Australian Government
Department of the Environment

ntepa
Northern Territory
Environment Protection Authority

TERMS OF REFERENCE FOR THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT (NT)

GUIDELINES FOR THE CONTENT OF A DRAFT PUBLIC ENVIRONMENT REPORT (AUSTRALIAN GOVERNMENT)

TROPICAL TIDAL TESTING CENTRE

TENAX ENERGY PTY LTD

(EPBC 2014/7299)

December 2014

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1 Introduction

The Proponent, Tenax Energy Pty Ltd, proposes to construct and operate the Tropical Tidal Testing Centre (T^3C) in the Clarence Strait, approximately 50km north-east of Darwin, NT. The T^3C would be located in South Channel, between Gunn Point and South West Vernon Island.

The proposed facility will have capacity for 15 tidal energy generators arranged in three bays of five generators with a total marine footprint of approximately 36.75 ha; however the area under lease is expected to be significantly greater to allow for flexibility of deployment. The configuration of the tidal generators within the generator bays would be flexible and exact locations of the generator bays and underground cabling requirements within Clarence Strait have not been determined. Each generator bay will be connected via submarine cable to an onshore control room located on Gunn Point. Connection to the Darwin/Katherine electricity grid will be achieved via the extension of an existing 22 kV power line (either above or below ground) by approximately 7 km to the onshore control room. The new line will be located within 50 m of Gunn Point Road. The operational life of the project is expected to be approximately 25 years. All of the above, taken together, constitute the proposed action.

The proposed facility is being developed to test tidal energy technologies in order to demonstrate their ability to perform in Australian-specific climatic conditions, to test and compare the efficacy of different tidal energy designs and to better understand the effects of tidal turbines on the marine environment.

On 17 December 2013, the Proponent submitted a Notice of Intent for the proposed action for assessment under the Northern Territory (NT) *Environmental Assessment Act* (EA Act). On 14 April 2014 the Northern Territory Environment Protection Authority (NT EPA) decided that the proposed action required formal assessment under the EA Act at the level of an Environmental Impact Statement (EIS). Issues of concern contributing to the decision include:

- disturbance to and potential loss of individuals of threatened, marine and migratory species listed under the *Environment Protection and Biodiversity Conservation Act 1999* and the *Territory Parks and Wildlife Conservation Act*
- the potential for construction and operation of the project to affect water quality and introduce marine pests
- the significance of the area for commercial, recreational and charter tourism fishing activities
- the potential to disturb sites with indigenous and non-indigenous cultural or archaeological significance
- the potential to conflict with strategic future use of the Clarence Strait area.

The proposal was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to the Minister for the Environment on 5 August 2014. The Minister determined on 8 September 2014 that approval is required as the proposed action (EPBC 2014/7299) has the potential to have a significant impact on the following matters of National Environmental Significance (NES) that are protected under Part 3 of the EPBC Act:

- Listed threatened species and communities (s18 & s18A)
- Listed migratory species (s20 & s20A).

The delegate of the Minister determined, on 8 September 2014, that the proposed activity be assessed by a Public Environment Report (PER).

The assessment process is being conducted jointly by both governments, to streamline the process while satisfying requirements of the EPBC Act and EA Act.

These Terms of Reference / Guidelines are to assist the Proponent in preparing a single Environmental Impact Assessment (EIA) document for the proposed action that fulfils the requirements of the Australian Government's PER in accordance with Part 8 of the EPBC Act and the NT Government's EIS in accordance with Clause 8 of the NT Environmental Assessment Administrative Procedures of the EA Act.

Information about the proposed action and its relevant impacts, as outlined in this document, is to be provided in the Proponent's EIA documentation. This information should be sufficient to allow:

- the NT EPA to make informed recommendations to the NT Minister for the Environment
- the Australian Government Minister to make an informed decision on whether or not to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.

2 Description of the Proposed Action

2.1 General Information

Provide the background and context of the proposed action, including:

- the title of the action
- the full name and postal address of the designated Proponent
- a clear outline of the objective of the action
- the background to the development of the action
- the location of the action in the region and its proximity to:
    - landmark and marine features
    - sites of sacred, cultural, historical or social interest
    - regional community centres
    - areas on the National Reserve System
    - sensitive environments, such as the marine environment of Clarence Strait, significant natural features and conservation reserves
- an outline of similar projects undertaken by the Proponent elsewhere demonstrating its commitment to and achievement of effective environmental management
- identification of areas proposed for future development or expansion, or any other potential future activities being planned
- how the action relates to any other proposals or actions (of which the Proponent should reasonably be aware) that have been or are being undertaken, that have been approved in the local area or that are proposed for the region
- climate and atmospheric characteristics relevant to the action (e.g. air quality, seasonal temperatures, humidity, wind, evaporation, seasonal and diurnal tides, extreme events such as cyclones, storm surge and rainfall)
- the current status of the action.

