scientist on the long-term Great Australian Bight southern right whale study, told the committee that the causal link between seismic surveying and cetacean strandings and death remains in question. Ms Charlton stated:

> That is a big question in that the causal effect might be different in each case depending on what examples have been given. Certainly, underwater noise can potentially cause physiological impacts to a whale which could cause damage—although that would require the animal to be very close. Internationally, that is still a very big question…[54]

4.44 Ms Charlton also stated that the dataset for the Great Australian Bight southern right whale study begins in 1981, and does not indicate any population trends that have been attributed to seismic surveys.[55]

4.45 APPEA noted that 'the oil and gas industry continue to invest millions of dollars of extra research' into the effects of noise on marine life 'in order to improve understanding and industry practices'.[56] Ms Charlton noted that Murphy and Santos—oil and gas permit holders in the Great Australian Bight—currently sponsor both the long-term study of whales in the Great Australian Bight, and provide sponsorship for a three year PhD program.[57]

Acoustic noise and shipping

4.46 In addition to seismic surveys, submitters expressed concern with the impact on cetaceans from an increase in acoustic noise associated with drilling and shipping in the area, and an increase in the risk of vessel strikes.

4.47 Greenpeace Australia Pacific noted that globally, the risk to cetaceans from vessel strikes is such that it has been recognised by the International Whaling Commission (IWC), and included in the terms of reference for both the IWC Scientific and Conservation Committees.[58] Similarly, The Wilderness Society

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53 South Australian Oyster Growers Association, *Submission 42*, p. 2. See also Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 19.

54 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 3.

55 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 2.

56 APPEA, *Submission 46*, p. 13.

57 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, pp. 1–2.

58 Greenpeace Australia Pacific, *Submission 22*, p. 6.

highlighted that the *Conservation Management Plan for the Southern Right Whale* stated that although reported vessel strikes are low:

> …it is likely that this risk will increase as shipping traffic grows and the impact on an individual, especially in south-east Australia, is likely to have a significant, potentially population-scale effect, if further evidence confirms this as a small demographically discrete population.[59]

4.48 The AMCS submitted that an increase in shipping in the Great Australian Bight associated with oil and gas activity would 'increase risks associated with animal strike, pollution, biosecurity hazards and underwater noise'.[60] Similarly, Greenpeace Australia Pacific submitted that:

> ...while it is difficult to predict accurate figures for ship movements, should the permit areas currently released under acreage all be developed it can be assumed that an increase in shipping will be substantial. Quantifying the population level extent of ship strike mortality is notoriously difficult since collisions are frequently unnoticed, but it is believed ship strikes can jeopardise the viability of small populations.[61]

4.49 Ms Charlton told the committee that southern right whales are particularly prone to vessel strike, and that unless they have had previous interactions with vessels they do not necessarily know to move out of the way of a ship.[62] Ms Charlton stated that:

> The southern right whales are increasing, but even internationally we are just now seeing this 3,000 number. We are still in a sensitive time. The southern right whales might be more prone to ship strike. These whales have had very little exposure to anthropogenic impacts. There is a shipping already off the Great Australian Bight. I am well aware of that. I know that the increased shipping traffic might be relatively minor, but it is still a consideration. These whales are very protected and not exposed at the moment. Again, it is just important that it is done well and that we apply the right mitigation tools, because it is a sensitive, endangered species.[63]

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59 The Wilderness Society, *Submission 43*, p. 25. See also Department of Sustainability, Environment, Water, Population and Communities, *Conservation Management Plan for the Southern Right Whale 2011–2021*, 2012, pp. 33–34, http://www.environment.gov.au/system/files/resources/4b8c7f35-e132-401c-85be-6a34c61471dc/files/e-australis-2011-2021.pdf, (accessed 18 January 2016).

60 Australian Marine Conservation Society, *Submission 19*, p. 4. See also Greenpeace Australia Pacific, *Submission 22*, p. 1.

61 Greenpeace Australia Pacific, *Submission 22*, p. 6.

62 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 5.

63 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 5.

4.50 In addition to the increased risk of vessel strike, the noise associated with an increase in both ship and helicopter traffic was raised by some submitters as an issue of concern. For example, Mr Rodney Keogh, a whale tour operator from Fowlers Bay on the far west coast of the Eyre Peninsula told the committee that he was concerned about the impact of vessel traffic and helicopters on the migration of whales in the area. In particular, he noted that southern right whales are a species that 'moves away from noise and moves away from vessel traffic'.[64] Mr Keogh explained that he had already witnessed southern right whales leaving Fowlers Bay after an increase in vessel traffic. Mr Keogh stated:

> For the last two years I have seen it with increased vessel traffic at Fowlers Bay. I have seen the whales move completely out of the area…. It is all due to acoustic noise in the water. If the whales are not sure, they will disappear. They do not have to be on our coastline; they can be anywhere else. They do not have to be here; if they are getting hassled they will take off.[65]

4.51 The importance of natal site fidelity was also raised in discussions of the impact of drilling in the pathway of migrating cetaceans. Ms Charlton, told the committee that there are 13 calving aggregation areas along the southern coast and that female southern right whales have high natal site fidelity, however there is insufficient evidence to assess the impact of drilling occurring in the migration pathway. Ms Charlton stated:

> I think there are predominantly 13 calving aggregation areas along the southern coast. We also know from the biology of the animals that they have high natal site fidelity. Often the female will actually return to the site where she was given birth to then start to have her offspring and will return to the same location every three to four years to breed. There are some signs of animals that have redistributed their calving habitat. The science shows that it is likely that the animals would continue to return to the same areas. In terms of if they changed direction, it is a really big question because, at the moment, we really know very little about their offshore distribution and movements and migratory pathways.[66]

4.52 Ms Charlton highlighted that further research is needed to establish a baseline understanding of whale behaviour in the area so that the effects of vessel traffic and acoustic noise can be identified and monitored. Ms Charlton told the committee that research gaps include understanding the movements between coastal aggregation grounds (migration pathways), understanding the offshore distribution of the area's population, and whether population is increasing.[67] Ms Charlton also highlighted that:

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64 Mr Rodney Keogh, Fowlers Bay Eco Park, *Committee Hansard*, 16 November 2016, p. 65.

65 Mr Rodney Keogh, Fowlers Bay Eco Park, *Committee Hansard*, 16 November 2016, p. 66.

66 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 5.

67 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 6.

> …there is a real opportunity for conservation and industry to co-exist. It is really a matter of gathering the right amount of data, adopting the precautionary principle, finding out the information we need and seeing that those mitigation tools are in place.[68]

4.53 In response to questioning about the interaction of whales and turtles with the infrastructure of the oil and gas industries, Mr Russell Lagdon, Senior Environment Manager, Chevron Australia, pointed to North West Shelf oil and gas activities. He commented that the industry operates in offshore waters on the cetacean migration path and further, that the humpback population on the west coast has 'rebounded quite significantly'. Mr Lagdon added:

> Yet [humpbacks] migrate through waters where we drill and explore and where there are major shipping routes for iron ore and other natural resources. So it would seem that the activity is not significantly impacting their breeding rates.[69]

Greenhouse gas emissions

4.54 A number of submitters argued that increasing oil and gas production in Australia will negatively affect Australia's ability to meet its commitment to reduce greenhouse gas emissions by 2030. In particular, submitters made reference to the historic, global climate agreement made in Paris under the United Nations Framework Convention on Climate Change at the 21st Conference of the Parties (The Paris Agreement).

4.55 The Paris Agreement sets in place a durable and dynamic framework for all countries to take climate action from 2020, building on existing international efforts in the period up to 2020. The key outcomes of the Paris Agreement include a global goal to hold the average temperature increase to well below 2°C and to pursue efforts to keep warming below 1.5°C above pre-industrial levels.

4.56 The AMCS submitted that:

> Opening up the Bight for oil development goes completely against Australia's—and the world's—commitment to the Paris Agreement and the aim of limiting global warming to 1.5 degrees Celsius above pre-industrial levels.[70]

4.57 The Wilderness Society also submitted that research conducted by the University College London has identified that in order to maintain a reasonable

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68 Ms Claire Charlton, Curtin University Great Australian Bight Whale Project, *Committee Hansard*, 16 November 2016, p. 4.

69 Mr Russell Lagdon, Chevron Australia, *Committee Hansard*, 16 November 2016, p. 46.

70 Australian Marine Conservation Society, *Submission 19*; p. 6. See also Greenpeace Australia Pacific, *Submission 22*, p. 6; Professor Will Steffen, *Submission 27*, p. 1; Miss Rebecca Faulkner, *Submission 38*, p. 5; Conservation Council of South Australia, *Submission 13*, p. 2.

chance of complying with the aims of the Paris Agreement, only 49 per cent of existing oil reserves in the OECD Pacific region can be burnt. The Wilderness Society concluded that this would indicate that opening the Great Australian Bight for exploration would be inconsistent with this estimation, and would be in conflict with the Paris Climate Agreement.[71]

71 The Wilderness Society, *Submission 43*, p. 4.

Chapter 5

Environmental and economic impacts in the event of an oil spill

5.1 This chapter examines the potential economic and environmental impacts on the Great Australian Bight in the event of an oil spill.

5.2 The capacity to mitigate the effect of an oil spill is discussed in Chapter 6.

Oil spill modelling

5.3 Oil spill modelling is crucial to understanding the potential impact of an oil spill on the surrounding natural environment, local industries which rely on the marine and coastal environment, and nearby communities. This section provides an outline of the results of oil spill modelling conducted for BP's proposed drilling in the Great Australian Bight.

Modelling commissioned by The Wilderness Society

5.4 BP submitted its Environment Plan to NOPSEMA for approval on 1 October 2015. At that time, the company had not publicly released any oil spill modelling which would demonstrate the impact of a potential spill in the Great Australian Bight. As a result, The Wilderness Society commissioned Mr Laurent Lebreton, an independent consultant, to conduct a stochastic analysis[1] of deep sea oil spill trajectories in the Great Australian Bight.

5.5 Mr Lebreton's analysis considered a range of potential incidents including an 'optimistic' scenario of 5,000 barrels of oil per day being released, and a 'pessimistic' scenario of 50,000 barrels of oil per day being released. The model also utilised a 'conservative worst case' spill duration of 87 days based on the time it took to cap the Deepwater Horizon spill and an optimistic scenario of 35 days based on BP's publicly stated ability to cap wells within 35 days.[2]

5.6 The numerical model predicted that 'regardless of the oil spill scenario' it is 'predicted that at a minimum, there is a 70 per cent to 80 per cent likelihood of oil droplets reaching the Australian coastline'.[3] It also predicted that if an oil spill

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1 Stochastic modelling demonstrates the probability of where an oil spill may impact for defined time periods by running a series of trajectories under various wind conditions from historic records. These outputs illustrate the waters and shorelines that are most at risk from oiling during various seasons. It is primarily used for contingency planning purposes to develop a range of possible planning scenarios.

2 The Wilderness Society, *Submission 43*, p. 39.

3 The Wilderness Society, *Submission 79*, p. 7. See also Mr Laurent Lebreton, *Submission 35*, Attachment 1, for a complete copy of the analysis.

occurred in summer then oil would very likely impact the shores of Western Australia, reaching as far as Albany and Denmark. If an oil spill were to occur in winter, then the model showed that oil would very likely impact the Eyre Peninsula, Kangaroo Island, and Spencer Gulf in South Australia. Further, it was predicted that it could also reach much of the Tasmanian and Victorian coastline, through the Bass Strait towards New Zealand.[4]

5.7 Mr Lebreton's modelling was referred to by a number of submitters[5] who raised concerns with the potential impact of an oil spill in the Great Australian Bight. However, it was also criticised by other organisations.[6]

Release of BP's 'worst credible case' oil spill modelling

5.8 In September 2016, BP publicly released 'worst credible case' oil spill modelling it had conducted for the proposed Stromlo-1 and Whinham-1 wells.[7] This modelling utilised a 149 day oil release scenario based on BP's assessment that it would take this long to drill a relief well to permanently stop a blowout. The scope of the modelling examined the potential risk of exposure to the surrounding waters, and contact with coastlines during three distinct seasons. Namely, summer (October to March), transitional periods (April and May), and winter (June to September).[8]

5.9 Table 5.1 below contains a summary of BP's modelling. It shows the probability of moderate shoreline contact in each of the modelled seasons, and at a number of key locations. It shows that if there is an oil spill it may reach as far as the New South Wales South Coast, Tasmania, and the coast of Western Australia.[9]

4 The Wilderness Society, *Submission 43*, pp. 39–40.

5 See The Conservation Council of South Australia, *Submission 14*; Dr David Ellis, *Submission 30*; Clean Bight Alliance Australia, *Submission 23*; International Fund for Animal Welfare, *Submission 29*; Miss Rebecca Faulkner, *Submission 38*; Emeritus Professor Robert Bea, *Submission 73*; Whale and Dolphin Conservation, *Submission 76*.

6 The Norwood Resource Incorporated, *Submission 35*, p. 3.

7 BP, *Fate and effects oil spill modelling assumptions, parameters and results*, 14 September 2016, http://www.bp.com/content/dam/bp-country/en_au/about-us/what-we-do/exploring-great-australian-bight/fate-effects-oil-spill-modelling-assumptions-parameters-results.pdf, (accessed 24 February 2017). See also The Wilderness Society, *Submission 79*, Attachment 1.

8 BP, *Fate and effects oil spill modelling assumptions, parameters and results*, 14 September 2016, p. 3.

9 BP, *Fate and effects oil spill modelling assumptions, parameters and results*, 14 September 2016, pp. 14–15.

Table 5.1—Modelling showing probability of moderate shoreline contact

Shoreline	Season	Probability of moderate shoreline contact (%)
Adelaide	Summer	58
	Transitional	97
	Winter	86
Port Lincoln	Summer	91
	Transitional	100
	Winter	98
Kangaroo Island	Summer	95
	Transitional	100
	Winter	94
Great Australian Bight Marine National Park	Summer	20
	Transitional	8
	Winter	97
Esperance (WA)	Summer	29
	Transitional	7
	Winter	64
Apollo Bay and Wilsons Promontory (Vic)	Summer	56
	Transitional	91
	Winter	70
New South Wales South Coast	Summer	3
	Transitional	21
	Winter	41
Tasmania	Summer	46
	Transitional	66
	Winter	19

Source: BP, Fate and effects oil spill modelling assumptions, parameters and results, 14 September 2016, pp. 14–15.

Economic impact in the event of an oil spill

5.10 Oil spill modelling demonstrated that coastal communities and industries which rely on the marine environment would be affected in the event of an oil spill resulting from activities in the Great Australian Bight. Some submitters argued that any potential economic benefit of offshore oil or gas production in the Great Australian Bight must be weighed against the risk to other industries such as tourism, aquaculture and fisheries, in the event of an oil spill. The City of Victor Harbor stated that 'an oil spill within the Bight may represent a low occurrence risk, however such an event would represent a potentially catastrophic consequence risk'.[10]

5.11 In considering the effects of an oil spill in the Great Australian Bight, the South Australian Oyster Growers Association (SAOGA) questioned who would be 'responsible and what is the capacity to support industries impacted by oil spill event(s)' especially if impacts extend for long periods of time. It submitted that in the event of an oil spill:

> Compensation for impacted businesses must be immediately available (not after lengthy legal proceedings) and must include consumer perceptions in the situation through and following a spill (the experience of seafood producers and harvesters in the Gulf of Mexico was that consumer perceptions were still prevalent years after the product was officially cleared for sale).[11]

5.12 Ms Trudy McGowan, Executive Officer of SAOGA, told the committee that in the event of a catastrophic oil spill, the industry's brand would not be able to be recreated. Ms McGowan stated:

> I personally do not believe you can recreate the brand. If we had a catastrophic oil spill that wiped out the coast of South Australia, firstly, the industry would go. The majority of them are not going to be able to wait for six years; they are family businesses. They are going to have to do something else.[12]

5.13 A number of submitters also raised concern that as a premier eco-tourism destination, the tourism industry would be damaged in the event of an oil spill in the Great Australian Bight. For example, Dr David Ellis submitted that:

> Ecotourism business such as scuba diving, dolphin and whale watching tours, fishing charters and guided tours such as the many operating on Kangaroo Island would be unable to operate and boast the Southern Ocean's reputation as a clean, wild and healthy ecosystem to their clients, many who visit from overseas. The South Australian government's very own

10 City of Victor Harbor, *Submission 12*, pp. 2–3.

11 South Australian Oysters Growers Association, *Submission 82*, p. 3.

12 Ms Trudy McGowan, SAOGA, *Committee Hansard*, 16 November 2016, p. 53.

> ecotourism 'business' Seal Bay would have to close and many international visitors would no longer come to South Australia.[13]

5.14 The City of Victor Harbor, in noting that the Great Australian Bight provides a critical sanctuary for many threatened species, and supports a significant tourism industry stated that:

> If an oil spill interfered or discouraged the annual migratory habits of Southern Right Whales or other migratory species, there will be economic and social consequences for our community and our visitors. One only needs to reflect on the 2010 BP Deepwater drilling rig blow out in the Gulf of Mexico to understand how extensive the consequences could be.[14]

5.15 Similarly, the AMCS described the tourism industry in the Gulf of Mexico as 'wrecked' by the Deepwater Horizon disaster. [15]

5.16 Mr Ben Byass, a tourism operator on Kangaroo Island expressed concern that in the event of an oil spill, 'tourism and aquaculture industries would be decimated'. Mr Byass also drew comparisons to the Gulf of Mexico and concluded that oil and gas activity in the region 'is a serious threat to our way of life and economy.[16]

5.17 The Kangaroo Island Council submitted that it:

> …did not consider the multibillion-dollar tourism, fisheries and aquaculture industries in SA, Victoria and Tasmania should be put at risk for the meagre potential economic gains from an industry that is fast becoming a dinosaur for future energy resources to supplement world consumption.[17]

5.18 The Aboriginal Lands Trust, which operates the Head of the Bight Visitor/Interactive Centre stated that it 'is committed to the economic prosperity of the Region through engaging with local and other Aboriginal stakeholders through its procurement arrangements'. This includes a range of activities including 'the purchase of Aboriginal specific merchandise to contracting services for maintenance'.[18]

5.19 The Aboriginal Lands Trust went on to state that:

> Through its interest in the protection of cultural and conservation values, the Trust has been able to provide economic benefit to Aboriginal people in the region. It is concerned that these benefits could be undermined by a potential oil spill.[19]

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13 Dr David Ellis, *Submission 30*, p. 78.

14 City of Victor Harbor, *Submission 12*, p. 2.

15 Australian Marine Conservation Society, *Submission 19*, pp. 3–4.

16 Mr Ben Byass, *Submission 66*, p. 1.

17 Kangaroo Island Council, *Submission 78*, p. 2.

18 Aboriginal Lands Trust, *Submission 84*, p. 3.

19 Aboriginal Lands Trust, *Submission 84*, p. 3.

Impact on Indigenous communities

5.20 Aboriginal groups along the coast of the Great Australian Bight uphold strong spiritual and physical connections the area. The committee received evidence that an oil spill could potentially harm these connections. The Aboriginal Lands Trust submitted that:

> The HOB [Head of the Bight] and its cultural relevance continues to be significant to the local, regional and wider Aboriginal stakeholders with the various groups continuing to maintain their interest in the traditional knowledge systems and structures that emerge from this area.[20]

5.21 Ms Colbung, Chief Executive of the Aboriginal Lands Trust, told the committee that the area is 'very rich in cultural heritage' and that:

> …there are important storylines that run right down to the Head of the Bight and also that there could be potential damage to some of those storylines, as far as the local groups like the Mirning are concerned, because the southern right whales, as I understand it, represent those totemic species that are integral to the maintenance of Aboriginal culture…[21]

5.22 Mr Bunna Lawrie, an Elder and songman of the Mirning people, explained that the Nullabor and the Great Australian Bight are central to the Mirning people's spiritual beliefs and customs. Mr Lawrie told the committee that the Mirning people believe that during the Dreamtime, the great white whale Jiddara came to the Great Australian Bight to give life and to give breath into the land and the ocean. The Mirning people also believe that during the Dreamtime, whales used to come into the caves of the Nullabor cliffs and the Mining people 'used to look after the whales and treat them when they were not singing'. Mr Lawrie explained that the Mirning medicine men and whale songmen protected the land and 'that is why that beautiful country and that beautiful land is still standing and looking good today and clean and untouched'.[22]

5.23 Mr Lawrie emphasised the spiritual importance of the area, telling the committee that it was where his initiation took place and that the area:

> …is full of energy, it is full of life and healing; it is a medicine to the whales and it is a medicine to my people, the Mirning people. And it is a very spiritual place too, so it is a place where us Mirning people—we honour that tradition, that custom. We honour that Dreaming.[23]

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20 Aboriginal Lands Trust, *Submission 84*, p. 3.

