

Part 2: Framework and approach

4. Stakeholder consultation

4.1 INTRODUCTION

The development of a substantial greenfields project presents an opportunity to align the project design and commercial imperatives with the interests and aspirations of the community to the greatest extent practicable. API has consulted broadly during the course of ongoing investigation, design and evaluation of the Proposal since 2008 and, particularly from 2009, as certainty in the definition of the Proposal improved.

This section provides a summary of consultation processes undertaken and the feedback received to date. In many instances, the comments and advice received are beyond the environmental scope of this PER/draft PER. API has included these matters in the summary to provide a full and balanced account of the consultation outcomes and of stakeholder sentiment. API's programme of consultation is ongoing and provides a forum for engagement on environmental and non-environmental matters that extends the opportunities presented in the formal environment impact assessment process.

4.2 APPROACH AND FORM OF CONSULTATION

A number of meetings and briefings on the Proposal have been held with local, state and federal government agencies, other industry participants, non-government organisations, Traditional Owner groups and pastoralists. The frequency of meetings with these stakeholders and decision-makers has been related to the nature of matters under discussion and the rate of progress of the Proposal definition.

A broad cross-section of community and service organisations local to the Karratha/Roebourne area, including conservation groups, recreational clubs and volunteer emergency services, have also been contacted regarding the Proposal. The subjects of discussion have varied through the range of stakeholders, and valuable input has been gained for the development of the environmental investigation programmes and the design of the Proposal.

API has undertaken much of this consultation itself, and it also commissioned the consultancy Sustainable Consulting to separately canvass stakeholders for feedback on the Proposal. The method of consultation employed by API has varied depending on the forum, subject matter and purpose. The main forms of communication may be categorised as:

- broad project briefings and presentations;
- stakeholder workshops;
- API/stakeholder meetings and discussions, including those undertaken on API's behalf by consultants (e.g., specific environmental investigation methods and approach);
- written communications, distribution of project updates or brochures and of the draft ESD;
- telephone discussions; and
- distribution of drafts of this PER/draft PER.

The public release of this PER/draft PER for an eight-week period will provide a further opportunity for stakeholder review and involvement in planning for the Proposal.

Engagement with the Ngarluma People, who hold native title rights over an area that includes the Proposal area, will be maintained through this process and through additional forums, such as the programme of heritage surveys (currently under discussion), the development of the Cultural Heritage Management Plans and *Native Title Act 1993* processes.

4.3 CONSULTATION OUTCOMES

Consultation was successful in improving stakeholder awareness of the Proposal, in obtaining feedback for consideration in project design and in identifying opportunities for environmental and social initiatives. Table 4.1 presents a summary of the feedback provided by stakeholders to date and, where relevant to a subject within the scope of this PER/draft PER, a reference to the appropriate section.

Table 4.1 should be read with the following in mind:

- For the purposes of the summary, stakeholder feedback has been paraphrased; and comments from sometimes multiple and separate conversations, meetings or correspondence have been reported.
- In some instances, the spokesperson for some of the non-government groups contacted took care to point out that the feedback may not necessarily represent the full diversity of views within the particular organisation.
- Consultation is ongoing: the amount and detail of information related to the Proposal and stakeholder awareness thereof will change; and opinions or sentiment may change.
- API has, by necessity, frequent and ongoing engagement with government agencies regarding regulatory matters and processes. This provides an avenue of almost continual feedback on specific and general aspects of the Proposal. The feedback from government agencies described in Table 4.1 is primarily that obtained independently by Sustainable Consulting.

Table 4.1 Summary of feedback raised by stakeholders between 2008 and 2010.

Topic	API Comment / PER Section
Point Samson Community Association: Issues	
Dust	Section 17
Beach access: Cleaverville Beach is a highly valued camping spot.	Proposal will not compromise access to Cleaverville Beach. Access to coastal fringe within port precinct not certain, although likely to be subject to security constraints (Section 19).
Marine incidents	Managed through appropriate protocols and control by the Dampier Port Authority, the identified manager of the port.
Risk of vessel strikes (whales).	Managed by the regulation of vessel speeds. To assist in determining the distribution and abundance of whales, aerial surveys are ongoing and a land-based whale monitoring program conducted at Point Samson by the Centre for Whale Research (Irvine et al. 2009) (Section 9).
Possible high marine biodiversity between Anketell Point and Dixon Island.	Detailed investigations could not confirm this observation (Section 3.3). Follow up investigations with stakeholders planned.
Use of Dixon Island and impact of causeway.	Proposed development limited to eastern end of island, within area zoned for industrial use. Causeway and bridge designed to maintain tidal regime and avoid impact on mangroves (Section 8).
Need to identify exit channel markers.	API will install appropriate channel markers.
Dredge spoil stability.	Section 7
Opposed to fly in/fly out workforce.	API is exploring means to optimise the proportion of the workforce that is residential.
Risk of increased fishing pressure from vessels at anchor.	Risk acknowledged; unsure of appropriate or possible management response within API control at this stage.
Presence of middens identified (location not disclosed here).	Identified midden some distance from Proposal footprint and unlikely to be disturbed. Heritage surveys to be completed in consultation with the Ngarluma People will identify heritage sites.
Point Samson Community Association: Opportunities	
Be honest about likely environmental impacts.	This is a core API requirement. Complexity of some environmental analysis presents a challenge for clear communication of risks.
Use residential workforce during operational phase.	API is exploring means to optimise the proportion of the operational workforce that is residential.