The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- the person proposing to take the action
- for an action for which a person has applied for a permit, the person making the application

If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included.

2.2 Approvals and Conditions

The EIA documentation must provide information on requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply, to the proposed action, including:

- National, State and/or Territory standards, codes of practice, guidelines and legislation relevant to the action
- a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the action
- details of any local or Territory Government planning scheme, or plan or policy under any local or Territory Government planning system that deals with the proposed action
- a summary of current agreements between the Proponent and the Northern Territory Government, and/or the Australian Government, and/or other stakeholders, including Traditional Owners and/or land managers
- a statement identifying additional approvals that are required
- a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

2.3 Project Components

All construction, operational and decommissioning components of the action should be described in detail to allow a detailed understanding of infrastructure design and engineering. All construction (including site preparation), operation and management elements of the action must be described in detail. This should include the precise location (including coordinates) of all works to be undertaken, structures to be built or elements of the action that may have relevant impacts, including on matters of NES.

The description of the action must also include (but not be limited to) details on:

- how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts
- the deployment and management of the chosen technology in a tropical marine environment including details, if available, of other projects where similar technologies have been deployed and empirical evidence of the environmental impacts and management outcomes associated with those technologies
- the depth of water at proposed sites, and estimated depth of clear, unobstructed water above the structures at lowest astronomical tide (LAT)
- the disturbance associated with all construction activity, such as temporary access tracks and dredging

- design parameters for those structural aspects of the action that have impact potential - for example, design specifications to ensure structural stability of the units in situ (given expected variable oceanographic conditions), minimisation of noise levels and prevention of fluid leaks
- the horizontal drilling process and location
- related proposals, including those that may involve a potential for expansion or additional development by the Proponent, and possible timeframes
- elements of the action with potential relevant impacts for matters protected under Part 3 of the EPBC Act and species protected under the *Territory Parks and Wildlife Conservation Act* (TPWC Act)
- potential design parameters for offshore infrastructure that could manage or mitigate the potential relevant impacts referred to in the previous point (e.g. structural designs to minimise the risk of faunal strike)
- all other safeguards and mitigation measures proposed to deal with relevant impacts of the action with reference to any similar projects where such measures have been implemented and achieved positive environmental outcomes.

2.3.1 Construction Phase

Describe the elements of the construction phase, including:

- vessels and machinery required
- construction materials required – major types, quantities, qualities, sources
- limitations of construction methods, in the context of:
  - unstable, unconsolidated marine sediments, such as the potential for ‘mud waves’ and long term subsidence
  - an acidic, anaerobic, hyper-saline environment. Discuss long-term resilience of building materials in the proposed environment
  - the intertidal zone, periodically inundated by tidal waters.

Describe management of construction traffic, including:

- operating times and scheduling
- vehicle/vessel numbers and frequency
- traffic flow management.

Describe water management for the construction phase of the proposed action, including consideration of:

- water requirements – uses, quantities, quality and sources, such as for dust suppression, construction requirements, drinking water, ablutions and sewage treatment and landscaping
- stormwater, drainage, erosion and sediment control
- water re-use.

Describe proposed rehabilitation of any temporarily disturbed areas.

Describe waste management for the construction phase of the action.

Outline any new ancillary infrastructure and upgrades required to service the proposed action, including supply of electricity, water, sewerage, and road access.

2.3.2 Post-construction Phase

For the post-construction phase of the action, describe proposed:

- land and infrastructure tenure/ownership arrangements and responsibility for maintenance of project components
- electricity generating potential
- provision for ongoing maintenance of onshore and offshore components and servicing infrastructure
- security provisions and infrastructure, and access to/for emergency services within the project area.

2.4 Alternatives

The EIA documentation should describe any feasible alternatives to carrying out the proposed action. The choice of the preferred option(s) should be clearly explained, including how it complies with the principles and objectives of ecologically sustainable development (ESD).