21 Ms Kerry Colbung, Aboriginal Lands Trust, *Committee Hansard*, 16 November 2016, p. 13.

22 Mr Bunna Lawrie, *Submission 62*, p. 1.

23 Mr Bunna Lawrie, *Submission 62*, pp. 1–2.

5.24 Mr Lawrie also highlighted the importance of the area as a place of learning for the Mirning people and described it as a museum and a university. He also stated that:

> This ocean is sacred. It is very sacred to mankind. It is sacred to all the marine life. It is sacred to all the mammals in the ocean. It is a sacred place, and also it is an energy, so it is a living being. It is part of the earth. It gives life, and the main thing: it keeps our planet earth alive. It sustains all we need. [24]

5.25 Mr Lawrie told the committee that his duty and responsibility as an Elder and a whale songman is to 'protect and preserve our country' and as such 'we are at great risk and danger if oil spills happen in the Great Australian Bight'.[25] He concluded that:

> We do not want BP or any other oil companies in our Great Australian Bight. We want you out of here, because you have already done damage around other parts of the world, and we do not want you to come here and destroy our beautiful oceans and the Great Australian Bight.[26]

5.26 Similarly, the committee received evidence from Ms Sue Coleman Haseldine, a Kokatha Mula custodian from Ceduna who stated that she is dependent on the ocean for food, and that an oil spill would result in the loss of her livelihood and traditional lifestyle. Ms Coleman Haseldine told the committee that:

> If we get any kind of interference with our ocean, all our traditional ways are going to be gone. We will not be able to go for raids to fish scallops, oysters, cockles, crabs—anything that we can get when the tide is out or even from a boat. Everything we have treasured will be gone.[27]

5.27 Ms Colbung also told the committee that the local Aboriginal people rely on the area as a source of food. Ms Colbung stated:

> …the local Aboriginal people rely on [the marine life] as a food source right through from the Head of the Bight to the vicinity of Dog Fence Beach. People rely on that part of the coast to fish and camp, and the marine life—mulloway, salmon et cetera—is a fantastic supplemental source of food for the local Aboriginal people.[28]

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24 Mr Bunna Lawrie, *Submission 62*, p. 1.

25 Mr Bunna Lawrie, *Submission 62*, p. 1.

26 Mr Bunna Lawrie, *Submission 62*, p. 2.

27 Clean Bight Alliance, *Submission 23*, Attachment 1, p. 1.

28 Ms Kerry Colbung, Aboriginal Lands Trust, *Committee Hansard*, 16 November 2016, p. 9.

Impact on the marine environment in the event of an oil spill

5.28 The waters of the Great Australian Bight are recognised as being some of the most biologically diverse in the world. They provide habitat for between 12,000 and 14,000 invertebrate species, 1,500 algal species, 612 fish species (occurring above 50m depth), 16 breeding seabird species, 33 mammal species, and 12 seagrass species. A number of the species of fauna such as southern right whales and Australian sea lions are recognised as internationally and nationally significant. Further, 95 per cent of seagrasses, 85 per cent of fish species and 75 per cent of red algae in the Great Australian Bight are found nowhere else in the world.[29]

5.29 The City of Victor Harbor stated that:

> The Great Australian Bight is a relatively pristine ocean environment and a critical sanctuary for many threatened species. There are species found in the Bight that are found nowhere else in the world. And it is an important migratory path for several marine species. It is these unique qualities that our South Australian Marine Parks network was established to protect for future generations.[30]

5.30 Mr Collis, International Fund for Animal Welfare (IFAW) similarly explained that the Great Australian Bight is:

> …home to nearly half of all the world's species of whales and dolphins, and all three species of seals and sea lions found regularly in mainland Australian waters. The Australian government has mapped biologically important areas in the bight for blue whales, southern right whales, sperm whales and the Australian sea lion, some of which overlap directly with, or are in close proximity to, BP's proposed drilling area. The bight is also recognised as globally important for elusive and rarely seen beaked whales.[31]

5.31 As such, the key concern raised in evidence was the potentially catastrophic impact of an oil spill on: marine wildlife such as cetaceans and seabirds; fisheries; seabed flora and fauna; habitats; and food species. Oil spills have the potential to have negative effects both at the individual, and at the population level. The Wilderness Society submitted that:

> Individual impacts include death, disease, impaired reproduction, genetic alterations, changes to endocrine or immune functions, hypothermia and a range of other biological disorders. Group-level impacts include changes to local population sizes, community structures and overall biomass. The most

29 Conservation Council of South Australia, *Submission 13*, p. 1. See also International Fund for Animal Welfare, *Submission 29*, p. 1; Sea Shepherd Australia, *Submission 18*, pp. 1–2; Australian Marine Conservation Society, *Submission 19*, p. 3; Greenpeace Australia Pacific, *Submission 22*, p. 2.

30 City of Victor Harbor, *Submission 12*, p. 2.

31 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 27.

> obvious toxic impact of spilled oil is direct contact with wildlife and habitat.[32]

5.32 Mr Matthew Collis, IFAW, told the committee that:

> …it is important to remember that much of the damage to wildlife would be out in the ocean, far from the coast, where animals rely on this habitat for feeding and migration. Potential effects of a spill on marine mammals include hypothermia and metabolic shock, organ dysfunction due to ingestion of oil and exposure to toxic metals, lung disease and damage, gastrointestinal ulceration and haemorrhaging, eye and skin lesions, decreased body mass due to restricted diet, and stress due to oil exposure and behavioural changes.[33]

5.33 Any ability to predict the potential impact of an oil spill in the Great Australian Bight is influenced by the size of the potential spill, the mitigation strategies which would be employed, and the time of year it occurs. As such, many submitters provided general evidence of the potential effects of oil pollution in the marine environment, and evidence of the effects of incidents such as the Deepwater Horizon and Exxon Valdez spills. It isn't known which of these effects would be seen in the Great Australian Bight in the event of an oil spill, but it is possible that they may occur.

Wildlife

5.34 Oil is comprised of thousands of chemical compounds, each with varying levels of toxicity to humans, wildlife and the environment. The most acutely toxic components of oil are water-soluble fractions (WSFs) and volatile organic compounds (VOCs) which evaporate into the air or mix with marine waters. These components include benzene, naphthalene, xylene and toluene. Once released into the environment and after being subjected to weathering, the WSFs and VOCs are generally lost. The remaining oil generally contains proportionately higher levels of polycyclic aromatic hydrocarbons (PAHs). These are also toxic to both wildlife and humans, and potentially linger in the environment for many years.[34]

5.35 NOPSEMA submitted that the skin, fur and plumage of marine wildlife are often the first part of the animal to be exposed to direct contact with oil and oil-dispersant mixtures. For cetaceans and dugongs, skin contact with oil can lead to skin irritation, inflammation, burns and necrosis. It can also increase the risk of secondary health problems such as infection from open sores and lesions.[35]

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32 The Wilderness Society, *Submission 43*, p. 27.

33 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 27.

34 The Wilderness Society, *Submission 43*, p. 27.

35 NOPSEMA, *Submission 7*, Attachment 6, p. 72.

5.36 When birds are exposed to oil, their plumage is affected in such a way that the feathers are no longer able to provide insulation or repel water. This can affect the ability of birds to swim, fly or forage, and rescued birds have shown signs of hypothermia. Similarly, the haircoat of pinnipeds provides insulation, regulates body temperature, and provides buoyancy. When oil covers the haircoat, it allows water to come into direct contact with the animal's skin resulting in rapid onset hypothermia.[36]

5.37 The Wilderness Society stated that 'a large spill can cause a massive acute die-off of oiled birds. These mass seabird deaths can also create trophic cascade effects that impact their prey species and fisheries'.[37] The Wilderness Society submitted that in the six months following the Deepwater Horizon:

> …wildlife responders had collected "8,183 birds, 1,444 sea turtles, and 109 marine mammals affected by the spill—alive or dead, visibly oiled or not". The US Department of the Interior for Fish, Wildlife and Parks stated that the three most affected bird species appeared to be brown pelicans, northern gannets, and laughing gulls. It has been estimated that approximately one million seabirds and between 600,000 and 800,000 coastal birds were killed as a result of the oil spill. More than 1,000 sea turtles were found dead following the spill and between January and March 2011, 200 dead dolphins were found in the Gulf of Mexico.[38]

5.38 Greenpeace Australia Pacific also highlighted that mass mortalities were recorded in the Gulf of Alaska following the Exxon Valdez spill with 250,000 seabird deaths recorded in the immediate days after the incident. It also noted that a number of marine bird populations continue to show signs of exposure, and a decline in population in studies conducted 9 years after the incident.[39]

5.39 Oil making direct contact with the eyes of wildlife has also been found to cause significant injuries. NOPSEMA noted that necropsies of harbour seals exposed to the Exxon Valdez oil spill showed signs of suffering conjunctivitis. It also noted that though research on other species is rare, it should be anticipated that such effects would be found in other species that swim through, or break the surface of oil-affected water.[40]

5.40 Marine wildlife is also likely to suffer from the negative effects of ingesting oil when foraging, feeding, and grooming. In particular, cetaceans, pinnipeds, dugongs and birds are at considerable risk of ingesting oil while foraging in oil-affected areas, and in consuming oil-affected food resources. NOPSEMA highlighted that baleen whales are particularly susceptible to oil ingestion due to their mouth anatomy and

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36 NOPSEMA, *Submission 7,* Attachment 6, p. 72.

37 The Wilderness Society, *Submission 43*, p. 28.

38 The Wilderness Society, *Submission 43*, p. 31.

39 Greenpeace Australia Pacific, *Submission 22*, p. 2.

40 NOPSEMA, *Submission 7,* Attachment 6, p. 72.

feeding behaviour. In particular, filtering large volumes of oil-affected water while feeding has the potential to lead to the fouling of the baleen which in turn can adversely affect the animal's ability feed.[41] IFAW submitted that:

> Although not specified in the public summary that was released of BP's recent environment plan submission, the original oil spill modelling referenced in BP's EPBC Act referral back in 2013 estimated the probability of hydrocarbon contact with whale foraging areas in the water column in the GAB was 50-60% with no intervention (BP, 2013). This would likely have a significant impact on blue, sperm and beaked whales feeding in the water column in these areas both in terms of ingesting oil (and potentially toxic dispersants) and on prey availability in these areas.[42]

5.41 Similarly, Mr Collis, IFAW told the committee that:

> The issue for marine life is that, particularly for deep-diving species like sperm whales and beaked whales and also blue whales that feed in the Great Australian Bight, is that they often feed at depth under water. Blue whales are what we call filter feeders—they gulp in large amounts of water and extract krill from that. So they will be taking in large amounts of water which will include whatever level of oil has spilled in the water column, not just at the surface. However, they would also be affected at the surface when they come to breath. So there are those dual aspects of how marine mammals would be affected by oil both in the water column and at the surface.[43]

5.42 Dugongs may also have their ability to feed affected by oil collecting on the sensory hairs around their mouth. These hairs are believed to have a role in dugong foraging behaviour. As well as feeding in oil-affected waters, birds spend considerable amounts of time preening their feathers and there is a high likelihood that an oiled bird will ingest oil as a result. [44]

5.43 Ingested oil can cause a range of injuries and physiological effects on wildlife. It can damage the gastrointestinal tract which can in turn effect digestion and the uptake of nutrients. It can also damage the kidneys and liver both of which play important roles in the metabolism of waste and toxins. Studies have also found ulcers, diarrhoea, a decreased ability to absorb nutrients from food, and a negative effect on egg condition in marine life which has ingested oil.[45]

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41 NOPSEMA, *Submission 7,* Attachment 6, pp. 72–73.

42 International Fund for Animal Welfare, *Submission 29*, p. 5.

43 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 32.

44 NOPSEMA, *Submission 7*, Attachment 6, p.73.

45 NOPSEMA, *Submission 7*, Attachment 6, p. 73.

5.44 IFAW submitted that researchers found a high prevalence of hypoadrenocorticism (low functioning of the adrenal gland which alters stress response) in live bottlenose dolphins in Barataria Bay, Louisiana, after the Deepwater Horizon spill. In addition, skin tissue of sperm whales collected from the Gulf of Mexico found elevated concentrations of toxic chemicals such as chromium and nickel. According to IFAW, researchers suggested that exposure to toxic metals is an understudied area of concern for whale populations swimming in oil contaminated waters.[46] IFAW also highlighted that a study found that dispersants used during oil spill recovery efforts can both kill cells and damage cell DNA in sperm whale skin, at relatively low levels of exposure. This exposure can lead to sub-lethal but potentially long-term harmful effects in whales.[47]

5.45 The inhalation of oil droplets and volatile hydrocarbons[48] also has the potential to damage the mucous membranes and respiratory tissues of wildlife. Following the Exxon Valdez oil spill, harbour seals were found with symptoms of pneumonia and interstitial emphysema, and NOPSEMA submitted that such similar effects might be anticipated in other mammals. Inhalation of hydrocarbon vapours is also known to cause nerve damage and behavioural problems in humans, and it may also be reasonable to assume such an impact will be seen in marine mammals.[49] The Wilderness Society submitted that following the Exxon Valdez spill, an estimated 302 harbour seals most likely died from the inhalation of toxic fumes.[50] Similarly, IFAW highlighted a study that found a high prevalence of lung disease in bottlenose dolphins in Barataria Bay, Louisiana, United States of America, following the Deepwater Horizon spill.[51]

5.46 Exposure to oil pollution has also been linked to an increase in cetacean strandings, and foetal loss in pregnant cetaceans. The US National Oceanic and Atmospheric Administration (NOAA) declared an Unusual Mortality Event in (UME) for cetaceans in the Northern Gulf of Mexico from 2010–2014 which determined that the Deepwater Horizon oil spill is the most likely explanation of the persistent, elevated stranding numbers of cetaceans in the Gulf of Mexico. It also found that evidence supports that exposure to Deepwater Horizon pollution was the most likely explanation for adrenal and lung disease in dolphins, and increased foetal loss. In research published in April 2016, scientists stated that 'exposure to petroleum compounds following the Deepwater Horizon oil spill severely harmed the reproductive health of dolphins living in the oil spill footprint in the northern Gulf of

46 International Fund for Animal Welfare, *Submission 29*, p. 5.

47 International Fund for Animal Welfare, *Submission 29*, p. 5.

48 Volatile hydrocarbons are compounds that are either gases or liquids that can evaporate and act as a gas.

49 NOPSEMA, *Submission 7*, Attachment 6, p. 73.

50 The Wilderness Society, *Submission 43*, p. 33.

51 International Fund for Animal Welfare, *Submission 29*, p. 5. See also Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 31.

Mexico'. In addition, 'Gulf of Mexico bottlenose dolphins were particularly susceptible to late term pregnancy failures, signs of foetal distress and development of in utero infections including brucellosis'.[52]

5.47 Mr Collis, IFAW, stated that:

> The true extent of impact on marine mammals from the Deepwater Horizon spill in the Gulf of Mexico is only just coming to light. Over 1,500 whales and dolphins are stranded since the Gulf of Mexico spill. To put that in context, the historical average in the affected region is six strandings per year. The huge death toll represents a minimum number of animals that have died as a result of that spill, since not all animals that have died will wash ashore or be found. Scientists studying historical stranding rates in the Gulf of Mexico have estimated that carcasses recovered after the disaster represented only two per cent of spill related deaths. Therefore the actual death toll could be up to 50 times higher. Any large spill in the bight will likely see similar impacts on whales and dolphins in terms of lethal and sublethal injuries and extended periods of disease and mortality, and whales being forced to relocate away from biologically important habitat.[53]

5.48 Ms Kathryn Warhurst, Conservation Council of South Australia, told the committee that if the main nursery areas for the southern right whales along the coastline of South and Western Australia are polluted during an oil spill 'then you are going to have a whole bunch of southern right whales that are likely to have significant issues in reproduction and ongoing health issues'.[54]

5.49 Sea Shepherd Australia stated that:

> A spill in the GAB would be catastrophic to the southern right whale population. It would destroy the whale nursery where the mothers give birth and nurture their young. Southern right whales either skim along the ocean filtering the water for food or at times, are bottom feeders. Either way, a spill would annihilate the population of southern right whales still recovering from the commercial whaling era.[55]

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52 National Oceanic and Atmospheric Administration, http://www.nmfs.noaa.gov/pr/health/mmume/cetacean_gulfofmexico_results.html, (accessed 15 February 2017). See also International Fund for Animal Welfare, *Submission 29*, p. 5.

53 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 27. See also International Fund for Animal Welfare, *Submission 29*, p. 1 and p. 5.

54 Ms Kathryn Warhurst, Conservation Council of South Australia, *Committee Hansard*, 28 April 2016, p. 19.

55 Sea Shepherd Australia, *Submission 18*, p. 4.

5.50 The Wilderness Society noted that following the Exxon Valdez spill, some whale species such as bowhead whales were observed avoiding oil contaminated areas, however other species such as killer whales were seen swimming through oil slicks. Following the spill, 22 killer whales died—a single pod lost seven members in the first week, and seven or eight over the next two years.[56]

Intertidal and seabed flora and fauna

5.51 Intertidal flora and fauna are particularly at risk if an oil spill reaches the shoreline. This includes: mangroves; saltmarshes; coral reefs; seagrass beds; macroalgal stands and their inhabitants; filter feeding organisms such as sponges, and soft corals and their inhabitants; inhabitants of rocky and sedimentary shores; microalgal assemblages such as stromatolites and rhodoliths; and any other living organisms and assemblages that occur on the seabed or seashore.[57]

5.52 Oil can cause mortality in flora through smothering caused by oil covering photoreceptors and pores for oxygen exchange. Mangroves, which are dependent on oxygen supplied through pores in aerial roots, are particularly susceptible to smothering. In mangroves, it has been found that toxic compounds present in oil can also damage cell surfaces in subsurface roots, impair the plant's salt exclusion process and interfere with the plant's ability to maintain a salt balance. Seagrasses have also been found to blacken when in contact with oil, and have lowered rates of growth.[58]

5.53 Intertidal habitats such as mangroves, coral reefs and rocky shores also encompass microhabitats such as rockpools, overhangs, cracks and crevices which are populated by soft bodied sessile animals such as sea anemones, sponges, echinoderms, and sea squirts. They also provide refuges for molluscs, crustaceans and fish. Though oil on the surfaces of these shores is often quickly washed away, it can concentrate in these habitats and cause considerable damage to both flora and fauna.[59]

5.54 Seabed flora and fauna inhabiting sedimentary shores or in seabed sediments in both intertidal and subtidal zones are also susceptible to being smothered by oil, particularly at low tide. Oil can penetrate sediments killing resident fauna such as crabs and worms, and can coat molluscs, barnacles, and bivalves on the sediment surface. Oil can persist and remain toxic in sediments for many years and can inhibit seed establishment and asexual vegetative seasonal growth in a number of flora species. NOPSEMA noted that the long term effect of residual oil has been well documented in the northern hemisphere. For example, the survival and growth rates of

56 The Wilderness Society, *Submission 43*, p. 33.

57 NOPSEMA, *Submission 7*, Attachment 6, p. 70.

58 NOPSEMA, *Submission 7*, Attachment 6, p. 70.

59 NOPSEMA, *Submission 7*, Attachment 6, p. 70.

intertidal clams and fish were still affected more than five years after the Exxon Valdez spill.[60]

5.55 NOPSEMA also noted that following the Deepwater Horizon oil spill, there has been a documented decline in the health of corals present in the area. It stated that studies have found that dinoflagellate[61] function has been affected by both exposure to oil and dispersants. Studies have also found that coral larval fertilisation, metamorphosis and survival have been affected by exposure to oil and dispersants. NOPSEMA also noted that greater investigation of the impact of exposure to oil on corals and other seabed flora and fauna in deep water habitats is warranted.[62]

5.56 Sea Shepherd Australia noted the rich biodiversity of the Great Australian Bight and stated that high density zooplankton communities support the highest densities of small fishes in Australian waters.[63] It noted that following the Deepwater Horizon disaster, there was a 'massive die-off' of foraminifera—microscopic organisms at the base of the food chain. It also noted that other studies have shown that plankton have been killed by oil and dispersants, or have absorbed PAHs before being consumed by other marine life.[64]

Fish and fisheries

5.57 Oil spills have a wide range of negative effects on fish and fisheries including on the development and survival of eggs, embryos and larvae. NOPSEMA noted that though mass mortalities are rarely observed in mobile species of fish, seabed fish and fisheries species, and strongly habitat associated demersal fishes are more likely to be affected.[65]

5.58 NOPSEMA noted that the direct impacts of an oil spill on fish are likely to be greatest for eggs, embryos, and larvae as they are particularly sensitive to pollution events. For example, toxic compounds such as polycyclic aromatic hydrocarbons can affect the growth, development and survival of embryos and larvae. Oil in sediment on the seabed is likely to affect seabed egg-layers such as damselfishes, squid and trigger fishes while contaminated surface waters are likely to affect pelagic fish species.[66]

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60 NOPSEMA, *Submission 7*, Attachment 6, p. 70.

61 Dinoflagellates are microscopic unicellular algae which often have a mutually beneficial symbiotic relationship with corals.