Topic	API Comment / PER Section
Develop Johns Creek Boat Harbour.	API is actively exploring both potential synergies between the Proposal and an upgrade of the Johns Creek Boat Harbour and a way forward with government.
Encourage more residents in Point Samson and Wickham.	API will promote a residential workforce and is working with relevant agencies to understand and overcome the constraints to residential development.
Promote tourism (particularly eco-tourism).	API to explore how it may lend support to this. From whale monitoring data (Section 3.3), there would appear to be potential for a whale watching and study enterprise (Section 9).
Locate stockpiles and infrastructure further from coastal fringe.	API design was adjusted to slightly increase distance from the coastal fringe (also to avoid disturbance to potential skink habitat). Final layout subject to government, including Dampier Port Authority, review and approval.
Reduce litter and control errant vehicle access to sensitive beaches and coastal vegetation.	Likely to occur as a consequence of port establishment.
Wickham Community Association: Issues	
Environmental impacts.	API to minimise through Proposal design and adaptive and systematic environmental management.
Access to recreational beaches and fishing areas.	Proposal will not compromise access to Cleaverville Beach. Access to coastal fringe within port precinct not certain, although likely to be subject to security constraints (Section 19).
Rock art impacts.	API unaware of rock art sites within the Proposal footprint. Detailed surveys to be completed and avoidance measures to be enacted in consultation with the Ngarluma People (Section 16).
Anti-social behaviour associated with construction camp.	API will exercise controls to minimise the risk of errant behaviour by the workforce within its authority.
Recreational fishing pressures.	Risk acknowledged; although it is not expected that the approximate 5% regional increase in residents will add substantially to the area's current recreational demands. (Section 19).
Wickham Community Association: Opportunities	
Use residential workforce.	API is exploring means to optimise the proportion of the workforce that is residential.
Sponsorship and other community support.	API open to support groups with interests consistent with its corporate values and objectives.
Improve boating facilities.	API is actively exploring both potential synergies between the Proposal and an upgrade of the Johns Creek Boat Harbour and a way forward with government.
Improve local infrastructure and housing.	API open to consider suggestions for improving local infrastructure, in particular those that offer synergies with the Proposal, such as a potential upgrade to Johns Creek Boat Harbour. API is working with relevant agencies to understand and overcome the constraints to local residential development.
Ngarluma People: Issues/Opportunities	
Contribute to extensive social impact assessment.	API considering in conjunction with other port users and state government. Timing, scope and associated conditions to be agreed.

Topic	API Comment / PER Section
Consultation and involvement in environmental impact assessment and environmental management.	API will maintain engagement (Sections 4 and 16).
Conduct indigenous cultural heritage surveys and management in accordance with agreed procedures.	API will conduct surveys in consultation with the Ngarluma and in accordance with agreed protocols (Section 16).
Address issues of Mt Welcome Pastoral Company (owned by Ngarluma People).	API will address the views of the Mt Welcome Pastoral Company.
Provide regular project updates and reviews of environmental & rehabilitation performance.	Achieved through ongoing consultation (Sections 4 and 16).
Conduct cross-cultural awareness training.	API will undertake (Section 16).
Port Walcott Sea Rescue: Issues	
Impacts on marine life around Dixon Island.	Analysis suggests some risk of impact; to be minimised to the greatest extent practicable (Sections 7, 8 and 9).
Access restrictions.	Although access constraints yet to be identified, there is the likelihood of some restriction of access within designated multi-user port precinct (Section 19).
Port Walcott Sea Rescue Opportunities	
Sponsor local community-based groups.	API open to support groups with interests consistent with its corporate values and objectives.
Improve boating facilities.	API is actively exploring both potential synergies between the Proposal and an upgrade of the Johns Creek Boat Harbour and a way forward with government.
Port Walcott Dive Club: Issues	
Impact on coral reef fringing Delambre Island.	Analysis suggests some risk of impact; to be minimised to the greatest extent practicable (Section 7).
Port Walcott Dive Club: Opportunities	
Install a secure buoy above the protected dive wrecks off Delambre Island.	API willing to assist with this, subject to receipt of any necessary approvals.
Conservation Council: Issues	
Environmental impacts.	API to minimise through Proposal design and adaptive and systematic environmental management.
Conservation Council: Opportunities	
Involve local environmental groups.	API keen to involve local groups and individuals as appropriate (see, e.g., the proposed whale research programme in Section 9).
Increase use of renewable energy.	API has considered alternative energy sources. Solar and wind too variable to meet baseload power demand. Investigations into the feasibility of biodiesel (mobile fleet) and solar power for remote localised power continuing (Section 2).

Topic	API Comment / PER Section
WWF: Issues	
Cumulative environmental impacts.	API has considered cumulative impacts to the extent possible within constraints of available data (Sections 7, 8, 9, 13, 15 and 17).
WWF: Opportunities	
Examine all relevant environmental values and processes.	API has sought to do this in this PER.
Conduct rigorous and honest baseline studies.	Largely completed in the period 2008 to 2010 (Appendix 1).
Adopt strategic approach to ensuring cumulative environmental impacts are understood.	API has considered cumulative impacts to the extent possible within constraints of available data (Sections 7, 8, 9, 13, 15 and 17).
Use smart design to reduce urban footprint.	API investigating innovative options for residential accommodation, in the context of local and state government planning for the Karratha region.
Encourage equitable participation of local indigenous people.	Preliminary discussions held with indigenous organisations (Sections 4 and 16).
Recfishwest: Issues	
Access to recreational fishing areas (Cleaverville and Dixon Island).	Access to Cleaverville not affected by Proposal. Proposal utilises eastern tip of Dixon Island only. Access constraints yet to be confirmed; there may be some restriction within designated multi-user port precinct (Section 19).
Natural habitat disturbances.	Disturbance unavoidable under Proposal footprint. Design has sought to minimise footprint and confine it to relatively low-diversity habitat (e.g., spoil disposal grounds on bare sand) (Sections 3, 7, 8, and 13)
Commercial crab fisherman: Issues	
Access to productive pocket near Dixon Island.	Proposal utilises eastern tip of Dixon Island only. Access constraints yet to be confirmed; there may be some restriction within designated multi-user port precinct (Section 19).
Impact on crab numbers.	Section 9
House prices.	Considerable state and local government effort under way to improve land and accommodation supply.
Commercial crab fisherman: Opportunities	
Improve regional services, facilities and infrastructure.	API open to consider suggestions, in particular those that offer synergies with the Proposal, such as a potential upgrade to Johns Creek Boat Harbour.
Improve boating facilities (particularly Johns Creek Boat Harbour).	API is actively exploring both potential synergies between the Proposal and an upgrade of the Johns Creek Boat Harbour and a way forward with government. Open to further suggestions.
Dixon Island aquaculture lease holder: Issues	
Dredging impacts.	Sections 7 and 9
Marine traffic conflicts.	Vessel movement will be managed within declared port precinct.
Anti-social behaviour.	API will exercise controls to minimise the risk of errant behaviour by the workforce within its authority.

