

# Terms of Reference for an Environmental Impact Statement (EIS)

**Tiwi H2 Project**

Provaris Energy Ltd

Melville Island

April 2023

<b>Proposal :</b>	Tiwi H2 Project: Green Hydrogen Production and Export
<b>Proponent:</b>	Provaris Energy Ltd
<b>NT EPA Reference:</b>	NTEPA2022/0109
<b>Location:</b>	Melville Island, Tiwi Islands, Northern Territory
<b>Local Government Area:</b>	Tiwi Islands Regional Council
<b>Public consultation period:</b>	Draft Terms of Reference – 15 business days

Further information and guidance on the environmental impact assessment process is available on the NT EPA website at: [www.ntepa.nt.gov.au](http://www.ntepa.nt.gov.au)

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# 1. Introduction

## 1.1. Overview

The *Tiwi H2 Project* (the proposal) proposed by Provaris Energy Ltd (Provaris) (the proponent) is being assessed by the Northern Territory Environment Protection Authority (NT EPA) under the *Environment Protection Act 2019* (EP Act) at the level of an Environmental Impact Statement (EIS). The proposal is a 'controlled action' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). An accredited assessment is being conducted by the NT EPA on behalf of the Australian Government.

These Terms of Reference (TOR) set out the matters relating to the environment that are to be addressed in the EIS for this proposal, in accordance with regulations 98(1)(a) and 98(2) of the Environment Protection Regulations 2020 (EP Regulations). The EIS must also address all requirements in the [NT EPA guidance: Preparing an environmental impact statement](#), and Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations).

The proposal is to construct and operate a green hydrogen production and export facility in north-western Melville Island (NT Portion 1644) to facilitate hydrogen export to the Asia-Pacific region from Port Melville. The proposal is located on 2,862 ha of Aboriginal land within a 30 km radius of Port Melville that will comprise 2,672 hectares of previously cleared and modified land, and about 190 hectares of native bushland.

The proposal includes construction of a solar precinct, overhead electricity transmission infrastructure, electrolyser facility, desalination plant, battery storage facilities, hydrogen compression and loading facilities, high pressure pipelines (for hydrogen and water transport), and expanded accommodation facilities at Port Melville. Construction will occur over several years and is likely to be staged, with the construction workforce expected to reach 500 people at peak. The timeframe for commencing construction will depend on reaching agreements with the Traditional Owners and other parties, obtaining environmental approvals and a final investment decision being made.

Hydrogen production and compression facilities will be built at Port Melville where hydrogen will be produced through the electrolysis of purified seawater from Apsley Strait powered by solar energy. Solar energy will be transported to the production and compression facilities via an overhead transmission line from the solar precinct. Brine from the desalination plant that will produce the water required for the hydrogen production process, will be discharged back into the Apsley Strait. Compressed hydrogen will be loaded directly onto ships for export. Shipping movements through the existing Apsley Strait shipping channel are forecasted to peak at 240 per year, depending on hydrogen production and demands.

Further details of the proposal and the notice of decision and statement of reasons for the NT EPA's decision are on the [NT EPA's website](#).

## 1.2. Assessment under accredited assessment process

On 23 November 2022, the delegate of the Commonwealth Minister for the Environment and Water determined that the proposal is a controlled action for matters protected under Part 3 of the EPBC Act (Referral EPBC 2022/09347) and, as such, requires assessment and an approval decision due to the potential for significant impact on:

- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (s20 and s20A)

- The environment of the Commonwealth marine area, or the environment as the proposal would take place in a Commonwealth marine area (s23 and s24A).

The proposal is being assessed by the NT EPA as an accredited assessment process under section 87(4) of the EPBC Act as referenced in section 45 of the EP Act. These TOR have been prepared to meet the requirements of both government jurisdictions.

Information on the EPBC Act and protected matters can be obtained from the Australian Government Department of Climate Change, Energy, the Environment and Water website at [www.environment.gov.au/epbc/](http://www.environment.gov.au/epbc/).

### 1.3. Assessment period

The specified assessment period within which the draft EIS is to be submitted to the NT EPA in line with regulation 99 of the EP Regulations is two years from the date these TOR were issued. In determining this assessment period, the NT EPA has considered the matters listed under EP Regulation 99(3).

## 2. Matters to be addressed in the EIS

### 2.1. Executive Summary of the draft EIS

A summary of the draft EIS is required as part of the EIS documentation. The summary should be written as a stand-alone document, able to be provided on request to interested parties who may not wish to read the full draft EIS.