62 NOPSEMA, *Submission 7*, Attachment 6, p. 70.

63 Sea Shepherd Australia, *Submission 18*, p. 1.

64 Sea Shepherd Australia, *Submission 18*, p. 8.

65 NOPSEMA, *Submission 7*, Attachment 6, p. 71.

66 NOPSEMA, *Submission 7*, Attachment 6, p. 71.

5.59 Mariculture operations[67] are inherently vulnerable to the effects of an oil spill as fish are unable to actively avoid pollution. Intertidal mollusc mariculture operations are considered particularly vulnerable to the effects of an oil spill, with long term effects likely where oil is retained in sediment.[68] Greenpeace Australia Pacific noted that following the Exxon Valdez spill, the area's salmon populations were found to have stunted growth and lower survival rates, and highlighted the implications for the Great Australian Bight's fisheries.[69]

5.60 Mariculture operations are also vulnerable to tainting, which renders fish and molluscs unfit for consumption. Tainting refers to the uptake of oil derived substances in the tissues of the fish or molluscs, and which creates an odour and flavour which is foreign to the food product. It can occur through either direct absorption from contaminated water and sediments, or indirectly through the consumption of contaminated prey species. Bivalve molluscs, such as oysters, and fish with high fat content such as tuna are particularly prone to tainting, and have a high bioaccumulation potential. Tainting also has the potential to considerably damage the fisheries and aquaculture industries, as consumers may avoid purchasing seafood for long periods of time—even after levels of hydrocarbons in fish tissue have been found to return to normal.[70]

Ecosystems and habitats

5.61 Oil spills have the potential to significantly affect the functions of an ecosystem through changes in habitat, and changes in predator-prey relationships. Populations which rely on specific habitat features for feeding, breeding and nursing young are likely to be significantly affected. For example, a reduction in the availability of prey species is likely to affect the health and survival of higher order consumer species.[71]

5.62 The Wilderness Society submitted that

> Apex predators, particularly those that are long lived, can also be especially impacted by toxic oil spill pollution. Some animals that are high on the food chain already experience the effects of bioaccumulation of persistent organic pollutants through bio-magnification. This continues in each predator-prey interaction, and animals at the top of the food chain, such as southern bluefin tuna, great white sharks and toothed whales, as well as humans, can accumulate high levels of these toxins.[72]

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67 Mariculture is a specialised branch of aquaculture involving the cultivation of marine species in enclosed sections of the ocean. For example, tuna and salmon farming, and oyster production.

68 NOPSEMA, *Submission 7,* Attachment 6, p. 71.

69 Greenpeace Australia Pacific, *Submission 22*, p. 3.

70 NOPSEMA, *Submission 7,* Attachment 6, p. 71.

71 NOPSEMA, *Submission 7*, Attachment 6, p. 73.

72 The Wilderness Society, *Submission 43*, p. 28.

5.63 A number of submitters highlighted the importance of natal site fidelity in species common in Great Australian Bight, and the impact that an oil spill would have on that behaviour. IFAW stated that there would be 'longer-term repercussions if specific breeding or calving sites were impacted'.[73] Similarly, the Humane Society International noted that:

> As an endemic species found only in South and Western Australia, the Australian Sea Lion stands to be significantly impacted by an oil spill, as females have high site fidelity to breeding locations and feeding locations, making them unable to avoid the impacts of such a spill should one occur.[74]

5.64 Ms Kathryn Warhurst from the Conservation Council of South Australia similarly told the committee that:

> South Australia has 85 per cent of the Australian sea lion population in the world. The other 15 per cent is in Western Australian waters. A large part of that area would be catastrophically impacted if there were a spill…if there were any kind of significant event, I think it would be game over for that species, or it would be very likely to be game over. The way this species operates, too, is that it has a lot of genetically unique subpopulations. If these subpopulations are knocked out, if there is a major mortality event, they do not go back to those areas, because the females only go back to breed where they were born. So there will be no re-immigration from other sea lion populations. That area will effectively be dead to sea lions, so that just will not be an option in terms of recovery in the future.[75]

5.65 Mr Lyndon Schneiders, The Wilderness Society, told the committee that the Great Australian Bight is a unique oceanic system with 'huge subsea canyons' on the edge of the continental shelf. Mr Schneiders explained that:

> Those subsea canyons drive what is called deepwater upwellings. What happens is that huge amounts of phytoplankton is driven from deep below the surface up to the shallows. That is what drives the southern Australian marine environment. That is why there are so many big whales that move through there. That is why, for instance, the big pelagic species like the southern bluefin tuna and others move through, because they of course feed on the pilchards that feed on the zooplankton. Zooplankton is the base of the food chain. Zooplankton is also very sensitive to oil.[76]

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73 International Fund for Animal Welfare, *Submission 29*, p. 4.

74 Humane Society International, *Submission 3*, p. 2.

75 Ms Kathryn Warhurst, Conservation Council of South Australia, *Committee Hansard*, 28 April 2016, pp. 18–19.

76 Mr Lyndon Schneiders, The Wilderness Society, *Committee Hansard*, 28 April 2016, p. 33.

5.66 NOPSEMA noted that outside of predator-prey relationships, oil spills are likely to have other flow-on effects on marine ecosystems. For example, seagrasses and mangroves provide important habitat to a number of fauna species. These flora assemblages also provide crucial services such as fish nursery habitats, and damage from oil spills is likely to affect ecosystems beyond the immediate habitat.[77]

5.67 NOPSEMA also noted that a number of species are involved in maintaining water quality through the removal of detritus from the water. If species such as amphipods and fiddler crabs are removed from an area, decomposition may significantly slow and water quality is likely to be affected. Similarly, the removal of species such as crabs and starfish which predate on snails and mussels may alter an ecosystem's grazing balance and create competition for space. [78]

5.68 Long-term changes in the abundance and diversity of both flora and fauna species have been seen following oil spills. For example, following the Prestige oil spill in Spain there were found to be decreases in the biomass, size and species abundance of algae in rocky shore assemblages six months after the spill. However, in the longer term there was an increase in richness and diversity as a result of changes in the abundance of dominant species. Species replacement has also been observed in experimental oil spill research on saltmarsh plants conducted in Wales, which saw the elimination of species such as the sea rush Juncus, and the flourishing of the oil tolerant fast-growing creeping grass Agrostis. NOPSEMA stated that 'the flow-on effects of an oil spill on biological assemblages should not be underestimated'.[79]

5.69 The Humane Society International submitted that:

> However for many of the threatened species found in the Great Australian Bight, there is still little scientific research to be able to identify critical habitat. As a result the impacts of oil or gas development in the area are likely to be more severe than current scientific knowledge suggests, with significant implications when considering exploration or drilling activities or should an oil spill occur.[80]

77 NOPSEMA, *Submission 7*, Attachment 6, pp. 73–74.

78 NOPSEMA, *Submission 7*, Attachment 6, p. 74.

79 NOPSEMA, *Submission 7*, Attachment 6, p. 74.

80 Humane Society International, *Submission 3*, p. 2.

Human health

5.70 Concerns were raised in relation to the potential for human health to be negatively affected through the consumption of contaminated seafood. The Clean Bight Alliance Australia also raised concern that dispersants used during cleanup activities can have a toxic effect on both the residents of contaminated areas, and those engaged in clean-up activities.[81]

5.71 In BP's Environment Plan summary, it acknowledged that concerns regarding the toxicity of dispersants had been raised during public consultations. In particular, references were made to the impact of dispersants used during the Deepwater Horizon incident. BP stated that it provided information on the kinds of dispersant that may be used in the Great Australian Bight in the event of a spill. It also noted that the Australian Oil Spill Control Agents (AOSCA) Register sets requirements for the toxicity and efficacy testing of dispersants prior to approval for use in Australia.[82]

81 Clean Bight Alliance Australia, *Submission 23*, p. 5.

82 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 21.

Chapter 6

Capacity to prevent, and mitigate the effect of an oil spill

6.1 This chapter explores the capacity of government and private interests to mitigate the effect of an oil spill in the Great Australian Bight. A number of submitters raised concerns that BP lacked the capacity to effectively prevent and contain an oil spill. Many of these submitters referenced BP's response to the Deepwater Horizon disaster, and Australia's response to the Montara oil spill.

6.2 The committee also received evidence from BP, the Australian government, and response agencies such as the Australian Marine Oil Spill Centre (AMOSC) detailing response and recovery strategies which would be implemented in the event of an oil spill.

Regulatory requirements

6.3 The regulatory requirements in relation to oil spills are provided for in a range of legislative instruments and policies.

Oil Pollution Emergency Plans

6.4 As has been noted in Chapter 2, the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* require a titleholder to prepare and maintain an Environment Plan. The Environment Plan must have an implementation strategy that must include an oil pollution emergency plan (OPEP). The OPEP provides details of response and monitoring arrangements in the event of an oil spill based on the unique characteristics of both the proposed activity, and the surrounding environment. The OPEP must include information on control measures, response capability, and monitoring capability. It is intended to ensure that the titleholder has demonstrated its ability to quickly and effectively respond in the event of an oil pollution emergency.

6.5 Assessment and approval of the OPEP is a critical part of the Environment Plan assessment process conducted by National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). An OPEP must include the following information:

- the control measures necessary for the timely response to an oil spill emergency. The control measures include the systems, equipment, personnel and procedures;
- the arrangements and capability that will be in place for the duration of the offshore activity to ensure the timely and effective implementation of control measures. This includes arrangements for ongoing maintenance of response capabilities;
- the arrangements and capability that will be in place to monitor the effectiveness of control measures in the event of deployment; and

- the arrangements and capability to monitor oil pollution to inform response activities.[1]

6.6 OPEPs are considered to be living documents and are required to be reviewed and updated throughout the lifetime of the offshore activities to ensure the currency of response arrangements and capabilities. The OPEP along with other aspects of the Environment Plan are regularly inspected for compliance by NOPSEMA.[2]

Offshore Petroleum and Greenhouse Gas Storage Act 2006

6.7 The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) and associated regulations establish a titleholder's responsibilities in relation to incident notification to both the NOPSEMA and potentially affected states and the Northern Territory. The regulatory regime also provides NOPSEMA, or the responsible Commonwealth Minister, to direct titleholders to take specific actions in response to incidents. It also requires the titleholder to clean-up and monitor the impact of an oil spill.[3]

6.8 The OPGGS Act also requires a titleholder, at all times while the title is in force, to maintain financial assurance sufficient to give the titleholder the capacity to meet costs, expenses and liabilities airings in connection with the carrying out of an oil and gas activity in the title area. The Department of Industry, Innovation and Science noted that 'the requirement is intended to ensure that the titleholder will have the capacity to meeting extraordinary costs, expenses and liability that go beyond the normal operational and commercial costs of engaging in the offshore oil and gas sector'.[4]

6.9 In the event of a titleholder failing to fulfil their obligations in managing an incident, NOPSEMA, or the responsible Commonwealth Minister, may carry out the failed actions. However, the titleholder remains financially liable for the costs associated with these actions.[5]

6.10 In the event of an offshore oil and gas environmental incident, the titleholder has responsibility under the OPGGS Act for emergency response.

- titleholders are required to report any incident to NOPSEMA within two hours of the first occurrence, or first detection of the occurrence, of the incident; and
- titleholders operate as the Control Agency in responding to a spill, as per their oil pollution emergency plan.

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1 South Australian Government, *Submission 44*, pp. 6–7.

2 NOPSEMA, *Submission 7*, p. 27. See also South Australian Government, *Submission 44*, p. 7.

3 AMSA, *Submission 2*, Attachment 1, p. 22.

4 Department of Industry, Innovation and Science, *Submission 4*, p. 25.

5 AMSA, *Submission 2*, Attachment 1, p. 22.

6.11 Under the OPGGS Act an oil and gas titleholder must do the following:

- take all reasonably practicable steps to eliminate or control the escape of oil and gas, as soon as possible after becoming aware of it;
- clean up the escaped oil and gas and remediate any resulting damage to the environment; and
- carry out environmental monitoring of the impact of the escape on the environment.[6]

National Plan for Maritime Environmental Emergencies

6.12 The National Plan for Maritime Emergencies[7] (the National Plan) sets out national arrangements, policies and principles for the management of maritime environmental emergencies. It provides a single, national, comprehensive and integrated response for minimising the impacts of marine pollution from spills and other maritime emergencies on: the environment; the community, cultural and heritage resources, the economy, and infrastructure.[8]

6.13 The National Plan has been operational since 1973 and is a cooperative arrangement between Commonwealth and state/Northern Territory governments and industry. It recognises that there is a need to maintain a shared responsibility in order to respond to spills in a timely and effective manner.[9] The National Plan, in part, provides:

- detailed national, state, local and industry plans and communication arrangements for responding to oil pollution incidents;
- an adequate level of pre-positioned spill combating equipment, commensurate to the risk involved; and
- a comprehensive competency-based national training program which includes exercises.[10]

6.14 Marine pollution response plans are prepared by Commonwealth and state/Northern territory governments, and operators of offshore facilities. These plans contain the detailed arrangements required to implement the National Plan. NOPSEMA is recognised under the National Plan as the primary regulator of offshore

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6 Department of Industry, Innovation and Science, *Submission 4*, p. 26.

7 The National Plan can be found as Attachment 1 to AMSA, *Submission 2*.

8 AMSA, National Plan for Maritime Environmental Emergencies, https://www.amsa.gov.au/environment/maritime-environmental-emergencies/national-plan/, (accessed 22 February 2017).

9 AMSA, *Submission 2*, p. 1.

10 AMSA, National Plan for Maritime Environmental Emergencies, https://www.amsa.gov.au/environment/maritime-environmental-emergencies/national-plan/, (accessed 22 February 2017).

petroleum activities. The National Plan also recognises offshore titleholders as Control Agencies responsible for ensuring that they have appropriate emergency response arrangements commensurate to the risk associated with their operations.[11]

6.15 The Australian Maritime Safety Authority (AMSA) is responsible for managing the National Plan. It also represents the Australian Government at the International Maritime Organisation (IMO) in relation to Australia's obligations under the *International Convention on Oil Pollution Preparedness, Response and Co-operation 1990* (OPRC Convention) and the *Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000* (OPRC-HNS Protocol).[12]

6.16 AMSA's functions include:

- maintaining the National Plan, and Commonwealth contingency plans;
- managing the National Response Team, including training and development;
- providing a national response equipment capability;
- coordinating the national training programme;
- maintaining uniform standards and testing protocols for oil spill dispersants and other chemical response agents;
- management of trajectory modelling; and
- managing the national fixed-wing aerial dispersant contracts.[13]

Titleholder strategies and response organisations

6.17 BP's Environment Plan Summary provides an overview of the strategies it proposed to employ in the event of a blowout[14]. In addition, two organisations, Oil Spill Response Limited (OSRL) and AMOSC, are able to provide oil spill response and cleanup services.

BP's Oil Spill Response Planning Strategic Overview

6.18 On 15 September 2016, BP released its Oil Spill Response Planning Strategic Overview[15] (Strategic Overview) in conjunction with its oil spill modelling for

11 AMSA, *Submission 2*, p. 2.

12 AMSA, *Submission 2*, p. 2.

13 AMSA, *Submission 2*, p. 2.

14 A blowout is an uncontrolled release of crude oil and/or natural gas after pressure control systems have failed. Most oil rigs are now equipped with blowout preventers, however as seen in the Deepwater Horizon incident, these can fail.

15 This document can be found at http://www.bp.com/content/dam/bp-country/en_au/about-us/what-we-do/exploring-great-australian-bight/oil-spill-response-planning-strategic-overview.pdf

Stromlo-1 and Whinham-1. The Strategic Overview outlined BP's response strategies which can be divided into four planning zones: source, at-sea, near-shore, and shoreline.

6.19 BP's source control strategies included:

- the closure of the blowout preventer;
- the deployment of a remote operational vehicle;
- the deployment of capping stack technology; and/or
- the drilling a relief well.[16]

6.20 While source control activities are underway, BP stated that a range of at-sea response strategies would also be deployed. These included:

- subsea dispersant injection;
- surface dispersant application;
- containment and recovery and in-situ controlled burning.[17]

6.21 In the event that oil which has not been successfully dispersed, contained or removed near the source is likely to move towards the coastline. BP developed a range of near-shore response strategies which included:

- the deployment and use of strike team vessels with booms and skimmers to contain collect floating oil; and
- working with aquaculture operators to relocate stock.[18]

6.22 In the event that oil reaches the shoreline, BP developed a range of clean-up strategies. These were divided into three phases:

- Stage One – bulk oil removal from the shoreline;
- Stage Two – removal of stranded oil and oiled shoreline material; and
- Stage Three – clean-up of light contamination, and the removal of stains.[19]

6.23 BP also developed an oiled wildlife response strategy which firstly aimed to reduce the number of affected animals by preventing them from entering the

16 BP, *Oil spill response planning strategic overview*, 9 September 2016, p. 7. http://www.bp.com/content/dam/bp-country/en_au/about-us/what-we-do/exploring-great-australian-bight/oil-spill-response-planning-strategic-overview.pdf, (accessed 15 February 2017) . See also The Wilderness Society, *Submission 79*, Attachment 1.

17 BP, *Oil spill response planning strategic overview*, 9 September 2016, p. 9. See also The Wilderness Society, *Submission 79*, Attachment 1.

18 BP, *Oil spill response planning strategic overview*, 9 September 2016, pp. 9–11. See also The Wilderness Society, *Submission 79*, Attachment 1.

19 BP, *Oil spill response planning strategic overview*, 9 September 2016, p. 12. See also The Wilderness Society, *Submission 79*, Attachment 1.

contaminated area, and capturing and removing animals at risk. Secondly, the strategy sought to maximise the number of animals successfully treated and rehabilitated. Finally, the strategy included measures to collect dead and dying wildlife to reduce the risk of secondary exposure.[20]

6.24 BP submitted that it also had access to response and recovery equipment from a number of sources including:

- OSRL which can provide capping and containment equipment, debris removal and dispersant equipment;
- AMOSC which can provide Australian Remote Operational Vehicle (ROV) tooling, debris removal and dispersant equipment package; and
- BP containment response equipment and tools.[21]

Oil Spill Response Limited (OSRL)

6.25 OSRL is an industry-owned organisation which provides oil spill response and cleanup services to members, including BP. In particular, the Subsea Well Intervention Services (SWIS) provides OSRL members access to a full subsea intervention capability which includes dispersant, capping, and containment. SWIS includes four capping stacks which are used to shut-in an uncontrolled subsea well, and hardware kits to clear debris and apply dispersant. BP submitted that the four capping stack systems are located around the world, and for a response in Australia, the capping stacks located in Singapore and Norway would be mobilised.[22]

Australian Marine Oil Spill Centre

6.26 AMOSC, a not-for-profit marine spill response organisation wholly owned by the Australian Institute of Petroleum (AIP) provided the committee with a detailed submission which outlined the capabilities and resources available in the event of an oil spill. AMOSC stated that it 'considers there is currently a robust, proven and highly coordinated capacity to mitigate the effect of an oil spill in Australia.'[23]

6.27 AMOSC stated that the capacity to mitigate the effect of an oil spill is underpinned by:

- oil spill response plans, preparedness and coordination at AMOSC, and national and international levels;
- full-time AMOSC staff of 12, dedicated to oil spill preparedness and response;

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20 BP, *Oil spill response planning strategic overview*, 9 September 2016, p. 13. See also The Wilderness Society, *Submission 79*, Attachment 1.

21 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 8.

22 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 8.

23 AMOSC, *Submission 11*, p. 2.

- established core group (120 personnel) of highly trained Australian experts drawn from member companies to respond to a spill;
- the establishment, availability and location of specialised oil spill response equipment;
- maintenance of international linkages to access capabilities and expertise;
- the adoption of international best practices, regularly audited and tested via annual exercises;
- a particular focus on Australian locations of higher risk for oil spills;
- services of AMOSC also available to non-members through the National Plan; and
- appropriate industry resourcing of oil spill preparedness and response capability.[24]

6.28 AMOSC operates the Australian oil industry's major oil spill response facility with a stockpile of response equipment, and dedicated staff. AMOSC maintains stockpiles of equipment around the country with the main stockpile located in Geelong, three located in Perth, and additional stockpiles in Exmouth and Broome.