Topic	API Comment / PER Section
Pearl quality.	Analysis suggests some risk of impact; to be minimised to the greatest extent practicable (Section 9)
Dixon Island aquaculture lease holder: Opportunities	
Increase competition and employment opportunities.	Subject to regulatory approvals and an investment decision, API will become a new employer in the region.
Improve local roads and accommodation.	API investigating accommodation options and is open to consider suggestions for improving local infrastructure.
Department for State Development: Issues	
Third-party access to port.	Under the terms of government approval, Anketell Point Port will be a multi-user port. API port design accommodates other users.
Dredging plumes.	Sections 7, 9 and 10
Mangrove impacts.	Section 8
Marine Park impacts.	Section 7
Department for State Development: Opportunities	
Encourage all Anketell Point proponents to work together.	API is working cooperatively with other parties interested in the Anketell Point Port and with government agencies.
Dampier Port Authority: Issues	
Allowance for general port land.	Port precinct as contemplated by API has land available for Port Authority. Final port layout to be reviewed and accepted by Port Authority.
Community concerns re dust.	Section 17
Impacts on Dixon Island aquaculture.	Analysis suggests some risk of impact; to be minimised to the greatest extent practicable (Section 9).
Acid sulphate soils.	Section 14
Dredge spoil.	Sections 3, 7, 9 and 10
Water movement under Anketell Point–Dixon Island causeway.	Sections 8 and 10
Geotechnical challenges associated with dredging.	Investigations have determined a channel alignment with minimal geotechnical risk and no blasting.
Environmental impacts.	API to minimise through Proposal design and adaptive and systematic environmental management.
Dampier Port Authority: Opportunities	
Ensure road and rail alignments are consistent with other plans.	API is working cooperatively with other parties interested in the Anketell Point Port.
Allow third-party access to port.	Under the terms of government approval, Anketell Point Port will be a multi-user port. API design accommodates other users.
Establish site as regional fuel hub	Conceptual plan can provide for this.
Pool resources to secure improved regional services, facilities and infrastructure.	API is working cooperatively with other parties interested in the Anketell Point Port and local and state agencies.
Department of Transport: Issues	
Dredging impacts on Delambre Island.	Sections 7 and 9

Topic	API Comment / PER Section
Third-party access to port.	Under the terms of government approval, Anketell Point Port will be a multi-user port. API design accommodates other users.
Department of Transport: Opportunities	
Deliver community benefits.	API objective is to provide overall benefit to the community, which could be achieved through infrastructure upgrades, local investment, partnerships and sponsorships. Initiatives under discussion with governments and community.
Main Roads Department: Issues	
Road access and road network connections.	Considered in road and rail designs.
Rail and road crossing locations and configurations.	Considered in road and rail designs.
Main Roads Department: Opportunities	
Develop an overall structure plan for the Strategic Industrial Area and port.	API has worked with other industry parties and proposed a conceptual plan for the port and the Strategic Industrial Area.
Ensure road safety throughout the area.	Safety a critical consideration in design and operations.
Water Corporation: Issues	
Access to water.	API proposing onsite desalination plant as base case for water supply (Section 2).
Lead time to develop new water supplies.	API proposing onsite desalination plant as base case for water supply (Section 2).
Anti-social behaviour associated with fly-in/fly-out workforce.	API will exercise controls to minimise the risk of errant behaviour by the workforce within its authority.
Water Corporation: Opportunities	
Improve regional services, facilities and infrastructure.	API open to consider suggestions, in particular those that offer synergies with the Proposal, such as a potential upgrade to Johns Creek Boat Harbour.
Assist Shire of Roebourne to enact 2020 vision.	API is engaged with the Shire of Roebourne.
Use at least some residential workforce.	API is actively exploring means to optimise the proportion of workforce that is residential.
Find non-potable sources of water for dust suppression.	API proposing onsite desalination plant as base case for water supply (Section 2).
Department of Water: Issues	
Water supply.	Section 2
Desalination impacts.	Section 10
Department of Environment and Conservation: Issues	
Dust, noise and light impacts.	Dust: Sections 8, 12 and 17 Noise: Sections 9, 13, 18 and 20 Light: Sections 9, 13 and 20
Desalination plant impacts.	Section 10

Topic	API Comment / PER Section
Hydrocarbon management.	Section 11
Impacts on coastal processes.	Sections 7, 8, 9 and 10
Impacts on fauna and flora.	Sections 7, 8, 9, 12, 13 and 20
Access to recreation areas (e.g., Cleaverville).	Proposal will not compromise access to Cleaverville Beach. Access to coastal fringe within port precinct not certain, and may be subject to constraints (Section 19).
Department of Environment and Conservation: Opportunities	
Understand cumulative environmental impacts.	API has considered cumulative impacts to the extent possible within constraints of available data (Sections 7, 8, 9, 13, 15 and 17).
Improve boating facilities.	API is actively exploring both potential synergies between the Proposal and an upgrade of the Johns Creek Boat Harbour and a way forward with government. Open to further suggestions.
Consider environmental offsets.	API considering environmental initiatives made possible by the Proposal.
Department of Fisheries: Issues	
Impact on commercial fishing operators.	More dialogue warranted.
Impact on recreational fishing activities.	Sections 9 and 19
Mangrove impacts.	Section 8
Impact on prawn nursery.	Predicted negligible impacts to Nickol Bay.
Department of Fisheries: Opportunities	
Involve key stakeholders.	API has undertaken and will continue to undertake stakeholder engagement (Section 4).

5. Environmental principles and environment protection

The framework and approach to environmental principles and environmental protection for the Proposal are set out in state and Commonwealth legislation, position and guidance statements, policies and strategies, all of which are discussed in this section as they relate to this Proposal.

5.1 LEGISLATIVE FRAMEWORK AND APPROACH

5.1.1 Principal legislation

Environmental Protection Act 1986

The principal legislation in Western Australia governing the environmental assessment of the Proposal is the *Environmental Protection Act 1986* (EP Act).

Part IV of the EP Act requires the environmental impact assessment of proposals with the potential for significant impact on the environment, and provides for the Minister for Environment to authorise implementation of the Proposal. It defines the approvals process of environmental impact assessment required for proposed developments, as has been described in Section 1, Introduction of this PER/draft PER.

Part V of this legislation prohibits unauthorised environmental harm and pollution, provides for the regulation of prescribed premises and prohibits the unauthorised clearing of native vegetation. It establishes a range of statutory instruments to permit the assessment and management of environmental outcomes arising from emissions from industry (prescribed premises). This includes requirements for proponents to obtain a works approval authorising the construction of a prescribed premises that is likely to cause, increase, alter or result in a discharge of waste, emission of noise, odour or electromagnetic radiation to the environment, and a license to operate such premises. Schedule 1 of the Environmental Protection Regulations 1987 identifies 89 categories of prescribed premises (those requiring a works approval and license), including one key category that is relevant to this proposal, “bulk material loading or unloading” (Category 58).

While the EP Act is the principal state environmental legislation, other regulatory instruments, such as the *Wildlife Conservation Act 1950* and the *Contaminated Sites Act 2002*, also provide for the regulation of key environmental aspects of the Proposal. These regulatory instruments are discussed in Section 5.2.1.