Alternatives should include:

- not proceeding with the action. Any consequences of not proceeding with the action should be explained
- site selection, including alternative layouts and alternative locations that improve project outcomes, such as reducing destruction of mangrove areas or seagrass beds
- options to optimise ecological sustainability of the action, such as alternatives to reduce/offset the project's environmental footprint
- consideration of alternative environmental management measures for key risks/impacts.

Discussion should include:

- adverse and beneficial effects of alternatives at national, territory, regional and local levels
- the comparison of short and long term advantages and disadvantages of the alternatives
- a comparative description of the impacts of each alternative on the NES matters protected by controlling provisions of Part 3 of the EPBC Act
- sufficient detail to make clear why any alternative is preferred to another.

3 Risk Assessment

3.1 Risk Assessment Approach

The EIA documentation should be undertaken with specific emphasis on the identification, analysis and mitigation of risks through a whole-of-project risk assessment. Through this process, the EIA process will:

- acknowledge and discuss the full range of risks presented by the proposed action, including those of special concern to the community
- quantify and rank risks so that the reasons for proposed management responses are clear

- acknowledge levels of uncertainty about estimates of risk and the effectiveness of risk controls
- explicitly identify those members of the community expected to accept residual risks and their consequences, providing better understanding of equity issues.

Statements about levels of uncertainty should accompany all aspects of the risk assessment. Steps taken to reduce uncertainty or precautions taken to compensate for uncertainty should be identified and their effect/s demonstrated.

Information provided should permit the reader to understand the likelihood of the risk, its potential severity, and any uncertainty about the effectiveness of controls. Levels of uncertainty that preclude robust quantification of risk should be clearly acknowledged.

Risk rankings assigned should be fully justified. Where a risk score associated with the likelihood or consequence of an impact is reduced as a result of proposed mitigation measures, clear justification should be provided for the reduction in score. The adequacy and feasibility of mitigation measures must be demonstrable.

Sufficient quantitative analysis should be provided to indicate whether risks are likely to be acceptable or tolerable. A comparison can be made with similar developments in Australia and internationally. Assumptions used in the analyses should be explained. Relevant standards, codes and best practice methodologies that minimise risks should be discussed.

The risk assessment should be based on international best practice. Processes for risk management are formalised in Standards Australia / Standards New Zealand (e.g. AS/NZS ISO 31000:2009; HB 436:2004; HB 158:2010; HB 203:2012).

A number of key risks have been identified through a preliminary assessment of the action. Each of the identified risks described in this Section should be addressed by the Proponent in the risk assessment and management process.

Additionally, it is expected that further risks will be identified through the comprehensive risk assessment process required for the EIA process. These should also be addressed and appropriate management initiatives developed.

Environmental objectives, or overarching goals identifying environmental values to be protected, have been identified for some key risks.

3.2 Cumulative Impacts

Cumulative impacts can arise from compounding activities of a single operation or multiple operations, as well as the aggregation and interaction of project impacts with other past, current and future activities that may not be related to the proposed action.

An assessment of cumulative environmental impacts should be undertaken that considers the potential impact of the proposed action in the context of existing developments and reasonably foreseeable future developments, to ensure that any potential environmental impacts are not considered in isolation. The extent of cumulative impacts to be considered depends on the nature of the environmental issue and on factors such as ecosystem resilience or sensitivity of receptors. The EIA document should address potential cumulative impact of the action on ecosystem resilience and, in this context, the cumulative effects of climate change impacts on the environment must also be considered.

The risk assessment should discuss cumulative impacts where relevant, and account for impacts on an appropriate scale, in consideration of the following:

- landscape change originates not only from single projects and management actions but also from complex and dynamic interactions of multiple past, present and future management actions
- biophysical, social and economic change accumulates through additive or interactive (or synergistic) processes. The aggregate impact of multiple actions on the environment can be complex and may result in impacts that are more significant because of interactive processes
- any given action does not operate in isolation. The most significant changes are often not the result of the direct effects of an individual action, but from the combination of multiple minor effects over the accumulation of time.

3.3 Biodiversity

Environmental Objectives

- To maintain the conservation status, diversity, geographic distribution and productivity of flora and fauna at species and ecosystem levels through the avoidance or management of adverse impacts.
- To minimise the risk of Significant Impacts to threatened species and communities, and migratory species listed under the EPBC Act, and species listed under the TPWC Act, during construction and operation of the proposed action.
- To prevent the introduction and/or spread of invasive and pest species as a result of the proposed action.