6.29 The stockpile in Geelong includes oil spill combat equipment, and containerised facilities to treat oiled wildlife. AMOSC stated that it has:

> …procured two specialised and portable oiled wildlife treatment containers designed to work in hot and cold areas, and to be deployed in a very short time to a wildlife refuge centre. The wildlife containers constitute the formation of a treatment 'village' very similar to the wildlife model used successfully to treat thousands of animals during the New Zealand *CV Rena* response (2011).[25]

6.30 As earlier noted by BP, AMOSC owns and coordinates the industry's subsea intervention equipment. This equipment is used to:

> …undertake a seabed survey, clear debris away from the well-head, undertake Blow out Preventer intervention, and prepare the surrounding seabed for the arrival of a capping stack. The last intervention capability this equipment enables is the deployment of dispersant at the well head—this is made possible with additional equipment and tubing (provided by the RP) but the essential (long lead for delivery) mechanical pieces are in place to use dispersant subsea.[26]

6.31 AMOSC also submitted that it owns 500m^3 of dispersant which is capable of treating between 5–10 days of a free flowing subsea incident. It noted that should

24 AMOSC, *Submission 11*, p. 2.

25 AMOSC, *Submission 11*, p. 12.

26 AMOSC, *Submission 11*, p. 12.

further dispersant be required, domestic and international stocks would be sought. It stated that in addition, since 1996 there has been a contract arrangement through AMSA for the provision of six Fixed Wing Aerial Dispersant aircraft capable of deployment out to 200 nautical miles offshore. These aircraft are available to all AMOSC member companies, and the contract also allows for the provision of additional aircraft in the event that dispersant becomes the primary response strategy.[27]

6.32 AMOSC commented that as an oil spill response organisation, it is subject to annual external audits to assess and ensure that its operational capabilities are fit for purpose. It stated that these audits also prove industry's capacity to adequate respond to oils spills for regulatory purposes. AMOSC also stated that it utilises an international assessment tool called RETOS which rigorously assesses its preparedness and response capacity. It noted that according to RETOS, AMOSC is a fit-for-purpose response organisation.[28]

6.33 BP also submitted that it has access to the Subsea First Response Toolkit (SFRT) through AMOSC. The SFRT is similar to the equipment available through OSRL, however it is stored in Fremantle, Western Australia.[29]

BP containment response equipment and tools

6.34 BP told the committee that its own containment response equipment and tools are complementary to those services provided by OSRL and AMOSC. It stated that following the Deepwater Horizon incident, a set of response and support equipment was assembled and can now be rapidly mobilised via airfreight from Texas to any of its operating sites. In addition, BP submitted that in the event of drilling occurring in the Great Australian Bight, it would maintain an inventory of oil spill response equipment at its Adelaide supply base.[30]

6.35 Ms Claire Fitzpatrick, Managing Director, Exploration and Production, BP, outlined to the committee where response equipment would be available in the event of an oil spill in the Great Australian Bight. Ms Fitzpatrick stated:

> There is equipment in a number of places. There will be equipment on the rig, there will be equipment on the supply vessels which will be in the area and there will be equipment at the supply base in Port Adelaide. We are members of the AMOSC First Response Toolkit, which does have kit in both Geelong and Freo, and we also have kit both in our warehouses in Houston and we have access through OSRL, which is an industry-wide

27 AMOSC, *Submission 11*, pp. 12–13.

28 AMOSC, *Submission 11*, p. 14.

29 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 9.

30 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 9.

> consortium, in Singapore. So equipment will come from a number of places, but we will have stuff in South Australia available immediately.[31]

6.36 BP also commented that its internal standard requires the BP Containment and Response Team to mobilise and deploy a stacking cap, and containment equipment within 35 days. Ms Fitzpatrick stated:

> …our internal standard of requirement is that we will not drill a well unless we are comfortable and confident that we are able to cap it within 35 days. We actually think we can do it faster than that; it is probably nearer to 20, but our internal standard is 35 and, therefore, our environmental plan has made reference to a 35-day scenario for the capping stack to be in place.[32]

6.37 BP noted in its Environment Plan summary that it had conducted logistics studies on the schedule for the mobilisation and installation of OSRL capping stacks located in Singapore and Norway. It submitted that preparatory work such as debris removal will need to occur in anticipation of the arrival of this OSRL equipment, and BP equipment based in Texas. BP concluded that:

> Detailed logistical studies have demonstrated that the transportation of the capping stack is not on the critical path for capping the well, as it is anticipated that it will be delivered in situ whilst preparatory work is being completed.[33]

6.38 BP also submitted that each well to be drilled would have an individual Relief Well Plan to be implemented in the event of a blowout. The drilling of a relief well would occur parallel to the deployment of well capping and containment activities. The Environment Plan Summary provided to the committee stated that BP estimated it would take 149 days to kill the well. However it noted that this estimate was based on a worst-case time forecast.[34]

Concerns with the adequacy of oil spill response strategies

6.39 Submitters questioned whether industry and government would be able to adequately respond to an oil spill in the Great Australian Bight. The Australian Marine Conservation Society (AMCS) commented that it did 'not believe government or private interests have the capacity to swiftly or adequately mitigate the effect of an oil spill'.[35]

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31 Ms Claire Fitzpatrick, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 44.

32 Ms Claire Fitzpatrick, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 43.

33 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 10.

34 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 10.

35 Australian Marine Conservation Society, *Submission 19*, p. 3.

6.40 The AMCS and many other submitters pointed to the harsh weather conditions and the remoteness of coastal areas in the Bight and argued that this will hamper efforts to prevent an oil spill, and clean-up activities. For example, the Conservation Council of South Australia submitted that:

> …BP outlined a 35-day process to cap wells should a loss of well control be experienced in its Great Australian Bight operations. Conservation Council SA considers that this is an overly optimistic response time and is manifestly inadequate: the Great Australian Bight is a most physically challenging area in which to conduct operations.[36]

6.41 Concerns were also raised in relation to the type of response equipment available and the length of time required in deploying response equipment. Mr Matthew Collis, International Fund for Animal Welfare (IFAW) commented that:

> In IFAW's view there remain major question marks over the capacity to respond to a catastrophic oil spill in the bight. The bight is a harsh marine environment, meaning that the ability to successfully deploy responses such as oil containment and recovery is severely limited. There is also a big question mark over whether BP or government agencies have access to sufficient manpower to successfully undertake manual cleaning across potentially hundreds of kilometres of remote and sparsely populated coast in the event of oil reaching the shore.[37]

6.42 Submitters also pointed to the response to the Deepwater Horizon incident, both in relation to the time it took to cap the well and its location in relatively calm waters near to major industrial areas. IFAW, for example, noted that it took:

> …several attempts and nearly three months to cap the Deepwater Horizon well, which was located in waters as much as 1,500m shallower than the deepest locations in the proposed GAB site.[38]

6.43 The Conservation Council of SA also commented on the Deepwater Horizon incident and noted:

> BP's most recent marine oil disaster occurred on the doorstep of a highly populated oil industry region. Virtually all the infrastructure, supplies and staff used in the containment efforts were on hand. Sadly, this proved ineffective in mitigating the impacts of the oil on local fisheries, tourism and ecosystems. In comparison, the Great Australian Bight has a low population base, extremely limited infrastructure, and hundreds of miles of high cliff and inaccessible coastline.[39]

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36 Conservation Council SA, *Submission 13*, p. 2.

37 Mr Matthew Collis, IFAW, *Committee Hansard*, 28 April 2016, p. 27.

38 International Fund for Animal Welfare, *Submission 29*, p. 2.

39 Conservation Council SA, *Submission 13*, p. 2.

6.44 A further matter in relation to Deepwater Horizon was highlighted by Greenpeace Australia Pacific. Greenpeace stated that BP was unprepared for the conditions which hampered its early attempts to stem oil flows at Deepwater Horizon and as a consequence BP used ten different techniques to try to stem the oil flow. It also stated that 'governments globally have acknowledged that the industry is alarmingly unprepared across its operations for "black swan" events—events which they deem to be unlikely, but which once they have occurred, have devastating consequences'.[40]

Weather and geography

6.45 A number of submitters highlighted the harsh wave and wind conditions which are seen in the Great Australian Bight and questioned how BP would be able to adequately respond to an oil spill in this operating environment.

6.46 The Humane Society International described the environment as 'extraordinarily rough, unpredictable and remote'[41], while Mr Jeff Hansen, Managing Director, Sea Shepherd Australia described the Great Australian Bight as having 'the biggest, roughest seas in the world.'[42]

6.47 Similarly, The Wilderness Society described it as:

> …one of the roughest bodies of water on the planet, with bigger waves and stronger winds than the Gulf of Mexico. The Southern Ocean winds are now stronger than at any other time in the past 1000 years because of climate change, according to ANU researchers.[43]

6.48 Ms Warhurst, Conservation Council of South Australia, told the committee that the geography of the Great Australian Bight would make the deployment of containment technologies such as booms and skimmers difficult. Ms Warhurst also stated that:

> …manual clean-up will be really difficult, because what we are talking about along the coastlines particularly is really high cliffs. We have stretches of cliffs that are inaccessible for hundreds of kilometres and have no good shoreline at the bottom of them, yet there are marine creatures there, so that is a significant limitation on how we can effect any clean-up.[44]

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40 Greenpeace Australia Pacific, *Submission 22*, p. 4.

41 The Humane Society International, *Submission 3*, p. 2.

42 Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 17.

43 The Wilderness Society, *Submission 79*, p. 9.

44 Ms Kathryn Warhurst, Conservation Council of South Australia, *Committee Hansard*, 28 April 2016, p. 20. See also Australian Marine Conservation Society, *Submission 19*, p. 3.

6.49 The Kangaroo Island Council submitted that personnel from AMOSC had raised concern that booms to protect coastal areas from oil would not work in the Great Australian Bight. It stated:

> Through field visits while preparing 'Tactical Response Plans' for BP, personnel from the Australian Marine Oil Spill Centre (AMOSC) have commented that the booms used to protect coastal areas from the oil will not work in our relatively exposed waters because of the size of the waves. BP has not provided an alternate solution.[45]

6.50 Mr Hansen, Sea Shepherd Australia, similarly stated that:

> If there were a spill there, it would be impossible to clean up. You cannot put these booms out and clean it up; you are just going to have to spray dispersant everywhere. Where is that going to go? It could go all over the ocean floor and destroy the whole basis of that marine ecosystem. It is just unacceptable for any company to operate in the Great Australian Bight. It is high risk.[46]

6.51 IFAW also submitted that it was concerned about the capacity to deploy mitigation responses such as oil containment and recovery in the Great Australian Bight where weather conditions are harsh. It noted that high wave heights and wind speeds are common in the region, and that in the event that oil containment and recovery options are not feasible, the only remaining options are the natural weathering of oil, and the use of dispersants. IFAW submitted that both of these options would result in oils and chemicals left to persist in the environment for considerable periods of time.[47]

6.52 BP's Oil Spill Response Planning Strategic Review acknowledged the constraints that weather and sea conditions may place on response activities. It stated:

> Both containment and recovery and in-situ controlled burning (ISB) have many operational constraints within GAB, principally due to weather and sea-state constraints, and are not expected to provide significant benefit.[48]

Personnel and access to infrastructure

6.53 A number of submitters questioned whether sufficient personnel would be available for response activities in the event of an oil spill. For example, IFAW questioned whether BP and government agencies have access to sufficient personnel to carry out the manual cleaning of remote and sparsely-populated coastlines in the event of oil reaching the shore.[49] Similarly, Mr Hansen, Sea Shepherd Australia told

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45 Kangaroo Island Council, *Submission 78*, p. 6.

46 Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 17.

47 International Fund for Animal Welfare, *Submission 29*, p. 2.

48 BP, *Oil spill response planning strategic overview*, 9 September 2016, p. 9. See also The Wilderness Society, *Submission 79*, Attachment 1.

49 International Fund for Animal Welfare, *Submission 29*, p. 2.

that committee that the Deepwater Horizon disaster required thousands of vessels, aircraft and personnel to conduct response activities. Mr Hansen questioned where BP would source similar resources in the Great Australian Bight. Mr Hansen stated:

> In contrast to the 20 clean-up boats highlighted by BP in the far rougher and more remote waters of the bight, the Gulf of Mexico disaster used 6,850 vessels, 117 aircraft, 46,000 personnel and 17½ thousand National Guard troops. If there were a spill in the bight, in far deeper, rougher waters, where is all that infrastructure going to come to support that, and who is going to pay for that?[50]

6.54 The Kangaroo Island Council likewise submitted that:

> In the Gulf of Mexico more than 6,500 boats were used in the containment and cleanup phase, plus BP had access to significant resources of the well-established oil industry operating in the adjacent shallow areas. South Australia and its neighbouring states firstly would not have that number of boats and secondly, based on the depth of the ocean and distance to the drilling site there are very few vessels (at best around 20) that can operate safely in the area.[51]

6.55 Mr Hansen also noted that there is little support infrastructure along the Great Australian Bight, which may hamper response activities in the event of an oil spill. Mr Hansen stated:

> There is very little support infrastructure along that coast. It is not industrialised. So if there is a blow-out from where is all the infrastructure going to come to relieve it? If you look at what happened in the gulf and compare the huge arsenal of ships, aircraft and people who can do work on it, and it still took 87 days to cap the well.[52]

6.56 The Wilderness Society noted that BP's oil spill response document stated that 122 people would be deployed to conduct wildlife cleaning activities and that additional volunteers could be trained 'just in time' if required. The Wilderness Society raised concern that 'this is the only reference to personnel numbers in the document and there is no reference to how much the recruitment, deployment and training of response personnel would cost or who would pay for this'.[53]

6.57 The Humane Society International raised concern that in the event of an oil spill, BP would need to access critical response infrastructure that is based in Singapore and the United States of America. It also expressed concern regarding the

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50 Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 16.

51 Kangaroo Island Council, *Submission 78*, p. 6.

52 Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 19.

53 The Wilderness Society, *Submission 79*, p. 10.

estimated 149 days required to complete the relief well, and stated that this 'would likely have catastrophic impacts on the marine environment.'[54]

6.58 Dr Andrew Hopkins, Emeritus Professor at the Australian National University similarly expressed concern that both of BP's key response strategies—capping the well and drilling a relief well— will leave the Great Australian Bight exposed to pollution for long periods of time. Dr Hopkins submitted that exercises in the Gulf of Mexico have demonstrated that locally available capping stacks have shown that a blowout can be capped in 15 days. This is in contrast to BP's plan to bring a capping stack from Singapore, a measure which is estimated to take 35 days. Dr Hopkins stated that 'in this respect, BP's estimate of time it would take to cap a blowout is a long way short of industry best practice.'[55]

6.59 Dr Hopkins also suggested that BP's proposed mitigation strategies in relation to drilling relief wells in the Great Australian Bight were 'well short of industry best practice' and that BP 'should rethink its approach to drilling relief wells.'[56] Dr Hopkins drew the committee's attention to regulation governing drilling in the Arctic which required 'that a relief rig be available nearby.' Dr Hopkins noted that when Shell proposed to drill in the Arctic, it intended on having two drilling rigs operating simultaneously so that in the event of a blowout, the other rig could quickly disconnect from the well and begin drilling a relief well.[57]

Concerns with the ability of proponents to prevent an oil spill

6.60 A number of submitters also expressed concern in relation to the conditions of the Great Australian Bight—namely the depths of its waters, and the severe weather conditions frequently experienced there—and the impact of these conditions on the safety of oil drilling.

6.61 Dr Robert Bea, Emeritus Professor at the University of California Berkeley a, provided a Quantitative Risk Assessment of the Major Accident Event Risks associated with an uncontrolled blowout in the Great Australian Bight.[58] Dr Bea used information from comparable international drilling operations, and oil spill modelling provided by Mr Laurent Lebreton to The Wilderness Society.[59] Dr Bea concluded that the risk of an uncontrolled blowout occurring during BP's exploratory drilling was not

54 Humane Society International, *Submission 3*, p. 3. See also Ms Emily Mitchell, *Submission 47*, p. 20.

55 Emeritus Professor Andrew Hopkins, *Submission 64*, p. 6.

56 Emeritus Professor Andrew Hopkins, *Submission 64*, p. 7.

57 Emeritus Professor Andrew Hopkins, *Submission 64*, p. 7.

58 Emeritus Professor Robert Bea, *Submission 73*, p. 3

59 Emeritus Professor Robert Bea, *Submission 73*. See also Mr Laurent Lebreton, *Submission 35*.

As Low as Reasonably Practicable (ALARP). However Dr Bea also stated that with additional mitigation measures, the risk could be developed to ALARP standards.[60]

6.62 With proposed drilling to occur at water depths up to 2200 metres, and at depths of up to 3000 metres into the seabed, the Humane Society International described it as 'deep-water drilling at the frontier of technical capacity'.[61] The Australia Institute noted that in comparison, the principal oil and gas fields in the North West Shelf area occur in ranges between 125 and 131 metres.[62] The Wilderness Society concluded that 'oil development in the Great Australian Bight is therefore riskier, rougher and potentially deeper than BP's Deepwater Horizon well'.[63]

6.63 However, oil and gas exploration companies responded to concerns and noted that they had been undertaking activities successfully for many years. Santos Ltd, for example, commented:

> Santos has been undertaking offshore petroleum activities for more than 30 years and, in that time, has developed an expertise in, and track-record of, safe and effective operation. The company's internal processes ensure that proposed activities in even the most challenging of offshore settings are well planned and carefully managed and, in the context of the Commonwealth waters of Australia, accepted by NOPSEMA as demonstrating that impacts and risks are reduced to ALARP.[64]

6.64 A number of submitters expressed concern that BP would be using new technology to drill in the Great Australian Bight. For example, the Kangaroo Island Council submitted that:

> The rig to be used in the GAB has been built specifically for this location as no oil exploration has ever occurred in waters as deep and as rough as the GAB. Realistically this rig is being used as a 'prototype' and the GAB as a trial location.[65]

6.65 The Kangaroo Island Council went on to comment on the specific characteristics of the proposed rig:

> The rig will not be anchored to the sea floor; it will only be connected by the drill pipe and is held in position by thrusters. The ability of these thrusters to hold the rig in position with the sea conditions that occur in the GAB will not be tested until the drilling is actually underway. Nor is it

60 Emeritus Professor Robert Bea, *Submission 73*, p. 3.

61 The Humane Society International, *Submission 3*, p. 2.

62 The Australia Institute, *Submission 37*, p. 3.

63 The Wilderness Society, *Submission 43*, p. 36.

64 Santos Ltd, *Submission 16*, p. 9.

65 Kangaroo Island Council, *Submission 78*, p. 5.

known what impact rig movement from wind, wave and swell exposure has on the integrity of the drill pipe.[66]

Lessons learnt from Deepwater Horizon

6.66 The Deepwater Horizon disaster was raised throughout the conduct of the inquiry particularly in the context of BP's ability to both prevent, and recover from an oil spill. Concerns included BP's risk management culture, and whether BP had implemented recommendations from investigations of the disaster. Concerns were also raised as to whether BP had presented an Environment Plan that appropriately demonstrated that it had managed the risk to the Great Australian Bight to the required As Low as Reasonably Practicable (ALARP).

6.67 Dr Hopkins submitted that BP's report on the Deepwater Horizon disaster had only identified technical causes not the organisational causes, and that 'unless and until these are dealt with we can have no confidence in the precautions the company proposes to take' in the Great Australian Bight.[67]

6.68 Dr Hopkins argued that a range of organisation or cultural issues contributed to the Deepwater Horizon incident. These included:

- A lack of centralisation – BP did not exercise sufficient quality control over the leaders of its business and sub-units. Dr Hopkins noted that as a result, BP created a new Safety and Operational Risk (S&OR) Function which employs staff in local business units, but who report directly to the S&OR management in London. Dr Hopkins submitted that BP needed to explain the role of the S&OR in its Great Australian Bight venture;[68]
- Risk indicators – Dr Hopkins submitted that at the time of the Deepwater Horizon incident, BP was utilising incorrect risk indicators and argued that BP needed to demonstrate that it had developed an appropriate suite of risk indicators for risks in the Great Australian Bight; [69] and
- Risk complacency – BP's employees had become complacent with respect to the risk of a blowout and believed that everything was under control. Dr Hopkins submitted that one way to overcome complacency is to 'incentivise the reporting of bad news' and noted that at the time of the disaster, BP's management had discouraged the reporting of bad news. Dr Hopkins submitted that BP needed to demonstrate how it would encourage employees to report bad news in the Great Australian Bight;[70] and

66 Kangaroo Island Council, *Submission 78*, p. 5. See also Mr Jeff Hansen, Sea Shepherd Australia, *Committee Hansard*, 16 November 2016, p. 19.

67 Emeritus Professor Andrew Hopkins, *Submission 64*, p. 2.

68 Emeritus Professor Andrew Hopkins, *Submission 64*, p. 6.

69 Emeritus Professor Andrew Hopkins, *Submission 64*, pp. 3–4.

70 Emeritus Professor Robert Bea, *Submission 73*, p. 5.

- Incentive payment schemes – BP instituted a system whereby employees at every level were required under their employment performance agreements to show evidence of having reduced costs to the company. Dr Hopkins noted that the company's official investigation into the Deepwater Horizon incident showed that on ten separate occasions, employees had accepted a higher risk in order to reduce drilling time and cost.[71]

6.69 Submitters such as Dr Bea, Sea Shepherd Australia and The Wilderness Society also noted findings by US regulators in 2016 that faulty sub-sea bolts may have been responsible for the Deepwater Horizon disaster. Sea Shepherd Australia raised concern that NOPSEMA's response to this issue was inadequate[72] while Dr Bea stated that issues associated with sub-sea bolts should be 'effectively resolved before proceeding with the proposed BP GAB drilling program'.[73]

6.70 BP provided the committee with evidence of its response to the Deepwater Horizon accident. It noted that an internal investigation into the event had made eight findings and 26 recommendations specific to drilling which BP as implemented across its worldwide drilling activities. In addition, the 'eight key findings of the Accident Investigation Report have all been directly addressed in preventative planning for operations in the Great Australian Bight'.[74] These were provided in detail in BP's submission.[75]

Senate Sarah Hanson-Young
Chair

71 Emeritus Professor Robert Bea, *Submission 73*, p. 3.

72 Sea Shepherd Australia, *Submission 81*, p. 3.

73 Emeritus Professor Robert Bea, *Submission 73*, p. 23.

74 BP Developments Australia Pty Ltd, *Submission 20*, pp. 1–2, 13.

75 BP Developments Australia Pty Ltd, *Submission 20*, pp. 17–21.

Additional comments from the Australian Greens

1.1 This inquiry has revealed the significant and unacceptable threat that drilling for oil in the Great Australian Bight represents. Furthermore, this extraordinary committee report reveals the crippling split that exists within the Australian Labor Party when it comes to protecting our natural treasures and defending against the looming impacts on climate change. The fact that some members of the Labor Party are so captured by the oil and gas lobby, to the point of obedient subservience, represents a grave threat to South Australia and our country's natural wonders such as the Great Australian Bight.