Environment Protection and Biodiversity Conservation Act 1999

The principal Commonwealth legislation governing the environmental assessment of the Proposal is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This legislation provides the Commonwealth Government with a legal framework to protect, assess and manage nationally and internationally important flora, fauna, ecological communities, migratory species (birds and marine mammals) and heritage places or Commonwealth marine areas– defined in the act as matters of national environmental significance.

Under the EPBC Act, a proposal or action that will or is likely to have a significant impact on a matter of national environmental significance is required to be referred to the DSEWPC for a decision as to whether the proposal constitutes a “controlled action”. It was determined that this Proposal is a controlled action, and the process for assessment and approval of controlled actions thus applies to this Proposal (see description in Section 1, Introduction of this PER/draft PER).

Environment Protection (Sea Dumping) Act 1981

In addition to the EPBC Act, another key Commonwealth regulatory instrument relevant to this Proposal is the *Environment Protection (Sea Dumping) Act 1981*, which regulates the loading and dumping of waste at sea. This Act also fulfils Australia’s international obligations under the London Protocol to prevent marine pollution by controlling dumping of wastes and other matter.

Under the Sea Dumping Act, the Commonwealth aims to minimise pollution threats by:

- prohibiting ocean disposal of waste considered too harmful to be released in the marine environment and
- regulating permitted waste disposal to ensure environmental impacts are minimised.

The Sea Dumping Act applies to all vessels, aircraft and platforms in Australian waters and to all Australian vessels and aircrafts in any part of the sea. Permits are required for all sea dumping operations, and are most commonly issued for dredging operations and the creation of artificial reefs. This is particularly relevant to the proposed dredging required for the Proposal, and the use of offshore dredge material disposal grounds. Approval under this Act is granted by the Minister for Sustainability, Environment, Water, Population and Communities, on the advice of DSEWPC.

While these Acts are the principal Commonwealth environmental legislation, other regulatory instruments, such as Protection of the Sea (Prevention of Pollution from Ships) Act 1983 also provide for the regulation of key environmental aspects of the Proposal. These regulatory instruments are discussed in Section 5.2.2.

5.1.2 Application of the principles of environmental protection from the EP Act

Part I, section 4A. Of the EP Act sets out five core principles by which protection of the environment is to be achieved in Western Australia. The principles are further elaborated on in EPA Position Statement No. 7 (EPA, 2004a). These principles and the manner in which API has sought to apply them in the design and planned implementation of the Proposal are described in Table 5.1.

Table 5.1 Principles of environmental protection

Principle	Consideration Given in This Proposal	Relevant Sections in PER/DRAFT PER
<p>Section 9... Precautionary principle</p> <p>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.</p> <p>In the application of the precautionary principle, decisions should be guided by:</p> <ul style="list-style-type: none"> • careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and • an assessment of the risk-weighted consequences of various options. 	<ul style="list-style-type: none"> • Risk assessment employed at the ESD stage and impact assessment employed at the PER/draft PER stage to identify the confidence levels of predicted impacts. • Investigations to inform project design and improve confidence in impact evaluation were guided by the outcomes of the inherent risk assessment presented within the ESD (see Appendices 1 and 2). • Environmental management system under development that will guide the allocation of resources for environmental controls and studies commensurate with risk profile. 	<p>Parts 3, 4, 5 and 6 (Sections 7 to 21).</p>
<p>Section 9... Intergenerational equity</p> <p>The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.</p>	<ul style="list-style-type: none"> • API Environmental Policy. • Proposal environmental management. • Broad consultation regarding opportunities to contribute to natural resource management. 	<p>Parts 2, 4, 4, 5 and 6 (Sections 4, and 7 to 21).</p>
<p>Section 9... Conservation of biological diversity and ecological integrity</p> <p>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</p>	<ul style="list-style-type: none"> • No reduction in biodiversity likely as a result of the Proposal. • Extensive and intensive baseline environmental survey work contributes to knowledge base and inform Proposal design. 	<p>Parts 3, 4 and 6 (Sections 7 to 20).</p>

Principle	Consideration Given in This Proposal	Relevant Sections in PER/DRAFT PER
<p>Section 9... Improved valuation, pricing and incentives mechanisms</p> <ul style="list-style-type: none"> Environmental factors should be included in the valuation of assets and services. The polluter pays principle – those who generate pollution and waste should bear the cost of containment, avoidance or abatement. The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes. Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentives structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems. 	<ul style="list-style-type: none"> Project feasibility and design studies considered environmental values and constraints. Participation in the National Greenhouse and Energy Reporting System and any Australian emissions trading scheme. The costs of containment, avoidance and abatement of other potential sources of pollution and waste are borne by the proponent and managed under the EP Act. Licence fees for discharges (EP Act) levied proportional to volume and significance. 	<p>Parts 1 and 3 (Sections 1, 3 and 6)</p> <p>Part 4 (Section 15)</p>
<p>Section 9... Waste minimisation</p> <p>All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</p>	<ul style="list-style-type: none"> Commitment to the efficient use, reuse and recycling of resources and to the minimisation of waste. 	<p>Section 21.</p>

5.2 SUMMARY OF OTHER APPLICABLE, OR POTENTIALLY APPLICABLE REGULATORY ENVIRONMENTAL CONTROL INSTRUMENTS

Other regulatory environmental control instruments may apply to the Proposal, in addition to the principal legislation, the EP Act and the EPBC Act, and these are briefly described below.

5.2.1 Other state legislation, policy and guidance

Legislation and regulations

Other state legislation and regulations relevant to the Proposal are outlined in Table 5.2. Separate documents, such as licence applications under various Acts, will be prepared, as required, for submission to the departments that administer approvals under these Acts.