Information Requirements

A detailed description (based on surveys) of the marine and onshore environments (including threatened and/or migratory species listed under the EPBC Act) likely to be affected by the proposed action must be provided. This should serve as a benchmark against which the impacts of the project may be assessed and monitored over time.

The detailed description must:

- describe the area of the proposed action, and the surrounding area, explaining:
  - local oceanographic processes (tidal, current velocities and direction, sediment dynamics, wave and swell cycles etc.)
  - ambient water quality (chemical, physical and biological), including reference to the metric by which water quality is measured
  - ambient underwater noise levels, including reference to the metric by which underwater noise levels are measured
- describe the marine benthic and onshore habitats within the area. Sensitive environments/habitats should be identified and key ecological relationships and interdependencies discussed
- for the listed threatened and/or migratory species shown in Attachment 3:
  - discuss the quality and quantity of available habitat
  - discuss the local population's size and its distribution, including at different life cycle stages, for example, when the population is breeding, foraging, resting and/or migrating - maps showing the local population's range, important habitat areas and migratory pathways must be included
  - discuss the importance of the local population in a local, regional, NT, national and international context

  - discuss (with reference to maps showing important habitat areas) the areas to be disturbed or altered by development as part of the proposed action, making clear how they will be disturbed or altered. Where marine habitat information is not available for areas that are likely to be disturbed, marine benthic mapping at an appropriate scale should be conducted

- explain the basis for statements made in response to the above, that is, whether the Proponent:
  - is identifying and relying upon existing literature or previous surveys, or
  - has conducted its own surveys specifically for this purpose
- where the Proponent has conducted surveys, explain the scope, timing and methodology for each survey. For each survey, describe the information and baseline established, and note all comments received from experts on the surveys. Experts are people or organisations recognised as having extensive expertise about the identified listed threatened and/or migratory species.

Assessment of Risks

The EIA documentation must include an assessment of all of the relevant risks of the action to the listed threatened and/or migratory species shown at Attachment 3, those species protected under the TPWC Act, sensitive terrestrial vegetation and marine benthic communities. Potential impacts during both the construction, operational and the decommissioning phases of the project should be addressed, and the following information provided:

- a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts to listed threatened and/or migratory species at the local, regional, NT, national and international context
- a statement whether any relevant impacts to listed threatened and/or migratory species are likely to be unknown, unpredictable or irreversible
- analysis of the significance of the relevant impacts
- any technical data and other information used or needed to make a detailed assessment of the relevant impacts to listed threatened and/or migratory species.

The EIA documentation should identify and discuss the source of potential impacts from installation, operation and decommissioning on protected matters. This should include but not be limited to:

- physical or behavioural impacts from noise, pressure change and/or vibrations. Information on the expected source level, frequency and propagation characteristics of noise and/or pressure should be provided. Where there is likely to be noise related impacts from the project, noise modelling should be undertaken to determine the severity and extent of potential impacts
- an analysis of the risk and potential impact of fauna strike and entanglement with offshore infrastructure. The design, size and rotor sweep of the tidal energy generators should be discussed
- the physical presence of the installations and the potential for the obstruction of migratory pathways. Gene flow and other biological processes that may be affected by altered migratory behaviours should also be discussed
- habitat modification from anchoring, cable-laying and/or changes to sediment transport and hydrodynamics (sediment mobilisation, erosion, transportation and deposition, smothering, turbidity and seabed scour)
- invasive marine species (introduction and spread)

- toxicological impacts from the use of lubricants, anti-foulants and anti-corrosion measures. All other wastes and their sources, including fuel and oil leakage from vessels associated with construction, operation and decommissioning of all project components should be identified
- increased artificial lighting during construction and operation
- information on the potential impacts of electromagnetic fields generated by the tidal energy turbines on listed threatened and/or migratory species.

Consultation with the relevant species experts to determine the nature and extent of impacts to threatened and migratory species known to inhabit (or migrate through) the project area should be included.

Mitigation

The EIA documentation must provide information on proposed safeguards and mitigation measures to deal with the relevant impacts of the action. Specific and detailed descriptions of proposed measures must be provided and substantiated, based on best available practices and must include the following elements:

- a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including:
  - a description of proposed safeguards and mitigation measures to deal with relevant impacts of the action, including mitigation measures proposed to be taken by the Territory government, local government or the Proponent
  - assessment of the expected or predicted effectiveness of the mitigation measures
  - any statutory or policy basis for the mitigation measures
  - the cost of the mitigation measures
- a detailed outline of an Environmental Management Plan (EMP) as discussed in Section 4 of this document.
- the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.