1.2 The dubious timing of election donations made by Chevron, a witness of this inquiry, to the South Australian Labor and Liberal parties draws into serious question the ability of Senators from those parties to investigate this issue fairly. It is clear that Labor Senators, and especially those from South Australia, are not capable of reporting on the conduct of this inquiry honestly as they were accepting donations from a witness while it was being conducted.

1.3 The need to protect pristine marine environments against the development of the offshore oil and gas industry has been the subject of fierce public debate for many years.

1.4 Though this inquiry followed the proposal by BP to conduct exploratory drilling in the Great Australian Bight, the concerns and issues raised more broadly addressed the current regulatory regime governing the approval of offshore oil and gas activities in Australia. It was also evident that concerns regarding the potential impact on the pristine marine environment of the Great Australian Bight apply to all oil and gas activities in the area, regardless of the proponent company.

1.5 The Australian Greens note that it is clear that the environmental, economic and social impacts resulting from the 2011 Deepwater Horizon incident in the Gulf of Mexico influenced the view held by many submitters regarding the appropriateness of offshore oil and gas activities being conducted in the Great Australian Bight. The Deepwater Horizon incident also weighed heavily on some submitters' perception of BP as a titleholder in the Great Australian Bight.

Protection of the Great Australian Bight

1.6 The Great Australian Bight is an extraordinary oceanic and coastal environment of global conservation significance. It is a place of unparalleled natural beauty and home to an array of diverse and unique flora and fauna species. Coastal communities have a deep and abiding connection to the Great Australian Bight and rely on it for both industry and recreation. The Great Australian Bight also provides not just local communities, but national and international visitors with an opportunity to experience one of the world's last pristine and unique marine wilderness areas.

1.7 As one of the last remaining intact ocean wilderness areas in the world, it provides critical habitat to a range of threatened and endangered wildlife species. It is extraordinarily rich in biodiversity, and is home to an enormous number of endemic species—some 85 per cent of species found in the region are endemic. Many of these endemic species are also listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.8 The waters of the Bight provide the most significant breeding and calving areas in Australia for the southern right whale, one of two such major calving areas in the world. It also supports an essential nursery area for the endangered Australian sea lion. The Bight provides seasonal habitat for a range of rare and endangered cetaceans such as sperm whales, killer whales and rorquals (blue, minke and humpback whales).

1.9 The Great Australian Bight also supports an array of businesses from aquaculture and fisheries, to tourism. South Australia's fishing and aquaculture production in 2010–11 was valued at $425.5 million with the region accounting for 97 per cent of production. The region's tourist industry contributed to the economy a combined $1.2 billion in 2013–14 and accounts for nearly 10,000 full time equivalent jobs.

1.10 Over the past 20 years, both the Commonwealth and the South Australian governments have worked to recognise the global conservation values of the region through the declaration of extensive protection areas. One mechanism to preserve and protect the Great Australian Bight has been the establishment of Commonwealth marine reserves. The establishment of marine reserves act to protect and maintain an area's biodiversity, including endangered and threatened species such as whales and pinnipeds, and their habitats.

1.11 The Australian Greens believe that the mechanisms currently in place acknowledge the high environmental values of the Great Australian Bight and raise the question as to why oil and gas exploration and production is permitted in such a sensitive area.

1.12 In addition, the Australian Greens note that much remains unknown about the marine environment, biodiversity and geology of the Great Australian Bight. The Australian Greens acknowledge that BP has invested in research activities. However, the Australian Greens consider that this underscores that the full impact of exploration and production, let alone an oil spill, on the Great Australian Bight is unknown.

Impacts of oil and gas exploration and production in the Great Australian Bight

1.13 While BP has withdrawn its plans to undertake exploration activities in the Great Australian Bight, other proposals remain active. In evidence to the committee, industry stakeholders put forward the arguments that the development of oil and gas reserves in the Great Australian Bight would provide a range of economic benefits for both South Australia and Australia generally. However, a range of these supposed

economic benefits were considered to be unrealistic, according to alternative evidence provided to the committee, and heroic employment claims were regularly questioned and challenged throughout the inquiry.

1.14 In relation to fuel security, supporters of the oil and gas industry commented that continued exploration and exploitation of reserves was necessary to ensure that Australia's fuel security was maintained. The Australian Greens consider that oil and gas are not the only means to meet this requirement and that renewables are now a highly viable alternative to oil and gas. In addition, unlike some overseas jurisdictions, Australia does not have a state-owned oil company. Rather, Australia's oil and gas resources are exploited by private industry which acts in response to commercial considerations and exports the vast majority of locally sourced oil and gas into the international market.

1.15 The Australian Greens also note the concern of submitters in relation to employment benefits. Oil and gas production is so highly capital intensive that purported employment benefits may not arise. In addition, many workers would be fly-in-fly- out, thus providing little economic benefit to local economies. However, the Australian Greens note that, should an oil spill accident occur, the impact on employment in South Australia would be devastating: the fishing and aquaculture industries would be severely affected and tourism would suffer.

1.16 Another argument put forward by supporters of the oil and gas industry point to royalties and tax revenues to be gained by the Commonwealth and state government. However as later discussed, evidence provided to the committee appears to counter this argument.

1.17 The committee was also provided with evidence of the environmental impacts arising from exploration and production activities. These ranged from the impact of seismic surveys on cetaceans, particularly whales, to the increased risk of vessel strike from the growth in shipping traffic. There were also concerns with the impact of drilling in the pathway of migrating cetaceans. Some of the cetaceans found the Great Australian Bight are listed as threatened, for example, the southern right whale, and any adverse impacts on their migration or calving habitat should be minimised.

1.18 The Australian Greens consider that this evidence highlights the harm associated with oil and gas activities. However, what is of greater concern is the devastation that would result from an oil spill in the Great Australian Bight.

Impacts of an oil spill in the Great Australian Bight

1.19 Oil and gas proponents argue that operations in the Great Australian Bight will be conducted with the risk reduced to as low as reasonably practicable as required under the regulatory framework. The Australian Greens are particularly sceptical of such assurances given the industry's history of catastrophic oil spills around the world. The Gulf of Mexico continues to suffer from the effects of the Deepwater Horizon disaster and is likely to continue suffering the effects for many years to come.

1.20 No enterprise is risk free; accidents do occur. Submitters pointed to the attributes of the Great Australian Bight which contributed to concerns that an oil spill was more likely to occur. These attributes included the harsh weather experienced in the Bight; remoteness of drilling sites; and the depth of the oil and gas reserves. Evidence indicated that wells would be drilled at water depths up to 2200 metres and at depths of up to 3000 metres into the sea bed; this drilling was described as 'at the frontiers of technical capacity'.

1.21 Should a blowout occur, BP stated that it could cap a well in the Bight in 35 days. This scenario was seen as optimistic by many submitters. Even if a well was capped within 35 days, many thousands of barrels of oil would be released into the Great Australian Bight.

1.22 While BP undertook modelling of an oil spill, this was not released until September 2016. In the absence of this information, The Wilderness Society commissioned its own modelling. The modelling showed that oil would impact the shores of Western Australia and South Australia and could reach the Tasmanian and Victorian coastline and move through the Bass Strait towards New Zealand. BP's own modelling of 'worst credible case' modelling was based on a 149 day oil release scenario. This modelling largely corroborated The Wilderness Society's modelling and showed the vast extent of coastline where oil could reach.

1.23 Both The Wilderness Society and BP modelling demonstrate the significant impact of an oil spill; hydrocarbons would move unrestricted across the entire area killing and injuring marine fauna and flora, including threatened and protected species, and disrupting the delicate ecosystems which support the region's tremendous biodiversity. Not only would thousands of threatened and endangered wildlife species be killed and injured but also industries important to both the South Australian and Australian economies would be devastated. The aquaculture and fisheries industries may need to be closed and it is likely that many operators would not be able to recover from such an incident. Further, an oil spill would threaten consumer perception of Australian seafood products as 'clean' and significantly impact on producers' ability to access markets.

1.24 The degree of impact of an oil spill will also depend on containment and mitigation efforts. However, the Australian Greens are also mindful that the Great Australian Bight poses particular problems for any clean-up of oil spills. These include the harsh weather conditions, the rugged and isolated coastline, the many islands, the isolation from major population centres and the lack of equipment and personnel to handle a major spill.

1.25 Given all these concerns, the Australian Greens consider that the consequences of an oil spill occurring in a pristine marine environment of the Great Australian Bight outweigh any assurances from oil and gas proponents that such an event is unlikely to occur. The Australian Greens therefore conclude that oil and gas activity occurring in the Great Australian Bight is entirely inconsistent with the need to protect the region's pristine marine environment. The Australian Greens are also of

the view that the risks associated with such oil and gas activity place the future of industries which rely on the region in significant danger.

1.26 The Australian Greens also consider that the Australian Government is out of step with other jurisdictions in protecting unique environments. In this regard, the Australian Greens note that in 2016, President Barack Obama used a 1953 law that allows the President of the United States to block the sale of new offshore drilling and mining rights to permanently ban new oil and gas drilling in most US-owned waters in the Arctic and Atlantic oceans.[1] This coincided with a similar announcement from Canadian Prime Minister Mr Justin Trudeau who declared a moratorium on new oil and gas leases in Canada's Arctic waters, subject to five yearly climate and marine science-based reviews.[2]

Recommendation 1

1.27 The Australian Greens recommend that no further oil or gas exploration or production be permitted in the Great Australian Bight Marine National Park. Further, the Australian Greens recommend that the Australian Government introduce legislation to prevent future oil and gas activities from occurring in the Great Australian Bight Marine National Park.

Regulatory regime

1.28 The offshore oil and gas industry is technically complex and its regulation requires both specialist knowledge and expertise, and the co-operation of state and Northern Territory, and Commonwealth governments.

1.29 Previously, the Department of the Environment was responsible for the environmental approvals of offshore oil and gas activities which would have an impact on Matters of National Environment Significance (MNES) under the EPBC Act. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), was established in 2011 as the independent authority responsible for the regulation of well integrity, health and safety, and environmental management for offshore oil and gas operations in Commonwealth waters. In 2014, NOPSEMA was handed responsibility for assessment and approval under Australia's national environmental law, the EPBC Act.

1.30 The establishment of NOPSEMA as a 'one-stop regulator' responsible for both environmental and safety approvals was heavily criticised by a number of submitters who argued that NOSPEMA provides a lower degree of environmental protection than the ordinary process for EPBC assessments by the Department of the Environment

1 David Smith, 'Barack Obama bans oil and gas drilling in most of Arctic and Atlantic oceans', 21 December 2016, https://www.theguardian.com/us-news/2016/dec/20/barack-obama-bans-oil-gas-drilling-arctic-atlantic.

2 FAQs on Actions being taken under the Canada-US Joint Arctic Statement, http://www.aadnc-aandc.gc.ca/eng/1482262705012/1482262722874.

and Energy, and the Minister for the Environment. For example, oil and gas proponents are required to prepare and submit an Environment Plan for approval by NOPSEMA prior to undertaking any exploration activity. This environmental approval process requires proponents to demonstrate that impacts and risks associated with oil and gas activities are reduced to As Low as Reasonably Practicable, and that all activities are consistent with relevant Commonwealth Marine Reserve Plans where applicable. However, submitters argued that NOPSEMA staff are not adequately qualified to make environmental assessments.

1.31 The Australian Greens note concerns that NOPSEMA does not have sufficient expertise to make environmental assessments but also notes the evidence it received that staff are required to obtain and maintain relevant competencies prior to undertaking lead regulatory roles, and the cooperation which exists between NOPSEMA and other government departments.

1.32 Criticisms were also made of the lack of ministerial oversight of NOPSEMA's decisions. Without ministerial oversight, NOPSEMA's environmental approvals process lacks critical public accountability and transparency measures. Offshore oil and gas activities which impact on the conservation and management of pristine marine environments are a matter of national interest. The Australian Greens believe that not only should there be a rigorous assessment of environmental and safety standards, but that the interests of the broader community should also be protected.

1.33 While oil and gas proponents may argue that undertaking oil and gas activities is in the national interest, the preservation of Australia's environmental and conservation values is also in the national interest, and should be given appropriate consideration. The Australian Greens believe that while the independence of the regulator is critical to ensuring that all assessments are made without influence or prejudice, ministerial oversight and accountability is required.

1.34 The Australian Greens consider that the approval of Environment Plans by the Minister of the Environment and Energy would improve accountability, and ensure that environmental protection is given an appropriate degree of consideration prior to the commencement of any exploration activity.

Recommendation 2

1.35 The Australian Greens recommend that the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 be amended to include a requirement for approval by the Minister for the Environment of all Environment Plans prior to the commencement of any exploratory activity and that, ultimately, the environmental assessment role of NOPSEMA be handed back to the Department of the Environment and Energy or to a National Environmental Protection Agency, established as an independent statutory authority to assess and make recommendations to the Environment Minister in relation to any environmental applications, including those for offshore oil and gas exploration, before final Ministerial approval or rejection.

1.36 The current regulatory regime was also criticised by a number of submitters for having inadequate community consultation requirements, and a lack of transparency. Criticisms were both general, and specifically directed against BP and its conduct.

1.37 Submitters raised concern that current requirements for proponent-led consultation restrict the public's capacity to engage in stakeholder consultation processes. In developing an Environment Plan, proponents are required to consult with all 'relevant persons', and are required to provide NOPSEMA with evidence that concerns raised by relevant persons have been addressed. However, unless identified as a relevant person, there is little opportunity for the general public to participate in stakeholder engagement, or raise concerns with either the proponent or the regulator. Submitters were also frustrated that access to information on proposed oil and gas activities was limited. Though the regulations require 'sufficient information' be released to stakeholders, there is no requirement for full disclosure of information such as oil spill modelling or oil spill response plans.

1.38 Submitters were particularly frustrated that BP's oil spill modelling and oil spill response plan was not publicly released until after consultation had occurred. It is unlikely that stakeholders would be able to reach an informed view on the level and nature of the impact on the marine environment, local industry and community of proposed activities, without this information. The Australian Greens believe that failure to release these crucial pieces of information highlights BP's lack of commitment to engage openly and transparently with the public, and its identified stakeholders.

1.39 The Australian Greens note that NOPSEMA is currently undertaking to develop and implement mechanisms to enhance the current regulatory framework in relation to stakeholder engagement and transparency. In particular, NOPSEMA is considering the implementation of a mandatory public comment phase at the point where a company has completed its Environment Plan which would allow interested persons to raise concerns directly with the regulator. In addition, NOPSEMA is considering whether Environment Plans could be released up-front, before a decision is made, to the extent that these plans would be released under the Freedom of Information process. The Australian Greens believe that these enhancements are vital to improving the transparency of the approvals process.

Release of information

1.40 The Australian Greens are of the view that oil and gas proponents must be required to release sufficient information to allow for informed community consultation. In order to understand the potential threats to the environment, community, human health, and local businesses and economy from a potential oil spill, the public must firstly understand the extent and reach of such an oil spill and secondly, the mitigation strategies which will be implemented.

1.41 The Australian Greens were shocked that BP did not release its oil spill modelling, and oil spill response planning overview until September 2016, after much of its public consultation had already occurred. The Australian Greens note the efforts of The Wilderness Society in commissioning oil spill modelling from Mr Laurent Lebreton in an attempt to inform its members, and other interested parties. In particular, the Australian Greens recognise the considerable expense associated with such a commissioned project and is of the view that such research should not have to fall to community groups.

1.42 The Australian Greens note that in October 2015, BP stated that it could not publish full oil spill modelling due to the commercial sensitivities of model inputs, but that the conclusions of the modelling are important matters of public consideration. The Australian Greens question why it then took BP until September 2016 to release such conclusions. The Australian Greens further question how BP, or any other proponent, could demonstrate that they had provided 'sufficient information to allow the relevant persons to make an informed decision' as required by the Environment Regulations, without having made public this information.

1.43 The Australian Greens are of the view that oil spill modelling and oil spill response planning must be released prior to public consultation to allow for informed participation. Further, to ensure compliance, this requirement should be included in the relevant legislation.

Recommendation 3

1.44 The Australian Greens recommend that the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 be amended to include a requirement for oil proponents to release oil spill modelling and emergency response plans prior to conducting public consultation during the course of preparing or revising an Environment Plan.

Public comment

1.45 The current regulatory regime relies entirely on proponent-led public consultation with titleholders engaging directly with relevant persons. The Australian Greens are of the view that such a critical aspect of the approvals process should have a direct mechanism for public consultation that does not rely on oil and gas proponents.

1.46 Given the nature of oil and gas activities and the potentially catastrophic impact on the environment, economy, human health, and local industry, it is in the public interest that consultation occurs as widely as possible. The right to raise concern should not be constrained by proponent lead consultation processes. As such, it is the Australian Greens' view that NOPSEMA should invite public comment on proposed exploratory activities during its environmental approvals process.

1.47 The Australian Greens note that offshore petroleum projects[3] are subject to a mandatory period of public comment during the Offshore Project Proposal (OPP) approvals process. The community is invited to provide comment to NOPSEMA, and the proponent is also required to publish a notice inviting comment on the OPP on its website and in national, state and regional newspapers. Proponents are required to provide a summary report to NOPSEMA which assesses the merits of each objection or claim about the project, and includes a response or proposed response to each objection or claim.[4]

1.48 The Australian Greens are of the view that the public consultation process for Environment Plans warrants the implementation of a similar mandatory public comment process. Allowing opportunities for public comment provides transparency and an opportunity for all interested members of the public to provide comment.[5]

1.49 The Australian Greens note that the Australian Petroleum Production and Exploration Association (APPEA) has been tasked with developing a best practice framework to promote effective, transparent and consistent community consultation. The Australian Greens consider that it is inappropriate that an industry body has been tasked by a regulator to carry out this critical work.

1.50 The Australian Greens consider that this does not meet community expectations of industry regulators to be both independent and transparent. Developing best practice guidelines for meeting regulatory responsibilities is the role of government rather than industry.

Recommendation 4

1.51 The Australian Greens recommend that the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 be amended to include a mandatory period of public comment during the assessment process for Environment Plans.

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3 An offshore petroleum project is a large-scale project where one or more petroleum activities are planned for the recovery of petroleum. An offshore project would not include drilling for exploration or appraisal purposes, or other petroleum exploration activities such as seismic surveys. However, all petroleum activities including those covered by an OPP require an accepted environment plan prior to proceeding. In the early stages of the design phase of an offshore petroleum project, a proponent must submit an offshore project proposal to NOPSEMA for assessment. For more information see: https://www.nopsema.gov.au/environmental-management/assessment-process/offshore-project-proposals/.

4 NOPSEMA, Offshore Project Proposal: Public Comment Information Paper, August 2016, p. 1, https://www.nopsema.gov.au/assets/Information-papers/A473111.pdf.

5 NOPSEMA, Offshore Project Proposal: Public Comment Information Paper, August 2016, p. 1, https://www.nopsema.gov.au/assets/Information-papers/A473111.pdf.

Recommendation 5

1.52 The Australian Greens recommend that NOPSEMA takes responsibility for, and develops new consultation guidelines and methodologies rather than devolving responsibility to an industry representative body.

Royalties and revenue

1.53 As previously noted, the committee received evidence that current taxation arrangements for offshore oil and gas projects may reduce any economic benefits otherwise gained. In particular, exploration drilling is unlikely to yield royalties or tax to either state or federal governments. Further, expenses associated with exploration are eligible to be claimed as deductions from future income.

1.54 The Australian Greens note the comments of The Australia Institute in relation to the Western Australian experience where the state government provided substantial investment in infrastructure and subsidies over a long period before revenues were realised. Royalties also revert to the Commonwealth rather than the states. As a consequence, South Australian taxpayers may face a very long period before revenue is realised. In the meantime, they will be subsidising the oil and gas industry.

1.55 Submitters were particularly critical of arrangements under the *Petroleum Resource Rent Tax Assessment Act 1987* (PRRT Act) which provides substantial subsidies for exploration activity in designated frontier areas, and deductions for exploratory expenditure which includes remediation expenditure.

1.56 The Australian Greens were particularly disturbed to learn that despite the 'polluter pays' principle underpinning the requirement for oil and gas titleholders to demonstrate financial assurance to the regulator, titleholders would be eligible to claim clean-up expenses as exploratory expenditure for the purposes of the PRRT. This is a direct contradiction of the polluter pays principle, and the Australian Greens are of the view that Australian taxpayers should neither be responsible for funding exploratory activity in high risk environments such as the Great Australian Bight, nor for any clean-up activities required in the event of an oi spill.