Table 5.2 State legislation, other than the EP Act, relevant to the Proposal

Instrument	Description of Relevance
<i>Aboriginal Heritage Act 1972</i>	Provides automatic protection for all places and objects in Western Australia that are important to Aboriginal people, referred to as Aboriginal sites. The presence of an Aboriginal site places restrictions on what can be done to the land. Anyone seeking to use land for development or any other cause, must investigate whether there is an Aboriginal heritage site on the land. Under the Act it is an offence for anyone to excavate, damage, destroy, conceal or in any way alter an Aboriginal site without consent being obtained under Section 18 of that Act.
<i>Agriculture and Related Resources Protection Act 1976</i>	Management of declared weeds.
<i>Biosecurity and Agricultural Management Act 2007</i>	Seeks to establish a modern biosecurity regulatory scheme to prevent serious animal and plant pests and diseases from entering the state and becoming established and to minimise the spread and impact of any that are already present within the state and is therefore relevant to the control of introduced marine pests.
<i>Carbon Rights Act 2003</i>	Provides for the registration of a “carbon right” and accompanying “carbon covenant” on land titles, in so doing improving certainty for carbon trading.
<i>Conservation and Land Management Act 1984</i>	Provides for management of conservation reserves and unallocated crown land.
<i>Contaminated Sites Act 2003</i>	Protects human health, the environment and environmental values by providing for the identification, recording, management and remediation of contaminated sites. It requires owners, occupiers and polluters to report known or suspected contaminated sites to the Department of Environment and Conservation (DEC).
<i>Dangerous Goods Safety Act 2004 and Dangerous Goods Safety (Goods in Ports) Regulations 2007</i>	Outlines provisions and requirements for the safe storage, handling and transport of dangerous goods, including specific regulations for ports. Governs hydrocarbon storage and pipeline distribution at the port
<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>	Protects native vegetation from unapproved clearing.
<i>Environmental Protection (Controlled Waste) Regulations 2004</i>	Governs transportation and disposal of “controlled” (generally hazardous) wastes.
<i>Environmental Protection (NEPM-NPI) Regulations 1998</i>	These regulations require certain acts to be done for the purpose of implementing the National Pollutant Inventory.
<i>Environmental Protection (Noise Regulations) 1997</i>	Provides standards for maximum allowable noise levels at sensitive premises taking into consideration the existing surrounding land use of the receiver location.
<i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>	Sets out requirements with respect to materials that must not be burnt or discharged into the environment.
<i>Health Act 1911</i>	Addresses disposal of wastewater (sewage).
<i>Occupational Safety and Health Act 1984</i>	Provides for the safety and health of persons in the workplace. Assists in establishment of standards relating to noise, dust, vibration etc., which can indirectly manage impacts on the surrounding environment

Instrument	Description of Relevance
<i>Petroleum Pipelines Act 1969</i>	Governs approvals for construction and operation of petroleum-related pipelines, which includes a requirement to submit both a safety and environmental management plan to the Department of Mines and Petroleum for approval.
<i>Planning and Development Act 2005</i>	Governs approval of buildings, including accommodation, workshops, administrative buildings and other similar structures (takes into account matters such as flood, surface water controls and drainage, noise, fire and other health related matters), and includes procedures for the preparation and amendment of regional and local planning schemes.
<i>Pollution of Waters by Oil and Noxious Substances Act 1987</i>	Relevant to the containment, discharge and record-keeping regarding oily mixtures in state waters.
<i>Port Authorities Act 1999 (and subsidiary regulations)</i>	<p>In accordance with requirements under this Act, it is expected that a Port Authority Area will be proclaimed over the land on which this Proposal is located. This proclaimed area, combined with requirements under the Commonwealth Government’s maritime security regime, will restrict access to the proposed port areas.</p> <p>Includes provisions for the “taking of marine life” from ports and discharge of waste substances and ballast water into ports or onto wharves.</p>
<i>Rights in Water and Irrigation Act 1914</i>	Approval of disturbance to beds and banks of waterways and abstraction of ground and surface water.
<i>Western Australian Marine (Sea Dumping) Act 1981</i>	Requires permitting for the dumping of wastes or any other matter (e.g., dredge material) within state waters (unless for prescribed purposes, e.g., reclamation) but is superseded by the Commonwealth <i>Environment Protection (Sea Dumping) Act 1981</i> when the proposed sea dumping occurs within Australian waters.
<i>Wildlife Conservation Act 1950</i>	Protects flora and fauna native to the state of Western Australia. Threatened flora must be “declared” and listed in the Wildlife Conservation (Rare Flora) Notice 2008. The State Wildlife Conservation (Specially Protected Fauna) Notice 2008 of the Wildlife Conservation Act lists fauna protected in Western Australia.

Relevant policies and other guidance

In addition to the legislation and regulations outlined above, a number of Western Australian Government policies, strategies, guidelines and other instruments are applicable to the assessment of the environmental factors relevant to the Proposal. A brief description of the most relevant guidance material is given in Tables 5.3 and 5.4.

Table 5.3 State policy and strategies relevant to the Proposal

Policies and Strategies	Description of Relevance
Greenhouse Strategy (WAGT, 2004)	Sets out the Western Australian Government's response to climate change.
Pilbara Coastal Water Quality Consultation Outcomes (DoE, 2006)	Provides information on recommended environmental values and environmental quality objectives and how they should be applied within Pilbara Coastal waters from Exmouth Gulf to Cape Keraudren. Environmental values are listed as follows: <ul style="list-style-type: none"> • Ecosystem Health (ecological value) • Recreation and Aesthetics (social use value) • Cultural and Spiritual (social use value) • Fishing and Aquaculture (social use value) • Industrial Water Supply (social use value).
State Planning Policy 5.4, Road and Rail Transport Noise and Freight Considerations in Land Use Planning (WAPC, 2009)	Provides noise-level criteria to assess the impact of noise on sensitive premises from new road and railway transport corridors, because noise from the operation of railways is exempt from the Environmental Protection (Noise Regulations) 1997. It outlines targets and limits for noise levels emitted either during the day or at night.
State Water Quality Management Strategy (DoE, 2004a)	Provides for the establishment of environmental values and environmental quality objectives as the goals for environmental quality management to protect the environment from the effects of waste inputs and pollution.
EPA Environmental Protection Policies	Description of Relevance
Draft Environmental Protection (State Marine Waters) Policy (EPA, 1998)	Although not enacted (and potentially requiring revision), outlines the EPA's general ethos regarding the protection of environmental values of the state's marine waters, including the definition of harbour construction as an activity with the potential to degrade marine waters, the setting of environmental quality objectives and environmental values for marine waters, the beneficial uses to be protected and a programme for protection of marine waters.
Environmental Protection (Kwinana) (Atmospheric Wastes) Policy (EPA, 1999)	Establishes ambient air quality standards for total suspended particulates (TSP) and sulphur dioxide for Kwinana, Western Australia. In the absence of national ambient air quality standards for TSP, the standard for TSP within the Kwinana industrial zone is considered relevant to the Proposal.