Monitoring

For identified threatened species present in the local area, a proposed monitoring program to determine the effectiveness of the mitigation measures should be outlined. The monitoring program should identify the methodology for monitoring potential impacts and identify clear thresholds and contingency measures that will be implemented in the event that the mitigation measures appear ineffective.

3.4 Land Use Conflicts

Information Requirements

The EIA documentation should discuss the strategic importance of Clarence Strait and adjacent Glyde Point with respect to the potential for future development as identified through the draft Darwin Regional Land Use Plan 2014.

Discuss the significance of the Clarence Strait area for the commercial fishery and recreational activities such as fishing, boating, camping and diving and identify any areas within the Clarence Strait where such activities would need to be excluded and the duration for which that access would be limited.

Assessment of Risks

Assess the risk and implications of the proposed action conflicting with future industrial, commercial and residential development of the area and the navigability of Clarence Strait or adjacent waters for commercial shipping. Conversely, the risk to the proposal of potential major land use changes identified in the draft Darwin Regional Land Use Plan 2014 should be assessed.

Assess the risks associated with commercial and recreational fishing, and general recreational activities as a result of the proposed action. In particular, describe:

- the potential impacts on boat-based recreation such as fishing and tourism activities including scuba diving, boating and sailing, and chartered fishing tours
- the potential impacts on commercial fishing licences in the region
- the potential for conflicts between users of the water ways and project infrastructure, and the consequences for NT Government law enforcement agencies.

Mitigation and Monitoring

Provide details on how access restrictions and communication with the public will be managed, and any mechanisms for monitoring and reporting complaints and incidents.

3.5 Cultural Heritage

Information requirements

The EIA documentation should include the results of searches on the Northern Territory Government's Heritage Database, the Australian Government Shipwrecks Database and the Australian Government's Environmental Reporting Tool. Where information is not confidential or of a sensitive nature, the results of any archaeology and heritage assessment should be included.

A detailed, physical maritime survey (e.g. remote sensing and field validation) should be conducted to capture any objects that may be located within the proposed marine area of the action.

An archaeological/heritage survey should be conducted in the onshore area of the proposed action.

Identify all Indigenous/non-Indigenous places of historic or contemporary cultural heritage significance including:

- areas nominated for listing or listed on the Register of the National Estate or the Northern Territory Heritage Register, or Interim listing on either of these Registers
- areas nominated for listing or listed on Commonwealth and Territory Heritage registers and Commonwealth and Territory registers of indigenous cultural heritage
- sacred sites - provide evidence of an Authority Certificate under the Northern Territory *Aboriginal Sacred Sites Act*
- traditional and historic Aboriginal and Torres Strait Islander (ATSI) archaeological and heritage places and objects protected under relevant Territory and/or Commonwealth legislation
- any historic shipwrecks that may be encountered and are protected under the *Historic Shipwrecks Act 1976*
- areas with special values to indigenous and non-indigenous people (e.g. traditional land use, landscape, visual environment, recreational, commercial, tourism, fisheries, scientific, educational and marine archaeological sites)

- European and Macassan historic sites.

Assessment of risks

Assess the risks associated with the proposed action on sacred sites, heritage places and cultural heritage sites more broadly. The EIA documentation should provide:

- details of the requirements to apply to, or applications already made to, the NT Minister for Lands, Planning and the Environment to disturb or destroy a prescribed archaeological place and/or object under the *Heritage Act*
- an assessment of risks to any sites or items at risk which have indigenous or historic cultural heritage significance.

Mitigation

The EIA document should describe the prevention and mitigation of potential risks to existing sites or items of indigenous or historic cultural heritage significance, and include:

- procedures to avoid significant sites and areas
- protection of key sites during construction, post-construction and decommissioning work
- measures to enable the Proponent, or contractor to the Proponent, to meet its duty of care to protect the cultural heritage values of any places or items of significance
- procedures for the discovery of items during the course of carrying out the proposed action.

The EIA documentation should include the outline of a draft heritage management strategy that seeks to avoid impacts to and afford protection for significant sites or items. The heritage management strategy should include provisions to mitigate and manage any items or places identified prior to or during construction and maintenance activities. When preparing the archaeological report and the heritage management plan it is strongly recommended that the Proponent give consideration to, and refer to, the Burra Charter and guidelines at: http://australia.icomos.org/publications/charters/ to ensure that the investigations and mitigation measures proposed meet best practice standards for the management of heritage in Australia.