1.57 In November 2016, the Australian Government announced a review into the operation of the PPRT Act to help better protect Australia's revenue base, and to ensure that oil and gas proponents are paying an appropriate amount of tax. The Australian Greens also note that the PRRT Act is under consideration by the Senate Economics References Committee as part of its inquiry into Corporate Tax Avoidance.

1.58 The Australian Greens support both the much-needed Australian Government review of the PRRT Act, and the Senate Economics References inquiry into corporate tax avoidance.

Recommendation 6

1.59 The Australian Greens recommend that the Australian Government amend the Petroleum Resource Rent Tax Assessment Act 1987 to prevent companies from claiming environmental remediation expenses as carry-forward expenditure for the purposes of assessing their tax liabilities.

Senator Sarah Hanson-Young
Chair

Additional comments from Senators Back, Gallacher and Reynolds

Introduction

1.1 Senator Chris Back, Senator Alex Gallacher and Senator Linda Reynolds CSC acknowledge the substantial amount of work contained in the Committee's report, and the factual information it contains.

1.2 The following provides the additional evidence provides support for our views and conclusions.

Additional evidence Chapter 3 – Regulatory issues

Ministerial oversight and decision making-expertise

1.3 We note additional evidence received in relation the benefits of decision-making by an independent statutory authority such as NOPSEMA compared to ministerial decision-making. Dr Malcolm Roberts, Chief Executive Officer of the Australian Petroleum Production and Exploration Association (APPEA) told the committee that:

> My view is that we have a very good balance. Ministers have policy responsibility for the framework. They have decision-making powers over what areas are released for exploration. They appoint the board, the CEO. There are opportunities for ministers to decide to attach conditions to the release of acreage.[1]

1.4 In explaining the reasons why the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) was given responsibility for environmental management and assessment, Mr Smith, Chief Executive Officer, NOPSEMA, told the committee that:

> …one of the reasons that NOPSEMA was given responsibility for environmental management and assessments was that it was recognised as having particular specialist knowledge with regard to offshore oil and gas, which may well ensure that we are better placed than other options for making decisions under the EPBC Act. I think that has been affirmed by the independent reviews of our performance on our handling of those responsibilities.[2]

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1 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, p. 7.

2 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

1.5 Mr Smith, while noting the strengths of the current regulatory regime, stated that it places the onus on the proponent to actually identify and approach and address issues from relevant persons. He concluded that:

> So we think it goes beyond other environmental approvals processes in various ways, and there are strengths.[3]

NOPSEMA's environmental standards

1.6 NOPSEMA explained to the committee that its environmental and approval processes contain the same essential elements as those of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The key point of difference being that NOPSEMA is required to evaluate all environmental impacts and risks (including those to matters protected by the EPBC Act), and identify appropriate control measures to manage and monitor those impacts.[4] Mr Smith told the committee that:

> …the environmental regulations we administer do not just focus on matters protected under EPBC Act, the national environmental significance. It is all impacts and risks. If they are not protected and if there are unacceptable impacts or risks to those parts of the environment, they will not proceed, and that includes social and economic features in the environment as well.[5]

1.7 In contrast, the Department of the Environment and Energy's initial approval process is restricted to the evaluation of impacts and risks only to those matters protected by the EPBC Act. Further detailed analysis and identification of control measures are then addressed separately in action plans post approval.[6]

1.8 Mr Cameron Grebe, Head of Division, Environment, NOPSEMA, told the committee that it is 'worth noting' that NOPSEMA's environmental approvals regulations have been assessed against the EPBC Act's approval process in relation to offshore petroleum activities. Mr Grebe stated that 'that process led to the endorsement of the process we [NOPSEMA] administer as having an equivalent outcome'. Mr Grebe also noted that:

> …we have specific obligations that existed under the EPBC Act before streamlining. As Commonwealth officials, the EPBC Act constrains us from approving actions that are likely to have an impact on a number of different things under the EPBC Act, including species recovery plans, plans of management for marine protected areas, and so on. Those are hardwired in legislation and not just a commitment.[7]

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3 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

4 NOPSEMA, *Submission 7*, pp 14–15.

5 Mr Stuart Smith, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

6 NOPSEMA, *Submission 7*, pp 14–15.

7 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 16 November 2016, p. 34.

1.9 In response to suggestions that the approvals process should be amended to again require the approval of the Department of the Environment, the South Australian Government noted that the former process was 'a duplicative, overlapping assessment process that demonstrably resulted in longer assessment timeframes'.[8]

Transparency of decision making

1.10 NOPSEMA told the committee that with the exception of information it is required to release by law, it does not typically publicly release information received during its deliberative process. It submitted:

> In accordance with the Australian Administrative Law Policy Guide and NOPSEMA's published policies, NOPSEMA does not provide specific comment on the merits of regulatory submissions that are under assessment as any comment may be perceived to bias NOPSEMA's fair and impartial assessment of the submission in question.[9]

1.11 Further, Mr Cameron Grebe, NOPSEMA, stated that:

> We have to be mindful, as a regulator, to abide by the administrative law principles that apply to decision making, and, where the information is provided for the purpose of something other than public release, we do not have the authority to release that information.[10]

Industry co-operation

1.12 APPEA provided evidence to the committee of work it is undertaking with industry stakeholders. It submitted that developing and sustaining relationships between the oil and gas industry and stakeholders is critical to the industry's long-term sustainability. Positive relationships are one of the key ways in which the oil and gas industry are able to manage the potential economic and social impacts on other industries such as fishing.[11]

1.13 In recognition of the importance of stakeholder relationships, APPEA signed a Memorandum of Understanding (MOU) with five of Australia's peak commercial fishing, aquaculture and seafood industry associations. This MOU established principles of co-operation, communication and consultation between APPEA and fishing industry bodies. Under the MOU, industry groups meet regularly through a roundtable process and have committed to seek to resolve issues through better information sharing.[12]

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8 South Australian Government, *Submission 44*, p. 6.

9 NOPSEMA, *Submission 7*, p. 16.

10 Mr Cameron Grebe, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 57.

11 APPEA, *Submission 46*, p. 36.

12 APPEA, *Submission 46*, p. 36.

Additional evidence Chapter 4 – Effects of oil and gas exploration and production in the Great Australian Bight

Economic impacts of oil and gas production

1.14 The committee received evidence that outlined the potential economic outcomes of oil and gas production in the Great Australian Bight. This included evidence noting the volume of oil imported, and its associated costs. Dr Roberts, APPEA, stated:

> About 80 per cent of the oil we use in Australia is imported, costing us about $34 billion a year. Local production has been falling steadily. Australia has less than 10 years of proven domestic crude oil resources left. Finding a major new local source of oil will help address our widening trade deficit in this vital commodity.[13]

1.15 The Department of Industry, Innovation and Science noted that Australia imports around 75 per cent of the crude oil it refines into liquid fuels and around 50 per cent of the refined liquid fuels in Australia. The department went on to state:

> It is important that Australia continues to identify and maintain the potential for access to areas that are moderate to highly geologically prospective for oil and gas hydrocarbons. This will ensure Australia can maximise the exploitation of its offshore oil and gas resources to provide ongoing benefits to the Australian economy and to maintain diverse and resilient energy supplies and sustain our energy security in Australia and the broader Asia-Pacific region.[14]

1.16 APPEA also stated that 'exploration is important as a means of reducing uncertainty about Australia' available petroleum reserves'.[15]

1.17 APPEA also highlighted the economic benefits delivered by ventures in the Bass Strait, as the closest adjacent offshore petroleum province to the Great Australian Bight. It stated that operations in the Bass Strait have contributed $200 billion to the Australian Gross Domestic Product (GDP) and 50,000 permanent jobs over four decades.[16] Similarly, between 1989 and 2009, the North West Shelf project is estimated to have generated export revenues approaching $60 billion, contributed $70 billion to the GDP, and paid state and Commonwealth taxes of approximately $5 billion.[17]

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13 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, p. 1.

14 Department of Industry, Innovation and Science, *Submission 4*, p. 6; see also Geoscience Australia, *Submission 70*, p. 2.

15 APPEA, *Submission 46*, p. 11.

16 APPEA, *Submission 46*, p. 3.

17 APPEA, *Submission 46*, p. 11.

1.18 Chevron Australia, in outlining its operations in Australia stated that the direct benefits from its projects include over 1,000 contracts with Australian businesses; 19,000 people working on the Gorgon and Wheatstone projects; $53 million investment in research and development; and about $300 million committed to community investment both in Onslow and in the region. Dr Moffat, General Manager, Exploration, Chevron Australia stated:

> The benefits directly from the project are immense. They are indicative of the kind of expenditures and benefits that flow from oil and gas. In terms of direct benefits to the federal government, there is some independent analysis. I would like to table this for the committee. This work was done independently and it talks to a revenue benefit from Gorgon and Wheatstone of $338 billion to the federal government.[18]

1.19 The committee received evidence that exploration in the Great Australian Bight would have brought opportunities and expenditure in a range of services including supply vessels, aircraft and drilling rigs, products and infrastructure, logistics and warehousing, machine shops, environment, medical and catering services.[19]

1.20 Regional Development Australia Whyalla and Eyre Peninsula (RDAWEP) and the Eyre Peninsula Local Government Association (EPLGA) stated that to date activities in the Great Australian Bight have had a 'positive impact on the demand for food and accommodation, and transport services, including regional airlines and fuel sales (estimated at $5–10million)'.[20] It further stated that:

> GAB oil and gas activities have had a positive economic impact in the region to date. The most conspicuous economic impact has been the airport upgrade at Ceduna associated with the fuel dump and helicopter facilities. Airlines, hotels, consumable and fuel suppliers have enjoyed greater and not insubstantial sales revenue created by this activity.[21]

1.21 The RDAWEP and EPLGA concluded:

> …if oil and gas production is developed at some time in the future, the economic impact to this region will be transformational and will remove many of our current constraints to regional development at a social and economic level.[22]

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18 Dr David Moffat, General Manager, Exploration, Chevron Australia, *Committee Hansard*, 16 November 2016, p. 45.

19 Government of South Australia, *Submission 44*, p. 12.

20 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 4.

21 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 5.

22 Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association, *Submission 83*, p. 5.

1.22 Similarly, the District Council of Ceduna noted the developments at Ceduna Airport for the operation of BP's aviation logistics base for the proposed exploratory drilling program. The Council stated that the revenue generated by the lease will provide revenue to the Council for community services and works which would otherwise be borne by Ceduna Council residents. The Council concluded that:

> BP's positive social and economic contribution to the communities of Eyre Peninsula and the Ceduna Region to date has been significant as a direct result of their presence in the region for the GAB exploratory drilling program.[23]

1.23 BP noted that the $8 million upgrade to Port Adelaide's bunkering facility provided more than 20 local jobs including in construction works and pipeline design, and has provided a 'welcome boost for local suppliers and business confidence'.[24]

1.24 In noting BP's decision to not proceed with exploration in the Great Australian Bight, the Department of Industry, Innovation and Science submitted that:

> The BP program in the Great Australian Bight would have created jobs and opportunities for local suppliers. It was expected that 25 businesses in Ceduna and surrounding towns would be engaged in BP's planned drilling program; 100 workers including 25 Ceduna-based workers and 20 per cent indigenous worker component.[25]

Revenue and royalties

1.25 The committee received evidence in relation to the taxation arrangements that apply to the extraction of petroleum resources in Australia. These arrangements 'are aimed at encouraging production from Australia's oil and gas reserves while providing an adequate return to the Australian community on the exploitation of their resources'.[26]

1.26 Table 1.1 provides an outline of the various petroleum taxation arrangements that are in effect.

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23 District Council of Ceduna, *Submission 5*, p. 4.

24 Infrastructure Magazine, 'Fueling South Australia's port infrastructure', 3 November 2016, http://infrastructuremagazine.com.au/2016/11/03/fueling-south-australias-port-infrastructure/, (accessed 20 February 2017).

25 Department of Industry, Innovation and Science, *Submission 72*, p. 5.

26 Department of Industry, Innovation and Science, 'Resources taxation', https://industry.gov.au/resource/Enhancing/ResourcesTaxation/Pages/default.aspx (accessed 1 May 2017).

Table 1.1 – Summary of Australia's petroleum taxation arrangements

Tax	Description
Petroleum resource rent tax (PRRT)	The Petroleum Resource Rent Tax (PRRT) was originally introduced by the Australian Government in 1987 to replace royalties and crude oil excise in most areas of Commonwealth waters. From 1 July 2012, PRRT applies to all Australian onshore and offshore oil and gas projects, including the North West Shelf and coal seam gas projects. The PRRT is a profit based tax levied at 40 percent of net revenues (sales receipts less eligible expenditures) from a project.
Offshore petroleum royalties	Offshore petroleum royalties currently apply to the North West Shelf (NWS) production area and state and territory waters. Royalties do not overlap with the Resource Rent Royalty regime (see below). Onshore, royalties are levied on petroleum production and are collected by the states and territories. The rate is generally set at approximately 10 per cent of net wellhead value of production.
Crude Oil Excise	The Australian Government applies Crude Oil Excise to eligible crude oil and condensate production from coastal waters, onshore areas, and the North West Shelf project area in Australian waters. The rate of excise applied depends on the annual rate of production of crude oil and condensate, the date of discovery of the petroleum reservoir and the date on which production commenced. The first 30 million barrels are excise exempt, and variable excise rates apply to annual production at different levels.
Production Sharing Contracts	Petroleum produced within the Joint Petroleum Development Area (JPDA) is subject to fiscal terms outlined in a Production Sharing Contract (PSC). PSCs are agreements between the parties to a petroleum extraction facility and the Australian and East Timorese governments regarding the percentage of production each party will receive after the participating parties have recovered a specified amount of costs and expenses.
Resources Rent Royalty (RRR)	The Australian Government excise is waived where a state introduces a Resource Rent Royalty (RRR) on a petroleum development within its jurisdiction and where a revenue sharing agreement is negotiated with the Australian Government. The profits based RRR regime is similar to the PRRT.

Source: Department of Industry, Innovation and Science, 'Resources taxation', https://industry.gov.au/resource/Enhancing/ResourcesTaxation/Pages/default.aspx.

1.27 The PRRT attracted some comment during the inquiry. The PRRT is a profit-based tax applied to the recovery of petroleum products that is:

> …designed to capture the 'economic rent' associated with the development of petroleum projects. A finite supply of high quality, accessible petroleum deposits means that there are pockets of petroleum resource projects offering the prospect of very high returns, well in excess of the returns

> necessary to attract commercial investment. Those high excess returns represent pockets of economic rent.[27]

1.28 Mr Mike Lawson, Acting Deputy Secretary, Department of Industry, Innovation and Science, explained the difference between ordinary company tax and taxes such as the PRRT succinctly as follows: 'The companies pay company tax on their profits. Resource rent tax is a tax on the resource rents'.[28]

1.29 The following is a brief summary of how the PRRT operates:

> The PRRT is assessed on a petroleum project basis and is levied at a rate of 40 per cent of a project's taxable profit. Taxable profit is calculated by deducting a project's eligible project expenses from the assessable receipts derived from the project. Deductible expenditure broadly includes those expenditures, whether capital or revenue in nature, which are directly incurred in relation to the petroleum project.[29]

1.30 Some submitters raised concern that existing taxation arrangements for offshore oil and gas projects may reduce the economic benefits.[30] The risk associated with offshore petroleum exploration and the implications of this for taxation revenue was also raised.

1.31 It is a fundamental principle of the Australian taxation system that expenses and losses incurred in gaining tax assessable income can generally be deducted from assessable income.[31] The design of the PRRT also takes into account the risks involved in petroleum exploration and development.[32] The advantages and risks involved in the development of oil and gas projects in Australia were examined recently as part of a review of the PRRT commissioned by the Government. Although Australia is considered to have 'a number of country specific advantages' that help influence whether oil and gas exploration and development in undertaken in Australia, the review considered that 'a number of major challenges confront the development of oil and gas projects in Australia':

> In particular, the development of Australia's gas resources, especially offshore, is challenged by its remoteness, a lack of available infrastructure,

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27 Petroleum Resource Rent Tax Review, *Issues note*, 20 December 2016, www.treasury.gov.au/~/media/Treasury/Consultations%20and%20Reviews/Reviews%20and%20Inquiries/2016/Review%20of%20Petroleum%20Resource%20Rent%20Tax/Key%20Documents/PDF/PRRT_dn.ashx, (accessed 1 May 2017), p. 2.

28 Mr Mike Lawson, Acting Deputy Secretary, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 9.

29 Petroleum Resource Rent Tax Review, *Issues note*, 20 December 2016, p. 2.

30 See for example, Miss Rebecca Faulkner, *Submission 38*, p. 9.

31 For an example of a statement articulating this principle, See Treasury, *Submission 19* to House of Representatives Standing Committee on Economics inquiry into tax deductibility, January 2016, p. 2.

32 Australian Taxation Office, *Review of the Petroleum Resource Rent Tax: ATO Submission*, p. 4.

> geological uncertainties and the significant capital costs and long lead times required to facilitate resource recovery.[33]

1.32 The Department of Industry, Innovation and Science told the committee that the PRRT is 'designed to be—in a sense—a risk-sharing engagement' which encourages investment.[34] In particular, departmental officers agreed that the design of the tax is not intended to inhibit exploration. Mr Lawson stated:

> Absolutely, the whole point of it is what is a normal return on the assets that have been invested in and spent doing exploration and assets that are then spent on building the capacity of the production facilities and so on. Those things are deducted according to tax law and profits. Resource rent taxes can come out the other end and are subject to those taxes.[35]

Environmental impacts – seismic surveying

1.33 The committee received evidence in relation to the regulatory requirements which govern the undertaking of seismic surveys during the exploration phase of offshore oil and gas operations.

1.34 APPEA submitted that both industry mitigation practices and the requirements of the EPBC Act Policy Statement *Interactions between offshore seismic exploration and whales* ensure that seismic surveying occurs under strict conditions designed to protect marine life. APPEA described the mitigation measures required under the Policy Statement as 'some of the most restrictive mitigation measures in the world' including a 'timing guide, soft-starts, observations zones, low power zones and shutdown zones'.[36]

1.35 Mr Derrick O'Keefe, Murphy Australia Oil, also pointed to an added, unplanned, benefit of seismic surveying: environmental data, such as meteor data, wave action, observation of different species in the Bight and salinity measurements, has been obtained. The data has been provided to different scientific groups to assist them with their research.[37]

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33 PRRT review, pp. 28–29.

34 Mr Mike Lawson, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 9.

35 Mr Mike Lawson, Department of Industry, Innovation and Science, *Committee Hansard*, 8 February 2017, p. 9.

36 APPEA, *Submission 46*, p. 14.

37 Mr Derrick O'Keefe, Murphy Australia Oil, *Committee Hansard*, 28 April 2017, p. 64.

Additional evidence Chapter 5 – Environmental and economic impacts in the event of an oil spill

Natural oil seepage

1.36 APPEA presented evidence that the Great Australian Bight has a history of natural oil and gas seeping from the seabed, accounting for more than half of the oil introduced into the marine environment. Oil and gas below the seabed can either seep from the sea floor or rise through the water column in a plume—both of which result in oil slicks on the sea surface.[38]

1.37 APPEA noted that small balls of natural tar washing up on beaches along South Australia's Bowney Coast 'provided the first tangible sign of potential oil and gas reserves in the canyon systems of the continental slope'. It also stated that:

> The former South Australian Department of Mines & Energy has previously reported a stranding of an estimated 1000 tonnes of crude oil near Seal Bay on the south coast of Kangaroo Island on 7 December 1986. Australian Mineral Development Laboratories analysed samples and concluded the substance was naturally occurring oil.[39]

1.38 APPEA submitted that Geoscience Australia studies 'indicate that some natural slicks are up to 1,200 metres long and between 30 and 150 metres wide and occur in water depths from 5000 to less than 200 metres'.[40]

1.39 APPEA also submitted that the US National Research Council estimates that oil introduced into the environment from platform based oil spills only accounts for 0.07 per cent of all spills.[41]

38 APPEA, *Submission 46*, p. 22.

39 APPEA, *Submission 46*, p. 22.

40 APPEA, *Submission 46*, p. 22.

41 APPEA, *Submission 46*, p. 22.

Additional evidence Chapter 6 – Capacity to prevent, and mitigate the effect of an oil spill

Regulatory requirements

1.40 APPEA told the committee that the regulatory regime implemented by NOPSEMA 'recognises the importance by both preventing but also preparing to respond to the very low likelihood but credible, high consequence events'.[42]

Titleholder strategies and response organisations

1.41 APPEA submitted that in 'the rare event' that an oil spill occurs, operators are required to have in place the capability to respond and minimise the impact.[43]

Mutual Assistance Agreement

1.42 BP noted that in 2012, 12 APPEA member companies, including BP signed a memorandum of understanding on mutual assistance (known as the Mutual Assistance Agreement). This agreement is intended to facilitate the transfer of a mobile offshore drilling unit (MODU) between operators in the event that one is required to drill an emergency relief well. However it stated that it is unlikely that any other MODU would be present in the Great Australian Bight at the time of its proposed project.[44]

Concerns with the ability of proponents to prevent an oil spill

1.43 Oil and gas exploration companies responded to concerns raised by submitters in relation to the ability of proponents to prevent and oil spill, and noted that they had been undertaking activities successfully for many years. Santos Ltd, for example, commented:

> Santos has been undertaking offshore petroleum activities for more than 30 years and, in that time, has developed an expertise in, and track-record of, safe and effective operation. The company's internal processes ensure that proposed activities in even the most challenging of offshore settings are well planned and carefully managed and, in the context of the Commonwealth waters of Australia, accepted by NOPSEMA as demonstrating that impacts and risks are reduced to ALARP.[45]

42 APPEA, *Submission 46*, p. 37.

43 APPEA, *Submission 46*, p. 4.

44 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 5, p. 10.