Table 5.4 EPA guidance on carrying out environmental impact assessments relevant to the Proposal

EPA Administrative Procedures	Description of Relevance
Environmental Impact Assessment (Part IV Division 1) Administrative Procedures 2002 (EPA, 2002c)	Sets out procedural requirements for environmental assessment prescribed under the EP Act.
EPA Position Statements	Description of Relevance
Position Statement No. 2, Environmental Protection of Native Vegetation in Western Australia (EPA, 2000)	Provides an overview of the EPA's position on the clearing of native vegetation in Western Australia. Principles and related objectives and actions have been adopted from the National Strategy for the Conservation of Australia's Biological Diversity (DEST, 1996) and the National Strategy for Ecologically Sustainable Development (Commonwealth of Australia, 1992) in the development of this position statement.
Position Statement No. 3, Terrestrial Biological Surveys as an Element of Biodiversity Protection (EPA, 2002a)	Discusses the principles the EPA would apply when assessing proposals that may have an effect on biodiversity values in Western Australia. The outcomes sought by this Position Statement are intended to: <ul style="list-style-type: none"> • promote and encourage all proponents and their consultants to focus their attention on the significance of biodiversity and, therefore, the need to develop and implement best practice in terrestrial biological surveys; and • enable greater certainty for proponents in the environmental impact assessment process by defining the principles the EPA will use when assessing proposals that may impact on biodiversity values.
Position Statement No. 7, Principles of Environmental Protection (EPA, 2004a)	Elaborates on the principles of environmental protection. See Section 5.1.2 for applicability to this Proposal.
Position Statement No. 9, Environmental Offsets (EPA, 2006)	Sets out a hierarchy for addressing environmental impacts (avoid, minimise (limit magnitude), rectify (repair, restore) and reduce (over time)) that should be addressed by mitigation measures before offsets are considered.
Guidance Statement No. 1, Guidance Statement for Protection of Tropical Arid Zone Mangroves along the Pilbara Coastline (EPA, 2001)	Provides the basis for managing development pressures on tropical and arid-zone mangroves and their habitats and dependent habitats.
Draft Guidance Statement No. 8, Environmental Noise (EPA, 2007a)	Provides guidance to proponents submitting proposals for environmental impact assessment to ensure that noise emissions from the premises on which the proposal is based comply with the Environmental Protection (Noise) Regulations.
Guidance Statement No. 12, Guidance Statement for Minimising Greenhouse Gas Emissions (EPA, 2002b)	Sets out objectives regarding the minimisation of greenhouse gas emissions from new or expanding operations.
Guidance Statement No. 20, Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia (EPA, 2009b)	Provides guidance on standards, sampling methods and protocols for the sampling of short-range endemic fauna undertaken for the environmental impact assessment of proposals.

EPA Position Statements	Description of Relevance
Guidance Statement No. 33, Environmental Guidance for Planning and Development (EPA, 2008b)	Provides the EPA's advice in relation to the environmental factor "recreation" and land use planning projects, in order to promote outcomes consistent with the objectives of the EP Act. The focus of the EPA is on the protection of recreational opportunities of high importance to the community that derive from the natural environment (for example, the coast) where these are consistent with maintaining key conservation values.
Guidance Statement No. 41, Assessment of Aboriginal Heritage (EPA, 2004b)	Provides guidance on the process for the assessment of Aboriginal heritage as an environmental factor. The guidance statement seeks to ensure that a proposal gives attention to the Aboriginal Heritage Act and the EP Act and that changes to the biological and physical environment resulting from the proposal do not adversely affect matters of heritage significance to Aboriginal people.
Guidance Statement No. 51, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA, 2004c)	Provides guidance on standards and protocols for terrestrial flora and vegetation surveys, particularly those undertaken for the environmental impact assessment of proposals.
Guidance Statement No. 56, Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia (EPA, 2004d)	Provides guidance on standards, sampling methods and protocols for terrestrial fauna surveys, particularly those undertaken for the environmental impact assessment of proposals.
EPA Environmental Assessment Guidelines	Description of Relevance
Environmental Assessment Guideline No. 3, Protection of Benthic Primary Producer Habitats in Western Australia's Marine Environment (EPA, 2009a)	Specifically applies to development proposals that are predicted to result in irreversible loss of or serious damage to marine benthic primary producer habitats. Guideline No. 3 defines and recognises the fundamental ecological importance of benthic primary producers and their habitats and provides a risk-based spatial assessment framework for assessing environmental impacts on such habitat. This framework provides the means for evaluating cumulative losses (i.e., historical and proposed losses) of benthic primary producer habitat within defined subecosystem areas called local assessment units. Cumulative loss guidelines based on six categories of marine ecological protection are provided, and the proponent must apply the guidelines to the assessment of ecological risks to benthic primary producer habitat associated with a proposal.
Environmental Assessment Guideline No. 4, Towards Outcome-based Conditions (EPA, 2009d)	Provides information for consideration as part of the environmental impact assessment process regarding key requirements of conditions, including the setting of baselines and monitoring.

Other state guidance relevant to the Proposal includes:

- Environmental Quality Criteria Reference Document for Cockburn Sound (2003-2004) (EPA, 2005);
- Western Australian Marine Oil Pollution Emergency Management Plan (WestPlan-MOP) (DPI, 2007);
- Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes (DEC, 2009a);
- Draft Treatment and Management of Soils and Water in Acid Sulfate Soil Landscapes (DEC, 2009b);
- Proposed Framework for Managing Acid Sulfate Soils (DoE, 2004b); and
- Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in New South Wales (NSW DEC, 2005)

5.2.2 Other Commonwealth legislation, policy and guidance

Legislation and regulations

A range of Commonwealth legislation and regulations of significance to the environment is likely to be relevant to the Proposal as outlined in Table 5.5.

Table 5.5 Commonwealth legislation and regulations, other than the EPBC Act and Sea Dumping Act, relevant to the Proposal

Legislation and Regulations	Description of Relevance
<i>Aboriginal and Torres Strait Islanders Heritage Protection Act 1984</i>	Preservation and protection from injury or desecration of areas and objects in Australia and its waters that are of particular significance to Aboriginals. Use of this act is intended to be constrained to occasions where it is considered that state or territory laws do not adequately protect Aboriginal objects and sites.
<i>Energy Efficiency Opportunities Act 2006</i>	Encourages large energy-using businesses to improve their energy efficiency. It does this by requiring businesses that consume more than 0.5 petajoules of energy per annum to identify, evaluate and report publicly on cost-effective energy-savings opportunities.
<i>Environment Protection and Biodiversity Regulations 2000</i>	Makes provision for the regulation of the interaction of persons with cetaceans within the Australian Whale Sanctuary to minimise the impact of activities on cetacean populations within the sanctuary.
<i>Maritime Transport and Offshore Facilities Security Act 2003</i>	Implements a maritime security regime to help safeguard Australia's maritime transport system and offshore facilities from terrorism and unlawful interference. Under this regime, all security-regulated ports, port facilities, offshore facilities, port and offshore service providers and ships must undertake security risk assessments and implement security plans to address identified risks.
<i>National Greenhouse and Energy Reporting Act 2007</i>	Sets out the national system of reporting requirements with respect to greenhouse gas emissions, reductions, removals and offsets, and energy consumption and production.
<i>Native Title Act 1993</i>	Requires consultation with native title holders and claimants to obtain access to land.
<i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>	Implements Australia's obligations under the International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978, known as Marine Pollution 1973 & 1978 (MARPOL 73/78). Annexes I VI of MARPOL 73/78 place controls on operational discharges at sea and prescribe construction and equipment standards.
<i>Quarantine Act 1908</i>	Prevents or controls the introduction, establishment or spread of diseases or pests that will or could cause significant damage to human beings, animals, plants, other aspects of the environment or economic activities.