3.6 Socio-economic

The economic and social impacts of the action, both positive and negative, must be analysed. Matters of interest may include:

- details of any public consultation activities undertaken, and their outcomes
- projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies
- employment opportunities expected to be generated by the project (including construction and operational phases).

Economic and social impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the proposed action, as identified in Section 2.4 Alternatives above, should also be included.

4 Environmental Management

Specific safeguards and controls, proposed to minimise or remedy environmental impacts identified in the risk assessment process, are to be included in an EMP.

The EMP should be strategic, describing a framework for management, mitigation and monitoring programs for the significant environmental impacts of the action. The scope,

content and structure of the EMP will be a function of the outcomes of the environmental risk assessment and determined by the significance of the environmental impacts. The EMP should not be prepared in isolation but should be consistent and integrated with the principles of an environmental management system. Specific management practices and procedures should be included in the EMP, where possible. Reference should be made to relevant legislation, guidelines and standards, and proposed arrangements for necessary approvals and permits should be noted. Proposed reporting procedures on the implementation of the plan, independent auditing or self-auditing and reporting of accidents and incidents should be included. The agencies responsible for overseeing implementation of the EMP should be identified. The EMP would continue to be developed and refined following the conclusion of the assessment process, taking into consideration the proposed timing of development activities, comments on the EIA documentation and incorporating the Assessment Report recommendations (if any) and conclusions, and any conditions of the Australian Government Minister's approval.

5 General Advice on the PER/EIS

5.1 General Content

The EIA documentation should be a stand-alone document. It should contain sufficient information to avoid the need to search out previous or additional, unattached reports. The document should take into consideration the EPBC Act Significant Impact Guidelines that can be downloaded from the following web site: http://www.environment.gov.au/epbc/guidelines-policies.html.

The EIA documentation should enable interested stakeholders and government to understand the environmental consequences of the proposed action. Information provided should be objective, clear, and succinct and, where appropriate, be supported by maps (using an appropriate scale, resolution and clarity), plans, diagrams and other descriptive detail should be included. Technical jargon should be avoided or accompanied by a clear explanation so that it is readily understandable. Cross-referencing should be used to avoid unnecessary duplication of text.

The level of analysis and detail should reflect the level of significance of the potential impacts on the environment, as determined through adequate technical studies. Consideration of appropriate spatial, temporal and analytical scales should be used to clearly communicate the potential impacts to the environment. Reliability of the data and an explanation of the sampling criteria and approach should be provided where data are used to support statements, studies and claims in the EIA documentation. All known and unknown variables, limitations or assumptions made must be clearly stated and discussed.

Information materials summarising and highlighting risks of the proposed action should be provided in a culturally appropriate format and language, accompanied by graphics and illustrations that assist with interpretation, where relevant.

5.2 Structure, Format and Style

The EIA document should comprise of three elements:

1. Executive summary

The executive summary must include a brief outline of the proposed action and each chapter of the document, allowing the reader to obtain a clear understanding of the proposed action, its environmental implications and management objectives. It must be written as a stand-alone document, able to be reproduced on request by interested parties who may not wish to read the EIA documentation as a whole. The executive summary should briefly:

- state the background and the need for the proposal
- describe the expected, likely and potential impacts of the proposal on the environment during construction, operation and post-operation phases
- summarise the environmental protection measures and safeguards, monitoring and reporting procedures to be implemented for the proposal.

2. Main text of the document

The main text of the EIA documentation should include a list of abbreviations, a glossary to define technical terms, acronyms, abbreviations, and colloquialisms. The document should consist of a series of chapters detailing the level of significance and management of the potential impacts on the environment from the proposed action.

An overall conclusion as to the environmental acceptability of the project should be provided, including discussion on compliance with principles of ESD and the objects and requirements of the EPBC Act. Reasons justifying undertaking the project in the manner proposed should also be outlined.

Measures proposed or required by way of offset for any unavoidable impacts on NES matters, and the relative degree of compensation, should be restated here.