45 Santos Ltd, *Submission 16*, p. 9.

1.44 Murphy Australia Oil also commented that 'it should be remembered that safety systems in relation to spills and accidents are not limited to world-class methods, post-incident, but also include world-class systems designed to prevent an incident'.[46]

1.45 In relation to concerns about the weather and depth of drilling in the Great Australian Bight, Chevron Australia commented that there are a number of other areas in the world with comparable weather and depth conditions which have been successfully drilled. Dr David Moffat, General Manager, Exploration, stated:

> The examples we would offer would be west of Shetland, which is a harsh environment; Newfoundland; West Africa; and Western Australia, as a key example. The analogy I was giving there was not with Bass Strait but with other areas that we have operated that are of similar character to the bight. In terms of the water depth, we have drilled over 175 wells with greater than a kilometre depth, a thousand metres of water depth. I think our record in those deepwater wells is admirable. The record, in terms of depth of drilling, is that we have drilled down to depths of 2,900 metres plus. Those are comparable to the bight.[47]

1.46 Similarly, Santos Ltd noted that it has drilled along the southern continental slope in the Bass Strait to total drilled depths in excess of 3600m. It described the weather conditions in the area as 'challenging' and stated that they are 'consistent with those experienced through the whole of the Southern Ocean region from the Bass Strait to the Great Australian Bight'. It submitted that 'robust and comprehensive technical rig selection process, mooring analysis and engineered well design ensure that these conditions do not impact the integrity or safety of the drilling operations'.[48]

1.47 Dr Malcolm Roberts, APPEA, added that the industry has longstanding arrangements in place to ensure that, in the event of a major incident, equipment and qualified people are ready to be mobilised quickly. In addition to the equipment available in Australia to response to a spill, arrangements are in place with international agencies to ensure the delivery of specialist equipment not available in Australia. Dr Roberts also noted that NOPSEMA is responsible for assessing environmental risk and ensuring that companies have a response plan. He stated:

> There is no doubt that these are significant issues, but equally there is no doubt that these are some of the major issues that will be assessed by the regulator as part of this proposal. If the regulator is not satisfied that those environmental risks have been identified and reduced as much as reasonably practicable, and that there is an effective response plan in place

46 Murphy Australia Oil, *Submission 21*, p. 4.

47 Dr David Moffat, Chevron Australia, *Committee Hansard*, 16 November 2016, p. 43.

48 Santos Ltd, *Submission 16*, pp. 8–9.

that could be implemented quickly and effectively, then approval will not be given.[49]

1.48 APPEA stated that the most common drilling rig in Australian waters are semi-submersible Mobile Offshore Drilling Units (MODU) which are semi-submerged to increase stability and are stabilised by anchors or azimuth thrusters. BP commissioned the construction of a specialist MODU, the Ocean GreatWhite equipped with dynamic thrusters to enable it to remain stable during extreme weather. APPEA stated that the Ocean GreatWhite is capable of operating at water depths of more than 3,000 metres and drilling to depths of more than 10,000 metres.[50]

Lessons learned from Deepwater Horizon

1.49 BP provided the committee with evidence of its response to the Deepwater Horizon accident. It noted that an internal investigation into the event had made eight findings and 26 recommendations specific to drilling which BP as implemented across its worldwide drilling activities. In addition, the 'eight key findings of the Accident Investigation Report have all been directly addressed in preventative planning for operations in the Great Australian Bight'.[51] These were provided in detail in BP's submission.[52]

1.50 BP went on to comment that the industry has continued to advance capabilities and adopt changes in a number of areas as a result of the lessons learned from Deepwater Horizon and other incidents. These areas include:

- prevention and drilling safety—the aim is to prevent well control incidents from occurring in the first instance;
- enhancing standards in relation to equipment and procedures is continuing; and
- planning and preparing to contain a situation—implementation of a tiered approach to tactical responses to subsea well incidents.[53]

1.51 It also provided a report on environmental recovery and restoration in the Gulf of Mexico. This report detailed the response efforts and noted that:

- under the Natural Resource Damage Assessment (NRDA) process,[54] scientists have conducted more than 240 studies and BP has provided funding of $US1.3 billion for these studies;

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49 Dr Malcolm Roberts, APPEA, *Committee Hansard*, 28 April 2016, p. 4.

50 APPEA, *Submission 46*, p. 16.

51 BP Developments Australia Pty Ltd, *Submission 20*, pp. 1–2, 13.

52 BP Developments Australia Pty Ltd, *Submission 20*, pp. 17–21.

53 BP Developments Australia Pty Ltd, *Submission 20*, pp. 13–15.

54 The US Oil Pollution Act of 1990 established the NRDA process.

- in 2011, BP entered into an agreement to provide $US1 billion for early restoration projects, allowing environmental restoration work to begin while scientists continued to assess injury through the NRDA.[55]

1.52 BP also noted that the recovery effort following the Deepwater Horizon accident was generally well received by the community. Ms Fitzpatrick stated that the community 'has been pleased with the fact that we stepped up and actually did do all of the activity and work that we did, and that we looked after people who had been impacted financially'.[56] Ms Fitzpatrick went on to comment that BP was in a position to meet its financial obligations should a spill event occur in the Great Australian Bight.[57]

Senators' views

1.53 Balancing the need for the protection of pristine marine environments against the development of, and investment in, the offshore oil and gas industry has been the subject of fierce public debate for many years.

1.54 Though this inquiry followed the proposal by BP to conduct exploratory drilling in the Great Australian Bight, the concerns and issues raised more broadly addressed the current regulatory regime governing the approval of offshore oil and gas activities in Australia. It was also evident that concerns regarding the potential impact on the pristine marine environment of the Great Australian Bight would apply to all oil and gas activities in the area, regardless of the proponent company.

1.55 We acknowledge that the environmental, economic and social impacts resulting from the 2011 Deepwater Horizon incident in the Gulf of Mexico influenced the view held by many submitters regarding the appropriateness of offshore oil and gas activities being conducted in the Great Australian Bight. The Deepwater Horizon incident also weighed heavily on some submitters' perception of BP as a titleholder in the Great Australian Bight.

1.56 It should be noted however that the Australian offshore oil and gas regulatory regime differs significantly from that of the United States. BP has acknowledged that since the Deepwater Horizon incident, it has changed a number of its business practices to ensure the safety of its operations. We also note the extensive rehabilitation work coordinated and funded by BP which has significantly limited the impact of this incident on affected coastal communities along the Gulf.

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55 BP Developments Australia Pty Ltd, *Submission 20*, Attachment 2.

56 Ms Claire Fitzpatrick, Managing Director, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 47.

57 Ms Claire Fitzpatrick, Managing Director, BP Developments Australia Pty Ltd, *Committee Hansard*, 28 April 2016, p. 48.

Protection of the Great Australian Bight

1.57 The Great Australian Bight is an extraordinary oceanic and coastal environment of global conservation significance. It is a place of unparalleled natural beauty and is home to an array of diverse and unique flora and fauna species. Coastal communities have a deep and abiding connection to the Great Australian Bight and rely on it for both industry and recreation. The Great Australian Bight also provides national and international visitors with an opportunity to experience one of the world's pristine and unique marine wilderness areas.

1.58 As one of the last remaining intact ocean wilderness areas in the world, it provides critical habitat to a range of threatened and endangered wildlife species. It is extraordinarily rich in biodiversity, and is home to an enormous number of endemic species—some 85 percent of species found in the region are endemic. Many of these endemic species are also listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.59 The waters of the Bight provide the most significant breeding and calving areas in Australia for the southern right whale, one of two such major calving areas in the world. It also supports an essential nursery area for the endangered Australian sea lion. The Bight provides seasonal habitat for a range of rare and endangered cetaceans such as sperm whales, killer whales and rorquals (blue, minke and humpback whales).

1.60 Over the past 20 years, both the Commonwealth and the South Australian governments have worked to recognise the global conservation values of the region through the declaration of extensive protection areas. One mechanism to preserve and protect the Great Australian Bight has been the establishment of Commonwealth marine reserves. The establishment of marine reserves acts to protect and maintain an area's biodiversity, including endangered and threatened species such as whales and pinnipeds, and their habitats.

1.61 In 2014, the Australian government commissioned an independent review of the CMR network established in 2012. The review was undertaken by an expert scientific panel, which reviewed the science underpinning the current CMRs, and five bioregional advisory panels, which facilitated enhanced consultation with stakeholders.

1.62 The panels recommended zoning changes in the Great Australian Bight to exclude oil and gas activities from existing inshore special purpose zones. However, these zones do not overlap current petroleum titles, nor are titleholders or other companies prohibited from traversing the re-zoned areas.

1.63 We believe that the mechanisms currently in place acknowledge the high environmental values of the Great Australian Bight, and provide appropriate levels of protection to the area.

Economic benefits and energy security

1.64 The energy sector is fundamental to Australia's social and economic prosperity. It underpins every aspect of economic activity, and the strategic management and security of energy resources is critical to the future of the nation. In addition, oil and gas exploration and production continues to be a significant contributor to the Australian economy through domestic supply, export revenue, skills development, employment opportunities and regional development.

1.65 In 2014–15, it was estimated that the oil and gas industry contributed $31 billion to industry gross value added, and employed around 24,000 people. In addition there have been some 40,000 fulltime jobs on LNG construction projects in Western Australia and Queensland in the last decade. Oil and gas exploration and production results in investment in regional infrastructure, and expenditure through the development of facilities, industry contracts, accommodation, and associated service contracts. The oil and gas industry is also one of the highest value-add industries in Australia generating highly skilled jobs both directly, and through downstream processing, engineering, and other services.

1.66 As noted during the course of the inquiry, BP's proposed exploration activity in the Great Australian Bight would have resulted in significant economic benefit to both South Australia and the Great Australian Bight region. It was expected to generate opportunities for the development of business capabilities and diversification in the Eyre Peninsular and Whyalla region. This would have occurred through direct and indirect service provisions and the development of infrastructure to support offshore activities.

1.67 Benefits during the exploration phase have already arisen with the Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association pointing to the upgrade of facilities at Ceduna airport. The South Australian Government also provided the committee with evidence of opportunities for South Australian businesses, for example, the opening of the Port Adelaide Marine Supply Base which serviced and provided supplies to BP.

1.68 We note evidence that the Eyre Peninsula has suffered from a lack of investment in ageing infrastructure, poor employment opportunities, low retention rates of younger workers and limited business opportunities. It is therefore unsurprising that the Regional Development Whyalla and Eyre Peninsula/Eyre Peninsula Local Government saw the economic benefits for the region arising from oil and gas production as being 'transformational'.

1.69 Evidence received by the committee pointed to the much needed regional employment and investment which would have arisen from BP's operations. It was expected that 25 businesses in Ceduna and surrounding towns would have been engaged during BP's planned drilling program. It was also expected that 100 workers, would have been engaged including 25 Ceduna-based workers, and a 20 per cent Indigenous worker component.

1.70 We consider that the economic benefits from exploration and production of oil and gas in the Great Australian Bight are clear. While only in the exploration phase, significant investment has already taken place in South Australia. The experience with offshore oil and gas developments in Western Australia point to the potential for significant job creation, investment in infrastructure, and business opportunities in regions where there are no alternative opportunities. We therefore strongly support the oil and gas industry in Australia.

1.71 The oil and gas industry is also critical to ensuring Australia's energy security. Australia's fuel supply has been protected from disruption by current market conditions. However it remains vulnerable to high-impact geopolitical events in areas of production such as the Middle East, or along supply chains such as the Straits of Hormuz and, more recently, the South China Sea. As such, it is important that new opportunities for production must be identified to ensure that Australia can maintain diverse and resilient energy supplies. Continued growth in domestic oil demand and declining oil production have already resulted in a significant decline in Australia's self-sufficiency in crude oil and refined petroleum products. Australia's growing trade deficit in crude oil and refined products has both security and cost implications.

1.72 We consider the protection of Australia's energy security to be of the utmost importance. Domestic oil and gas exploration and production are pivotal to ensuring that Australia's economic and social wellbeing is protected from the effect of any disruption to Australia's fuel supply. The International Energy Agency predicted that Australia had only 48 days of fuel reserves onshore in January 2017!

1.73 Chevron Australia has indicated it proposes to drill for oil in its exploration lease in the Great Australian Bight. Chevron and its partners have invested US $100 billion (A$130 billion) on its Liquid Natural Gas (LNG) projects at Gorgon on Barrow Island and Wheatstone based at Onslow on the North West Shelf of Western Australia.

1.74 From its two LNG trains at Gorgon, Chevron has already invested A$60 billion into the local economy during the construction phase of these projects. Acil Allen consultants have predicted that, over the 30 year life of these two projects, they will deliver more than $1trillion to Australia’s GDP, around 150,000 full time job equivalents and $340 billion to Federal Government revenue.

Strength of regulatory regime

1.75 The Australian offshore oil and gas industry is subject to one of the most rigorous environmental and safety regulatory regimes in the world. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), was established in 2011 as the independent authority responsible for the regulation of well integrity, health and safety, and environmental management for offshore oil and gas operations in Commonwealth waters. It is a highly competent, robust, and independent regulator, and utilises an objectives-based regulatory model which has been recognised as best practice in high risk industries.

1.76 Previously, the Department of the Environment was responsible for the environmental approvals of offshore oil and gas activities which would have an impact on Matters of National Environment Significance (MNES) under the EPBC Act. In 2014, NOPSEMA's environmental approvals process was endorsed by the Commonwealth Minister for the Environment as being appropriate to ensure that oil and gas activities do not have unacceptable impacts on matters protected under the EPBC Act.

1.77 We note some submitters questioned whether NOPSEMA has sufficient expertise to make environmental assessments. It accepts NOPSEMA's evidence that it employs appropriately qualified staff. We also note the evidence that staff are required to demonstrate and maintain relevant competencies prior to undertaking lead regulatory roles. We also note the high level of cooperation which exists between NOPSEMA and other government departments.

1.78 NOPSEMA relies on both scientific evidence and a team of highly qualified staff to undertake all environmental and safety assessments. NOPSEMA utilises national and international information sources including peer-reviewed scientific literature, industry publications, and government reports.

1.79 We are of the view that the approvals process administered by NOPSEMA has substantial strengths over other regulatory regimes. In particular, NOPSEMA requires proponents to be proactive in identifying, consulting and addressing issues raised by relevant persons. Proponents are also required to demonstrate to NOPSEMA that concerns raised by relevant persons have been dealt with appropriately. If NOPSEMA is not satisfied that all consultation requirements have been met, then the environment plan will not be accepted, and the activity cannot proceed.

1.80 We agree with Mr Stuart Smith, Chief Executive of NOPSEMA that this is superior to other environmental processes, such as those administered by the Department of the Environment and Energy under the EPBC Act, as it places the onus on the proponent to actively consult, and provide evidence of this consultation to NOPSEMA.

1.81 Further, contrary to claims made by environmental advocacy groups, there is no evidence that NOPSEMA has failed to implement the principles of ecologically sustainable development as defined under the EPBC Act, such as the precautionary principle. Nor is there evidence that NOPSEMA, in considering Environment Plans has failed, or will fail to explicitly take into consideration any potential impacts on matters protected under Part 3 of the EPBC Act. In fact, evidence demonstrates that NOPSEMA is actually required to consider the impacts on the environment from offshore oil and gas beyond the matters stipulated by the EPBC Act.

1.82 NOPSEMA's environmental approvals process has been endorsed by the Minister for the Environment as being appropriate to ensure that offshore oil and gas activities do not have unacceptable impacts on matters protected under the EPBC Act. It was also reviewed after 12 months of operation and found to be delivering, and is

expected to continue delivering the levels of environmental protection required under the EPBC Act. We accept the evidence that NOPSEMA's approvals process reduces costly and unnecessary duplication and allows for the timely consideration and approval of oil and gas projects. This ensures that investment in oil and projects is encouraged and facilitated, whilst simultaneously ensuring that the environment is appropriately protected.

1.83 We note NOPSEMA's efforts to develop mechanisms to increase public confidence in the offshore regulatory regime through enhanced transparency for stakeholder input. For example, the requirement for proponents to publicly disclose environment plans before the NOPSEMA assessment process commences, and the introduction of a formal public comment period. As stated by Mr Smith, Chief Executive of NOPSEMA, these enhancements would not alter final approvals by NOPSEMA, as the current existing regulatory framework already ensures that the regulator is provided with all required information about stakeholder consultation. These enhancements are simply directed at improving community confidence that their issues have been taken into account, rather than altering approval outcomes.

1.84 We are reassured that the existing approvals process ensures that NOPSEMA is a well-informed, robust and independent regulator. We commend NOPSEMA for considering ways to improve community confidence in its approvals process and notes the work being undertaken by the Department of Industry, Innovation and Science as part of the review of environmental transparency under NOPSEMA's regulatory regime.

1.85 We have confidence that NOPSEMA provides, and will continue to provide, appropriate levels of environmental protection through its rigorous approvals process.

Long track record of safe exploration and production

1.86 We note the findings of oil spill modelling provided by both The Wilderness Society and BP, and note concerns that the effects of an oil spill in the Great Australian Bight could be catastrophic. Submitters provided evidence that marine flora and fauna, including threatened and protected species would be killed and injured, and that delicate ecosystems would be disrupted. Further, submitters expressed concern that industries such as fisheries and aquaculture, and tourism would be affected by an oil spill.

1.87 Some submitters also raised concern that in the event of an oil spill in the Great Australian Bight, the harsh weather conditions and the remote and isolated coastline could create difficulties in undertaking containment and clean-up activities. However, evidence was received that NOPSEMA requires oil and gas proponents to demonstrate that appropriate response strategies are in place in order to obtain approval to undertake activity in the region. We believe that NOPSEMA is best-placed, as a robust and independent regulator, to make an assessment of the appropriateness of oil spill mitigation measures.

1.88 Oil and gas industry proponents argued that operations in the Great Australian Bight would be conducted with the risk reduced to as low as reasonably practicable as required under the regulatory framework. In Australia, the oil and gas industry has a long history of ensuring that operations are conducted safely, and in a manner which does not endanger pristine environments. Over many decades, operations in the Bass Strait and the North West Shelf area have proven to co-exist with other industries such as fishing and aquaculture, and delicate marine and coastal ecosystems have not been negatively affected.

1.89 We particularly note the efforts of Chevron Australia which has operated on Barrow Island, Western Australia since 1967. Barrow Island is a Class A Nature Reserve, and Chevron Australia has implemented best practice environmental management strategies which have ensured that the island's ecology remains essentially intact. Chevron Australia's management of Barrow Island demonstrates that oil and gas exploration and production can safely co-exist with delicate and protected ecosystems, and that titleholders have a strongly demonstrated commitment to ensuring that their operations are conducted in a manner in which environmental protection standards are paramount in all aspects of their operations.

1.90 In relation to the Deepwater Horizon spill, the committee notes that this event was used by some submitters as a reason for a complete ban on oil or gas activities in the Great Australian Bight. However, BP provided evidence to the committee that the lessons learnt from the accident and the recommendations of the BP internal investigation have been implemented across BP's worldwide drilling activities, including in the Great Australian Bight.

1.91 In addition, we note the evidence from NOPSEMA that the regulatory arrangements for well integrity in Australia are 'amongst the best in the world', and are based on experience worldwide and the lessons learned from other incidents. As a consequence, NOPSEMA concluded that it is well-placed to identify and prevent an incident similar to Deepwater Horizon and to respond if such an event should occur.[58]

1.92 The oil and gas industry also has a longstanding and cooperative relationship with the scientific research community. The committee notes that BP Australia provides funding to the Great Australian Bight Research Program, a four year $20 million project led by the CSIRO which involves seven major study themes including benthic biodiversity and socioeconomic issues. This project is a collaborative effort between BP, CSIRO, the Government of South Australia, the South Australian Research and Development Institute, the University of Adelaide, and Flinders University. This project will provide invaluable baseline data sets which will ensure that the Great Australian Bight is managed appropriately. Chevron Australia also separately funds a research program in the Great Australian Bight which will complement the aims of the Great Australian Bight Research Program.

58 Mr Stuart Smith, Chief Executive Officer, NOPSEMA, *Committee Hansard*, 28 April 2016, p. 59.

1.93 We commend the commitment of the oil and gas industry to ensuring that oil and gas operations are supported by the latest in scientific research. We also commend the industry on its valuable contribution to the support of the scientific and academic research community in Australia.

1.94 We have confidence that the oil and gas industry in Australia will continue to comply with all regulatory requirements, and implement appropriate safety and environmental protections measures. We particularly recognise the oil and gas industry demonstrated commitment to best practice safety and environmental practices over many years.