Legislation and Regulations	Description of Relevance
<i>Historic Shipwrecks Act 1976</i>	Protects historic wrecks and associated relics that are more than 75 years old and in Commonwealth waters, extending from below the low water mark to the edge of the continental shelf. Each of the States and the Northern Territory has complementary legislation, which protects historic shipwrecks in State waters, such as bays, harbours and rivers. The Minister for Environment Protection, Heritage and the Arts can also make a declaration to protect any historically significant wrecks or articles and relics which are less than 75 years old.
<i>Environment Protection (Sea Dumping) Regulations 1983.</i>	Regulations under the <i>Environment Protection (Sea Dumping) Act 1981</i> which deal with matters such as payment of fees, reporting of relevant conduct and serving of notices.

Relevant strategies and other guidance

Other Commonwealth guidance, conventions and treaties relevant to the Proposal includes:

- A National Conservation Strategy for Australia (Department of Home Affairs and Environment, 1983);
- Intergovernmental Agreement on the Environment (Commonwealth of Australia, 1992);
- National Greenhouse Strategy (Commonwealth of Australia, 1998);
- National Strategy for Conservation of Australia's Biological Diversity (DEST, 1996);
- National Strategy for Ecologically Sustainable Development (Ecologically Sustainable Development Steering Committee, 1992);
- Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment (JAMBA) (Commonwealth of Australia, 1995b);
- Agreement between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds and Exchange of Notes (ROKAMBA) (Commonwealth of Australia, 2007a);
- Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (CAMBA) (Commonwealth of Australia, 1995c);
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000);
- Australian Ballast Water Management Requirements (AQIS, 2008);
- Code of Practice for Antifouling and In-water Hull Cleaning and Maintenance (ANZECC, 1997);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Commonwealth of Australia, 1995a);
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (Commonwealth of Australia, 1991);
- International Convention on the Control of Harmful Anti-fouling Systems on Ships (IMO, 2001);
- National Assessment Guidelines for Dredging (Commonwealth of Australia, 2009)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia, 2009b);
- National Biofouling Management Guidelines for Non-trading Vessels (Commonwealth of Australia, 2009c);
- National Environment Protection (Ambient Air Quality) Measure (NEPC, 1998, 2003);
- National Marine Oil Spill Contingency Plan (AMSA, 2010a);
- Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships 1973 (MARPOL 73/78) (Commonwealth of Australia, 2007b).

Additionally, greenhouse gas regulatory measures may be mandated by Commonwealth carbon pollution reduction scheme legislation.

6. Impact assessment approach

6.1 INTRODUCTION

Part IV of the EP Act provides for the EPA to conduct environmental impact assessment in accordance with administrative procedures and policies (guidance statements, notes and guidelines) that either define or guide the process and acceptability of proposals. The EPBC Act provides for DSEWPC to also undertake assessment of the Proposal because it involves matters of national environmental significance. This assessment will be undertaken independently of the state processes, but will be a “coordinated” assessment to avoid any duplication of processes.

The controlling provisions of the EPBC Act relevant to this proposal are Sections 18 and 18a (Listed Threatened Species and Communities), Section 20 (Listed Migratory Species), and Sections 23 and 24a (Commonwealth Marine Areas). In addition to the EPBC Act, the requirements of the *Environment Protection (Sea Dumping) Act 1981* also need to be satisfied.

The EPA has recently completed a Review of the Environmental Impact Assessment Process in Western Australia (EPA, 2009e) and recommended trialling a more structured risk-based approach to environmental impact assessment. API agreed to trial the new risk-based approach with its mine and rail proposal, which is the subject of another PER (API, 2010).

With respect to this Proposal, API has carried out a more traditional environmental impact assessment in accordance with existing guidelines. The following matters related to API’s approach to impact assessment in this Proposal are discussed herein:

- environmental aspects and environmental factors;
- an overview of potential impacts;
- the structure of the impact assessment; and
- environmental studies.

6.2 ENVIRONMENTAL ASPECTS AND ENVIRONMENTAL FACTORS

The Proposal may affect a number of environmental factors directly or indirectly and to various extents. Elements of the Proposal that may interact with the environment are referred to as environmental aspects.

Key environmental aspects of the Proposal have been identified as:

- dredging and dredge spoil disposal;
- causeway construction;
- terrestrial disturbance/clearing; and
- operational activities.

Environmental factors are components or values of the environment that may be affected by environmental aspects of the Proposal. The environmental factors that were identified for the Proposal as a part of the scoping phase are:

- benthic primary producer habitat;
- mangroves;
- marine fauna;
- water and sediment quality;
- terrestrial vegetation;
- terrestrial fauna;
- soils;
- climate change (greenhouse gas emissions);
- indigenous heritage; and
- air quality.

As outlined in Section 4, stakeholder consultation has identified a number of matters of concern to the local community that are, in some cases, more specific or additional to the environmental factors identified during the scoping phase (as listed above). These included:

- recreational use and access;
- fisheries, including pearling, crabs, prawns and recreational fisheries in general; and
- impacts on the community from noise, dust and light.

6.3 OVERVIEW OF POTENTIAL IMPACTS

Potential impacts from the Proposal have been identified based on the interaction between the environmental aspects and environmental factors discussed in Section 6.2.

A list of potential impacts on environmental factors as identified during the environmental scoping phase is presented in Table 6.1.