3. Appendices

The appendices must include detailed technical information, studies or investigations necessary to support the main text. These will be made publicly available and should include:

- a table listing how these Guidelines/Terms of Reference have been addressed in the EIA documentation, cross-referenced to chapters, page numbers and/or appendices
- the name of, work done by and the qualifications and experience of the persons involved in preparing the EIA documentation
- a table listing commitments made by the Proponent
- detailed technical information, studies or investigations necessary to support the main text.

The EIA documentation should be produced on A4 size paper capable of being photocopied, with any maps, diagrams or plans on A4 or A3 size paper, and in colour, if possible.

5.3 Referencing and Information Sources

All sources must be appropriately referenced using the Harvard Standard. The reference list should include the address of any internet pages used as data sources. All referenced supporting documentation and data, or documents cited must be available upon request. For information given in the EIA documentation, the following must be stated:

- the source of the information
- how recent the information is
- how the reliability of the information was tested
- what uncertainties (if any) are in the information.

All known and unknown variables or assumptions made in the EIA documentation must be clearly stated and discussed. Confidence levels must be specific, as well as the

sources from which they were obtained. The extent to which a limitation, if any, of available information may influence the conclusions of the environmental assessment should be discussed.

The EIA documentation must include information on any consultation about the action, including:

- any consultation that has already taken place about the proposed action and, any documented response to, or result of, the consultation
- a list of persons and agencies consulted during preparation of the EIA documents
- proposed consultation about relevant impacts of the action
- identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

The EIA process has an important role in informing the public about the proposed action. It is essential that the Proponent demonstrates how any public concerns were identified and will influence the design and delivery of the action. Public involvement and the role of government organisations should be clearly identified. The outcomes of any surveys, public meetings and liaison with interested groups should be discussed including any changes made to the proposal as a result of consultation. Details of any ongoing liaison should also be discussed.

5.4 Administration

The Proponent is required to obtain approval from the Australian Government Minister to publish the draft EIA documentation. After receiving approval to publish, the Proponent is required to make the draft EIA documentation available for public comment. Specific instructions regarding publication requirements will be provided as part of the Australian Government Minister's direction to publish.

Once publication is approved, the Proponent should lodge five bound hardcopies and an electronic (Adobe PDF format) copy of the EIA document with the NT EPA. The electronic copies should be provided both as a single file of the entire document and separate files of the document components. A Microsoft Word copy of the EIA documentation should be provided to facilitate the production of the Assessment Report.

The Proponent should consider the file size, format and style of the document appropriate for publication on the internet. The capacity of the website to store data and display the material may have some bearing on how the document is constructed.

The NT EPA requires the complete EIA document and a draft of the advertisement at least one week prior to advertising the draft documentation, to arrange web upload of the document and review advertising text.

If it is necessary to make use of material that is considered to be of a confidential nature, the Proponent should consult with the NT EPA and the Department of the Environment on the preferred presentation of that material, before submitting it to the Australian Government Minister for approval for publication.

5.5 Public Exhibition

Sufficient copies of the EIA documentation should be provided to and be made available for public exhibition at:

- Northern Territory Library, Parliament House, Darwin
- NT EPA, 2nd Floor, Darwin Plaza, 41 Smith Street Mall, Darwin

- Environment Centre Northern Territory, Unit 3, 98 Woods St, Darwin.

The public exhibition period for the draft EIA document will be a minimum of 20 business days. The exhibition period should not occur in late December or January in any year to ensure optimal opportunity for public and Government viewing of the document. Additional time will be added to the exhibition period if it overlaps any Christmas and January periods.

6 Guidance Notes

6.1 Waste Discharge

Any discharge of waste from the area into groundwater or waterways may require licensing under the NT *Water Act*. Guidance and application forms can be found at: http://www.ntepa.nt.gov.au/waste-pollution/approvals-licences

6.2 Mosquito Breeding

The onshore component of the project should conform to applicable sections of the Medical Entomology guideline 'Guidelines for preventing mosquito breeding associated with construction practice near tidal areas in the NT', to ensure no new mosquito breeding sites are created.

The Gunn Point area is also subject to seasonally high mosquito and biting midge populations, therefore staff should be advised on appropriate measures that can be taken to minimise exposure to biting insect bites.

6.3 Invasive Species

The presence of vessels during construction or operation may pose a risk to introductions of invasive marine species. The environmental risks associated with the potential introduction or translocation of invasive species, including how any vessel involved in the project during the construction or operation stages (including dredging vessels) will meet minimal national standards. Guidance on best practice management biofouling is available at: http://www.marinepests.gov.au/non-trading-vessels.