1.95 As such, we support the continued development of Australia's oil and gas sector in accordance with the regulatory regime's robust environmental and safety requirements.

Oil spill mitigation

1.96 Some submitters expressed concerns relating to the capacity of companies, and the industry more generally, to mitigate the risk of an oil spill during exploration or production from an offshore facility.

1.97 We note advice from the Australian Petroleum Production and Exploration Association (APPEA) that Australia has longstanding arrangements for co-ordinated action by industry and governments in the event of a marine oil spill. The Chief Executive, Mr Malcolm Roberts informed the committee that the National Plan for Maritime Environmental Emergencies provides a co-operative framework for response by governments, the shipping and petroleum industries.

1.98 Mr Roberts advised that the industry contribution is led by the Australian Marine Oil Spill Centre (AMOSC), established in 1991 as a subsidiary of the Australian Institute of Petroleum (AIP). AMOSC's members account for virtually all oil and gas exploration and production, offshore pipelines and tanker shipping in Australian waters. Through AMOSC, the local industry operates in line with international best practice for spill prevention, preparedness and response.

1.99 APPEA advised that AMOSC operates from two main centres (Geelong and Fremantle) with additional equipment stockpiles at Exmouth and Broome. AMOSC has a permanent staff of twelve people with support readily available from another 120 trained industry personnel (known as the Core Group). Over the last three years, AMOSC has trained 355 industry professionals to expand the pool of trained response staff across the industry. AMOSC training is endorsed by the International Maritime Organisation. AMOSC has invested almost $30 million in on-call specialised surface and sub-surface equipment and dispersants, located in the main risk areas off Australia.

1.100 We were informed of the existence of the Subsea First Response Toolkit which can be deployed at short notice with equipment to respond to a failure in well

integrity, including injecting subsea dispersants, operating blow out preventers and, if necessary, preparing the wellhead for deployment of a capping stack.

1.101 We also note the evidence from BP and other companies that there is continuous improvement in equipment, procedures and training and competency management in the areas of drilling safety and prevention, containment and oil spill response. We consider that the industry has shown its willingness to learn from past accidents and is well placed to respond to any accident in the Great Australian Bight in the unlikely event that this should occur.

Conclusion

1.102 We support oil and gas exploration in the Great Australian Bight subject to continued strong oversight by NOPSEMA.

Senator Linda Reynolds CSC
Deputy Chair
Senator for Western Australia

Senator Chris Back
Senator for Western Australia

Senator Alex Gallacher
Senator for South Australia

Additional Comments from Senators Chisholm and Urquhart

1.1 Federal Labor is committed to the sustainable management of Australia's marine resources and we are a strong defender and manager of our oceans and those who use them.

1.2 Labor Senators note that committee members have differing views on issues presented. Labor will prioritise jobs and sustainable and safe management of our ocean resources and the environment.

1.3 Though the inquiry followed the proposal by BP to conduct exploratory drilling in the Great Australian Bight, the concerns and issues raised more broadly covered the current regulatory regime governing the approval of offshore oil and gas activities in Australia. It was also evident that concerns regarding the potential impact on the pristine marine environment of the Great Australian Bight would apply to all oil and gas activities in the area, regardless of the proponent company.

1.4 Oil and gas production is a significant contributor to the Australian economy through domestic supply, export revenue, skills development, employment opportunities and regional development. The strategic management and security of energy resources is critical to the future of the nation.

1.5 Oil and gas exploration and production results in investment in regional infrastructure, and expenditure through the development of facilities, industry contracts, accommodation, and associated service contracts. The oil and gas industry is also a high value-add industry in Australia generating skilled jobs both directly, and through downstream processing, engineering, and other services.

1.6 The Great Australian Bight is an extraordinary oceanic and coastal environment of global conservation significance. It is a place of unparalleled natural beauty and is home to an array of diverse and unique flora and fauna species. Coastal communities have a deep and abiding connection to the Great Australian Bight and rely on it for both industry and recreation. The Great Australian Bight also provides national and international visitors with an opportunity to experience one of the world's pristine and unique marine wilderness areas.

1.7 As one of the last remaining intact ocean wilderness areas in the world, it provides critical habitat to a range of threatened and endangered wildlife species. It is extraordinarily rich in biodiversity, and is home to an enormous number of endemic species—some 85 percent of species found in the region are endemic. Many of these endemic species are also listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.8 The waters of the Bight provide the most significant breeding and calving areas in Australia for the southern right whale, one of two such major calving areas in the world. It also supports an essential nursery area for the endangered Australian sea lion. The Bight provides seasonal habitat for a range of rare and endangered cetaceans such as sperm whales, killer whales and rorquals (blue, minke and humpback whales).

1.9 Over the past 20 years, both the Commonwealth and the South Australian governments have worked to recognise the global conservation values of the region through the declaration of extensive protection areas. One mechanism to preserve and protect the Great Australian Bight has been the establishment of Commonwealth marine reserves. The establishment of marine reserves acts to protect and maintain an area's biodiversity, including endangered and threatened species such as whales and pinnipeds, and their habitats.

1.10 Labor Senators note the 2012 national marine reserve network and are proud to have delivered the world's largest marine reserve network. Under Labor the number of marine reserves expanded from 27 (including the Great Barrier Reef Marine Park) to 60, covering more than a third of Commonwealth waters.

1.11 This is the largest system of marine reserves in the world, but the comprehensive management plans that gave effect to the reserves were scrapped without Parliamentary scrutiny by the Liberal Government.

1.12 These plans were the culmination of more than 20 years of work that began under the Keating Government. They would have secured the long-term conservation and sustainable use of Australia's precious oceans and protected important areas of our marine environment from invasive activities.

1.13 Labor Senators condemn the Government for cancelling the management plans for the Commonwealth Marine Reserve Network and conducting an unnecessary review to delay protection of Australia's oceans.

1.14 The Australian offshore oil and gas industry is subject to one of the most rigorous environmental and safety regulatory regimes in the world. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), was established in 2011 as the independent authority responsible for the regulation of well integrity, health and safety, and environmental management for offshore oil and gas operations in Commonwealth waters.

1.15 Previously, the Department of the Environment was responsible for the environmental approvals of offshore oil and gas activities which would have an impact on Matters of National Environment Significance (MNES) under the EPBC Act. In 2014, NOPSEMA's environmental approvals process was endorsed by the Commonwealth Minister for the Environment as being appropriate to ensure that oil and gas activities do not have unacceptable impacts on matters protected under the EPBC Act.

Consultation

1.16 NOPSEMA has worked hard to improve consultation and engage stakeholders and communities. In August 2015, NOPSEMA announced a 'Stakeholder engagement and transparency' work program to focus on transparency and community engagement. Continued improvements in public consultation and reporting by NOPSEMA will provide the community with increased confidence that the appropriate levels of protection to the area are in place and assessments are informed by comprehensive information.

Recommendation 1

1.17 To address the issue of consultation, Labor recommends that the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* be amended to include a mandatory period of public comment during the final assessment process for Environment Plans.

1.18 Labor put NOPSEMA in place as a national regulator for all offshore petroleum activities involving safety, well integrity and environmental management in Commonwealth waters, and in coastal waters where state powers have been conferred.

Information provision

1.19 Labor notes the findings of oil spill modelling provided by both BP and The Wilderness Society, and notes concerns that the effects of an oil spill in the Great Australian Bight could be catastrophic. Submitters provided evidence that marine flora and fauna, including threatened and protected species would be killed and injured, and that delicate ecosystems would be disrupted. Further, submitters expressed concern that industries such as fisheries and aquaculture, and tourism would be affected by an oil spill.

1.20 Some submitters also raised concern that in the event of an oil spill in the Great Australian Bight, the harsh weather conditions and the remote and isolated coastline could create difficulties in undertaking containment and clean-up activities. However, evidence was received that NOPSEMA requires oil and gas proponents to demonstrate that appropriate response strategies are in place in order to obtain approval to undertake activity in the region. Labor believes that NOPSEMA is well placed to assess the appropriateness of oil spill mitigation measures. This is a critical task of NOPSEMA and goes to the heart of satisfying many community concerns.

Recommendation 2

1.21 To improve community confidence in NOPSEMA processes, Labor recommends that the *Offshore Petroleum and Greenhouse Gas (Environment) Regulation 2009* be amended to include a requirement for oil proponents to publically release oil spill modelling and emergency response plans when final assessments are being made and before public consultation is finalised.

Comments

1.22 The proximity to the Southern Ocean combined with the depth of much of the Bight and consequent pressure raises risks and environmental issues which are different to those found in many other sites.

1.23 There needs to be an improved level of consultation and scrutiny to ensure NOPSEMA is fully taking these issues into account and addressing community confidence in process.

1.24 Labor Senators note that committee members have differing views on issues presented. Labor will prioritise jobs and sustainable and safe management of our ocean resources and the environment.

Senator Anthony Chisholm
Senator for Queensland

Senator Anne Urquhart
Senator for Tasmania

Additional Comments from Senator Nick Xenophon

Oil or gas production in the Great Australian Bight: A Precautionary Tale

1.1 This inquiry has raised and examined a number of important competing interests including resource security, economic activity, jobs, professional and recreational fishing, tourism, environmental conservation and risk management of a catastrophic event. The committee report has provided a comprehensive summary and analysis of the issues under consideration and the secretariat is to be commended for their work.

1.2 The committee has accurately spelt out the regulatory framework and explained the roles of the National Petroleum Titles Administrator (NOPTA), the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the Department of Industry, Innovation and Science. It has also described accurately the processes that BP went through to advance its drilling endeavours in the Great Australian Bight.

1.3 Evidence given to the committee sets out the potentially catastrophic consequences of an oil spill in the Great Australian Bight. My home state of South Australia would suffer irreversible consequences to its coastal environment, and deep and long term economic damage.

1.4 A commonly accepted definition of the 'precautionary principle' (or 'precautionary approach') to risk management states 'that if an action or policy has a suspected risk of causing harm to the public, or to the environment, in the absence of scientific consensus (that the action or policy is not harmful), the burden of proof that it is not harmful falls on those taking that action'.[1]

1.5 The concern I have in respect of the proposal to justify drilling in the Great Australian Bight is that the burden of proof to show that it will not be harmful has not been met by those who have proposed the drilling. This must be considered in the context of the harm that could be caused if there is an oil spill in the Great Australian Bight as against the potential benefits of drilling. Consistent with this approach are the concerns that were raised in the committee report about the lack of transparency by BP in respect of its spill modelling.

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1 https://en.wikipedia.org/wiki/Precautionary_principle. Another definition is that the precautionary principle requires 'that public policy include measures to avoid or diminish morally unacceptable harms that may result from human actions. The harms need not be certain outcomes of an action; it is sufficient that they be scientifically plausible'. Adams, M. D. (2002), 'The precautionary principle and the rhetoric behind it', *Journal of Risk Research*, 5, 301–316.

1.6 I accept that energy security is a critically important issue in Australia, as well as the apparent failures of gas policies, which the Government is taking steps to address. Along with my colleagues I have advocated for a series of measures to deal with the gas crisis, including more transparency in gas contracts, greater competition in the marketplace, export controls and particularly a 'use it or lose it' approach. In relation to the latter, there appeared to be significant reserves of offshore gas that are tied up in retention leases. That must be reviewed as a matter of urgency for that gas to make it to the domestic market.

1.7 I am not satisfied that the burden of proof that drilling in the Great Australian Bight would not be harmful, weighing up the risks and benefits, has been met by its proponents.

Recommendation 1

1.8 Drilling in the Great Australian Bight should not proceed as it fails to meet the burden of proof required by the precautionary principle.

Senator Nick Xenophon
Senator for South Australia

Appendix 1

Submissions, additional information, tabled documents and answers to questions on notice

Submissions

Received during the 44th Parliament

1	Householder's Options to Protect the Environment Inc
2	Australian Maritime Safety Authority
3	Humane Society International
4	Department of Industry, Innovation and Science
5	District Council of Ceduna
6	Regional Development Australia Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Assoc.
7	National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)
8	Statoil
9	Environmental Defenders Office SA (Inc)
10	Stop Invasive Mining Group Incorporated
11	Australian Marine Oil Spill Centre (AMOSC)
12	City of Victor Harbor
13	Conservation Council of SA
14	Environmental Defenders Office of Australia
15	Department of the Environment
16	Santos Ltd
17	Chevron Australia Pty Ltd
18	Sea Shepherd Australia
19	Australian Marine Conservation Society
20	BP Developments Australia Pty Ltd
21	Murphy Australia Oil Pty Ltd
22	Greenpeace Australia Pacific
23	Clean Bight Alliance Australia (CBAA)
24	Mr Peter Wales
25	Ms Susan Buckland
26	Ms Kath Giblett
27	Mr Will Steffen
28	Mr Douglas Stetner
29	International Fund for Animal Welfare
30	Dr David Ellis
31	Miss Brianna Summers
32	Mrs Helen Allsopp
33	Miss Cobi Smith
34	Mr Patrick McMurray
35	Mr Laurent Lebreton
36	Mr Brad Leue
37	The Australia Institute

38	Miss Rebecca Faulkner
39	The Norwood Resource Incorporated
40	Mr Peter Treloar
41	Miss Danielle Hives
42	South Australian Oyster Growers Association (SAOGA)
43	The Wilderness Society (South Australia) Inc
44	South Australian Government
45	Ms Sophie Hayat
46	Australian Petroleum Production & Exploration Association Limited (APPEA)
47	Ms Emily Mitchell
48	Ms Alainee Kent
49	Ms Karen Vegar
50	Ms Ruth HillNoble
51	Ms Erin Gibson
52	Name Withheld
53	Name Withheld
54	Ms Carmel Young
55	Kangaroo Island/Victor Harbor Dolphin Watch
56	Ms Patricia George
57	Mr James Banks
58	Mr Jordan Wood
59	Ms Jean Harrison
60	Mr Peter Parry
61	Mr Peter Charles
62	Mr Bunna Lawrie
63	Ms Anne Daw

Received during the 45th Parliament

64	Professor Andrew Hopkins
65	Name Withheld
66	Mr Benjamin Byass
67	Mr Tony and Ms Phyll Bartram, KI/VH Dolphin Watch WDC
68	Brynn Mathews
69	Ms Rosamund Krivanek
70	Geoscience Australia
71	Ms Olivia Bakonyi
72	Department of Industry Innovation and Science
73	Emeritus Professor Robert Bea
74	Humane Society International
75	Australian Maritime Officers Union
76	Whale and Dolphin Conservation
77	Australian Youth Climate Coalition
78	Kangaroo Island Council
79	The Wilderness Society

80	Mr Leith Packer
81	Sea Shepherd Australia
82	South Australian Oyster Growers Association
83	Regional Development Australia Whyalla and Eyre Peninsula/Eyre Peninsula Local Government Association
84	Aboriginal Lands Trust
85	The Norwood Resource Incorporated

Form letters

Form letter type 1: received from 609 individuals

Form letter type 2: received from 8,346 individuals

Form letter type 3: received from 7,805 individuals

Tabled documents

Received during the 44th Parliament

Murphy Oil – Opening Statement (public hearing, Adelaide, 28 April 2016)

Murphy Oil – Stakeholder Tracker (public hearing, Adelaide, 28 April 2016)

Government of South Australia – Summary of submission (public hearing, Adelaide, 20 April 2016)

Additional Information

Received during the 45th Parliament

Additional information provided by Mrs Anne Daw

Survey results for South Australia's electorate of Flinders, conducted 28 September 2016, provided by The Wilderness Society following public hearing, Adelaide, 16 November 2016

Additional information provided by Chevron following public hearing, Adelaide, 16 November 2016

Answers to questions on notice

Received during the 44th Parliament

International Fund for Animal Welfare – Answers to questions taken on notice (public hearing, Adelaide, 28 April 2016)

NOPSEMA – Answers to questions taken on notice (public hearing, Adelaide, 28 April 2016)

Received during the 45th Parliament

Conservation Council of South Australia – Answers to question taken on notice (public hearing, Adelaide, 28 April 2016), provided following re-adoption of inquiry

City of Victor Habour Council – Answers to questions taken on notice, (public hearing, Adelaide, 28 April 2016), provided following re-adoption of inquiry

BP Developments Australia Pty Ltd – Answers to questions 1 and 3 taken on notice (public hearing, Adelaide, 28 April 2016), provided following re-adoption of inquiry

BP Developments Australia Pty Ltd – Answer to question 2 taken on notice, (public hearing, Adelaide, 28 April 2016), provided following re-adoption of inquiry

Government of South Australia – Answers to questions taken on notice (public hearing, Adelaide, 28 April 2016), provided following re-adoption of inquiry

The Wilderness Society – Answers to questions taken on notice (public hearing, Adelaide, 16 November 2016)

NOPSEMA – Answers to questions taken on notice (public hearing, Adelaide, 16 November 2016)

Department of the Environment and Energy – Answers to questions taken on notice (public hearing, Canberra, 8 February 2017)

Department of Industry, Innovation and Science – Answers to questions taken on notice (public hearing, Canberra, 8 February 2017)

Australian Taxation Office – Answers to written questions on notice

Chevron - Answers to questions taken on notice (public hearing, Adelaide, 16 November 2016)

Appendix 2

Public hearings

44th Parliament

Thursday, 28 April 2016 – Adelaide

Australian Petroleum Production and Exploration Association Limited

Mr Malcolm Roberts, Chief Executive Officer
Mr Matthew Doman, Director South Australia & Northern Territory
Mr Nick Fox, Chief Environment and Safety Manager, Santos, and senior member of APPEA's environment committee

The Australia Institute – via teleconference

Mr Roderick Campbell, Research Director

EDOs of Australia – via teleconference

Ms Rachel Walmsley, Policy & Law Reform Director
Ms Sue Higginson, Chief Executive Officer, EDO NSW
Ms Emma Carmody, Law Reform Solicitor

Conservation Council of South Australia

Mr Craig Wilkins, Chief Executive

International Fund for Animal Welfare – via teleconference

Mr Matthew Collis, Policy & Campaigns Manager

The Wilderness Society (South Australia) Inc.

Mr Peter Owen, Director
Mr Lyndon Schneiders, National Campaigns Director

Dr Laurent Lebreton – via teleconference

BP Australia Pty Ltd

Ms Claire Fitzpatrick, Managing Director
Ms Renee Preece, External Affairs Advisor, South Australia

National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

Mr Stuart Smith, Chief Executive Officer
Mr Cameron Grebe, Head of Division, Environment
Mr Owen Wilson, Environment Speciality, Legislative Change, Communications and Stakeholder Relations Team

Santos Ltd

Mr William Ovenden, Vice President, Exploration
Mr Tomas Baddeley, Manager, Government & Community Relations

Murphy Australia Oil Pty Ltd

Mr Derrick O'Keefe, Advisor

City of Victor Harbor – via teleconference

Mr Graeme Maxwell, Chief Executive Officer

City of Port Lincoln – via teleconference

Mr Bruce Green, Mayor

South Australian Government

Mr Barry Goldstein, Executive Director Energy Resources, Department of State Development
Mr David Cockshell, Executive Director Energy Resources, Department of State Development
Ms Stacey Bunn, Environmental Compliance Officer, Department of State Development

45th Parliament

Wednesday, 16 November 2016 – Adelaide

Curtin University Great Australian Bight Whale Project

Ms Claire Charlton

Aboriginal Lands Trust, South Australia

Ms Kerry Colbung, Chief Executive
Ms Virginia Leek, Outposted Lawyer, Crown Solicitors Office

Sea Shepherd Australia

Mr Jeff Hansen, Managing Director

The Wilderness Society

Mr Peter Owen, Director
Ms Jess Lerch, Climate Change Campaigner

National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

Mr Stuart Smith, Chief Executive Officer
Mr Cameron Grebe, Head of Division, Environment
Mr Nicholas Page, Legislative Change, Communications and Stakeholder Relations Manager

Chevron Australia

Dr David Moffat, General Manager Exploration
Mr Russell Lagdon, Senior Environment Manager

South Australian Oyster Growers Association (SAOGA) & South Australian Oyster Research Council (SAORC)

Ms Trudy McGowan, Executive Officer

Australian Petroleum Production and Exploration Association Limited (APPEA)

Dr Malcolm Roberts, Chief Executive
Mr Matthew Doman, Director – South Australia/Northern Territory

Fowlers Bay Eco Park – via teleconference

Mr Rod Keogh

Regional Development Australia, Whyalla and Eyre Peninsula

Mr Dion Dorward

Wednesday, 8 February 2017 – Canberra

Department of Industry, Innovation and Science

Mr Mike Lawson, Deputy Secretary
Ms Catherine Kesteven, Acting General Manager, Offshore Resources Branch
Ms Marie Illman, Manager, Offshore Exploration Section

Department of the Environment and Energy

Mr Matt Cahill, First Assistant Secretary, Environment Standards Division
Ms Deb Callister, Assistant Secretary, Marine and International Heritage, Wildlife, Heritage and Marine Division
Ms Monica Collins, Assistant Secretary, Compliance and Enforcement, Environment Standards Division
Mr James Tregurtha, Assistant Secretary, Policy and Reform, Environment Standards Division