Table 6.1 Potential impacts arranged by environmental factor and environmental aspect

Environmental Factor	Environmental Aspect	Potential Impact
Benthic primary producer habitat	Causeway construction	Direct loss above cumulative loss guidelines within causeway footprint.
	Causeway construction	Indirect loss above cumulative loss guidelines from turbidity or sedimentation during causeway construction.
	Dredging & disposal	Direct loss above cumulative loss guidelines within shipping channel, berth pockets and disposal areas footprint.
	Dredging & disposal	Indirect loss above cumulative loss guidelines due to turbidity or sedimentation impacts.
	Operational activities	Large oil spill.
Mangroves	Causeway construction	Direct loss above cumulative loss guidelines within causeway.
	Causeway construction	Indirect loss above cumulative loss guidelines due to altered coastal processes (accretion or erosion).
	Operational activities	Large hydrocarbon spill (>100 tonnes).
	Terrestrial disturbance/clearing	Direct loss above cumulative loss guidelines within causeway.
Marine fauna	Causeway construction	Disturbance from noise during construction activities.
	Dredging & disposal	Introduction of marine pests, including impact on aquaculture activities.
	Dredging & disposal	Mortality of coral spawn due to increased suspended sediment load within water column.
	Dredging & disposal	Disturbance from noise during construction activities.
	Dredging & disposal	Vessel strikes on protected marine fauna.
	Operational activities	Light disturbance on turtles.
	Operational activities	Vessel strikes on protected marine fauna.
	Operational activities	Introduction of marine pests.
	Operational activities	Ship-loading noise or rail noise disturbance of marine mammals and turtles.
	Operational activities	Large hydrocarbon spill.
Operational activities	Small hydrocarbon spill.	

Environmental Factor	Environmental Aspect	Potential Impact
Terrestrial fauna	Operational activities	Disturbance to migratory birds from noise.
	Operational activities	Light disturbance.
	Operational activities	Loss of listed native fauna habitat Large hydrocarbon spill.
	Terrestrial disturbance/clearing	Loss of native subterranean fauna habitat.
	Terrestrial disturbance/clearing	Loss of listed native fauna habitat.
Terrestrial vegetation	Operational activities	Impacts on native vegetation, including due to introduction of weed species.
	Operational activities	Accidental fire.
	Terrestrial disturbance/clearing	Direct loss of declared Rare Flora or Priority species.
	Terrestrial disturbance/clearing	Loss of conservation significant native vegetation and flora within footprint.
	Terrestrial disturbance/clearing	Other impacts on terrestrial vegetation.
Water quality	Dredging & disposal	Turbidity impacts on aquaculture lease areas.
	Operational activities	Impacts on water quality from operation of desalination plant.
Air quality	Operational activities	Release of greenhouse gases during power generation that exceed guideline levels.
	Terrestrial disturbance/clearing	Impacts on vegetation from dust generation.
	Terrestrial disturbance/clearing	Impacts on nearby towns and communities from dust generation
Sediment quality	Operational activities	Impacts on sediment quality following contamination of sediments (e.g., by anti-foulants).
Soil quality	Operational activities	Impacts on soil quality following small chemical spills.
	Terrestrial disturbance/clearing	Disturbance or exposure of acid sulphate soils during construction.
Indigenous/maritime heritage	Terrestrial disturbance/clearing	Disturbance or destruction of heritage sites.

A number of additional potential impacts were identified following submission of the draft ESD and are discussed within Sections 7 to 20 of this PER/draft PER, including impacts on aquaculture from suspended sediment generated during dredging, impacts to terrestrial fauna on Dixon Island by feral animals, impacts to epifauna following leaching of toxic metals from iron ore to be stored at the port and impacts resulting from noise during construction and operations.

6.4 STRUCTURE OF IMPACT ASSESSMENT

6.4.1 Division into four parts

Noting the nature of environmental factors identified during consultation and scoping for the Proposal, the environmental impact assessment has been divided into four parts:

- Part 3: Marine environmental impact assessment
- Part 4: Terrestrial environmental impact assessment
- Part 5: Social and cultural environmental impact assessment.
- Part 6: Matters of National Environmental Significance

An overview of these parts is provided in the following subsections.

Part 3: Marine Environmental Impact Assessment

Part 3 assesses potential impacts on the following marine environmental factors:

- benthic primary producer habitat (Section 7);
- mangroves (Section 8);
- marine fauna (Section 9);
- introduced marine pests (Section 9); and
- water and sediment quality (Section 10).

It also assesses the potential impacts of hydrocarbon spills on these environmental factors (Section 11).

Part 4: Terrestrial Environmental Impact Assessment

Part 4 assesses potential impacts on the following terrestrial environmental factors:

- terrestrial vegetation (Section 12);
- terrestrial fauna (Section 13);
- soils (Section 14); and
- climate change (greenhouse gas emissions) (Section 15).

Part 5: Social and Cultural Environmental Impact Assessment

Part 5 assesses potential impacts on the following social and cultural environmental factors:

- Aboriginal heritage (Section 16);
- air quality (Section 17);
- noise (Section 18); and
- recreational use (Section 19).

Part 6: Matters of National Environmental Significance

Part 6 (Section 20) provides information relevant to the matters of national environmental significance as defined under the EPBC Act, which for marine fauna, is a summary of information contained in Sections 3, 7 and 9.

6.4.2 Content of impact assessment sections

For each of the impact assessment sections, a standard structure has been used to describe the factor, its value, potential impacts, mitigation and predicted outcome, as follows:

- key statutory requirements, policy and guidance: describes literature relevant to the protection and management of the factor or potential impact;
- description: provides background to the environmental factor or aspect that is the subject of the section (e.g., benthic primary producer habitat, terrestrial vegetation, chemical spills) and provides a brief outline of relevant surveys, investigations and modelling reports that have been completed;
- impact assessment: discusses in detail the potential for environmental impacts and their significance within the context of the knowledge provided by relevant surveys, investigations and modelling reports;
- mitigation: provides a high-level discussion of API's proposed approach to avoiding and managing its impacts, with further discussion on the structure of API's environmental management system discussed in Section 21, and management plans for a number of specific environmental factors or types of impacts included in Appendix 3; and
- predicted outcome: taking into account the conclusions of the impact assessment and the proposed mitigation, this section provides a summary of the predicted outcome for the environmental factor or aspect within the context of the EPA and EPBC objectives.

6.5 ENVIRONMENTAL STUDIES

A number of investigations were identified during the environmental scoping stage that would provide data about environmental aspects or environmental factors to support the environmental impact assessment in this PER/draft PER. These studies and their relevant outcomes are summarised in the description section of each of the environmental factor sections (Sections 7 to 20) and then discussed in sufficient detail in the impact assessment section to support the assessment of significance of the potential impact to which the study is relevant. The full list of studies is as shown in Section 3.1 and are included as Appendix 1 on the CD attached to the PER/Draft PER document.