7 Attachments

7.1 ATTACHMENT 1

THE OBJECTS AND PRINCIPLES OF THE
ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999
SECTIONS 3 AND 3A

3 Objects of the Act

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;
(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;
(c) to promote the conservation of biodiversity;
(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples;
(e) to assist in the co-operative implementation of Australia's international environmental responsibilities;
(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

3A Principles of Ecologically Sustainable Development

The following principles are principles of ecologically sustainable development.

(a) Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
(b) 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.
(c) The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
(d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
(e) Improved valuation, pricing and incentive mechanisms should be promoted.

7.2 ATTACHMENT 2

MATTERS THAT MUST BE ADDRESSED IN A PER AND EIS
(SCHEDULE 4 OF THE EPBC REGULATIONS 2000)

1 General information

1.01 The background of the action including:

(a) the title of the action;

(b) the full name and postal address of the designated Proponent;

(c) a clear outline of the objective of the action;

(d) the location of the action;

(e) the background to the development of the action;

(f) how the action relates to any other actions (of which the Proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;

(g) the current status of the action; and

(h) the consequences of not proceeding with the action.

2 Description

2.01 A description of the action, including:

(a) all the components of the action;

(b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;

(c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;

(d) relevant impacts of the action;

(e) proposed safeguards and mitigation measures to deal with relevant impacts of the action;

(f) any other requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply, to the proposed action;

(g) to the extent reasonably practicable, any feasible alternatives to the action, including:

(i) if relevant, the alternative of taking no action;

(ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action; and

(iii) sufficient detail to make clear why any alternative is preferred to another;

(h) any consultation about the action, including:

(i) any consultation that has already taken place;

(ii) proposed consultation about relevant impacts of the action; and

(iii) if there has been consultation about the proposed action — any documented response to, or result of, the consultation; and

(i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

3 Relevant impacts

3.01 Information given under paragraph 2.01(d) must include

(a) a description of the relevant impacts of the action;

(b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;

(c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;

(d) analysis of the significance of the relevant impacts; and

(e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

4 Proposed safeguards and mitigation measures

4.01 Information given under paragraph 2.01(e) must include:

(a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;

(b) any statutory or policy basis for the mitigation measures;

(c) the cost of the mitigation measures;

(d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;

(e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program; and

(f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation

measures proposed to be taken by State governments, local governments or the Proponent.

5 Other Approvals and Conditions

5.01 Information given under paragraph 2.01(f) must include:

(a) details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:

(i) what environmental assessment of the proposed action has been, or is being carried out under the scheme, plan or policy; and

(ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts;

(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;

(c) a statement identifying any additional approval that is required; and

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6 Environmental record of person proposing to take the action

6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action; and

(b) for an action for which a person has applied for a permit, the person making the application.

6.02 If the person proposing to take the action is a corporation — details of the corporation's environmental policy and planning framework.

7 Information sources

7.01 For information given the PER must state:

(a) the source of the information; and

(b) how recent the information is; and

(c) how the reliability of the information was tested; and

(d) what uncertainties (if any) are in the information.

7.3 ATTACHMENT 3

LIST OF THREATENED SPECIES TO BE CONSIDERED IN THE PUBLIC ENVIRONMENT REPORT

Species	**EPBC Status**
Flatback turtle*, Natator depressus*	Vulnerable, Migratory
Green turtle*, Chelonia mydas*	Vulnerable, Migratory
Hawksbill turtle*, Eretmochelys imbricata*	Vulnerable, Migratory
Olive Ridley turtle, *Lepidochelys olivacea*	Vulnerable, Migratory
Loggerhead turtle*, Caretta caretta*	Endangered, Migratory
Leatherback turtle, *Dermochelys coriacea*	Endangered, Migratory
Speartooth shark, *Glyphis glyphis*	Critically endangered
Northern River shark, *Glyphis garricki*	Endangered
Dwarf sawfish, *Pristis clavata*	Vulnerable
Largetooth sawfish, *Pristis pristis*	Vulnerable
Green sawfish, *Pristis zijsron*	Vulnerable
Whale shark*, Rhincodon typus*	Vulnerable, Migratory
Australian snubfin dolphin, *Orcaella heinsohni*	Migratory
Indo-pacific humpback dolphin, *Sousa chinensis*	Migratory
Bottlenose dolphin, *Tursiops aduncus*	Migratory
Dugong, *Dugong dugon*	Migratory