The summary should provide the following at a minimum:

- a clear and concise overview of the proposal including proponent, proposal lifespan, key components, development stages and activities
- an explanation of the approvals process and function of the EIS
- a summary of the site selection process and alternatives considered
- a summary of design options and alternatives considered
- an overview of the existing environment including climate, location and significance of nearest sensitive receptors
- a summary of the environmental impacts and benefits (proposal-specific, facilitated and cumulative) of the proposal
- a summary of measures to avoid, mitigate and offset (if applicable) potential impacts of the proposal, with a clear and measurable outcomes and commitments for environment protection, as well as measures to enhance benefits
- a summary of closure outcomes and the intended future use of the site
- a summary of stakeholder participation, issues raised and commitments made
- a summary of approval requirements including a description of any licences, permits or consents.

## 2.2. Proposal description

### 2.2.1. Overview

Provide a clear description of the proposal and the full scope of works for which approval is sought. The proposal description should include:

- a summary table listing the key physical components, proposal development stages and estimated hydrogen production capacity
- a description of the proposal footprint (direct) and area of influence (indirect disturbance) and staged proposal activities
- maps, figures, images, diagrams and flow charts
- any variations or modifications to the proposal since the referral information was submitted
- any constraints that may impact approval or implementation
- where there is uncertainty in the detailed design, footprint, capacity or life of the proposal, a clear explanation of the approach to resolving this uncertainty and the maximum extent for each parameter provided.

### 2.2.2. Proponent

Provide background to the proponent including but not limited to:

- information on the environmental history of the proponent including experience in the hydrogen industry
- partnerships with other organisations or industries as part of the proposal
- notification/disclosure of offences, or any non-compliances with state/territory or Commonwealth environmental approval conditions.

### 2.2.3. Objectives of the proposal

State the rationale and justification for the proposal, considering social, economic and other environmental benefits and costs to the NT, in particular to local and regional communities, during the life of the proposal and post closure.

List the key objectives of the proposal and include a description of how the proposal meets these objectives.

Demonstrate how the objects in section 4 of the EP Act can be met, and address the specific requirements of sections 42 (purpose of environmental assessment) and 43 (general duty of proponents) of the EP Act.

Demonstrate the application of the principles of ESD to decision-making processes as set out in Part 2 Division 1 of the EP Act.

### 2.2.4. Statutory framework

The EIS must provide information on the statutory framework including a description of any permits, consents, or other approvals that have been granted/obtained and any that will be required from NT and Australian government authorities related to this proposal e.g. authorisation under the *Petroleum Act 1984*, *Energy Pipelines Act 1981*, *Work Health and Safety (National Uniform Legislation) Act 2011*.

### 2.2.5. Site selection and design

Describe proposal planning and design options considered, reasons for selection of the preferred site and design, and how the selected option avoids and/or mitigates potential impacts and risks to the surrounding environment and its users, delivers benefits to nearby communities and allows for adaptation to a changing climate, e.g. wetter climate, increased storm intensity.

Describe alternatives and options considered specific to selecting Melville Island (Tiwi Islands) as the proposal location, siting the proposal components (solar farm, overhead transmission line and corridor, hydrogen production precinct), selecting solar panel design and array, meeting water and energy demands and disposing of brine and solid wastes. For each alternative location and design option considered, provide:

- the suitability with regard to potential impacts on environmental, social and cultural values
- the suitability with regard to current site climatic conditions (e.g. wind, solar exposure, rainfall) and a changing climate
- the extent and detail of investigations carried to determine the suitability of alternative options
- the reasons for selecting a preferred option.

Describe how potential disruption or damage to existing infrastructure will be avoided and mitigated, especially in the areas where the proposed infrastructure overlaps and is adjacent to existing corridors and facilities, such as Putjamirra road, multi-user Port Melville and Power and Water Corporation’s bores.

Summarise the results of studies/field investigations considered. Discuss the reliability, limitations and uncertainties of the information used in decision-making.

### 2.2.6. Construction and operation

Provide a detailed description of all construction and operation aspects of the proposal as outlined in Table 1.

**Table 1 Minimum information requirements for the proposal description**

Topic	Required information
Site layout maps	<p>The description of the proposal must include the precise location and dimensions of the proposal components clearly identifying the areas of:</p> <ul style="list-style-type: none"> <li>• existing disturbance, infrastructure, roads/tracks, natural and modified landforms</li> <li>• new disturbance and infrastructure, including (where applicable):                             <ul style="list-style-type: none"> <li>○ all areas to be cleared<sup>1</sup> and disturbed</li> <li>○ access and haul roads</li> <li>○ service corridors and firebreaks</li> <li>○ structures to be built or repurposed, such as solar panels, hydrogen production and processing plants, desalination plant, hydrogen and water transport pipelines, hydrogen storage facility, loading berths</li> </ul> </li> </ul>

<sup>1</sup> In accordance with the NT Land Clearing Guidelines.

Topic	Required information
	<ul style="list-style-type: none"> <li>○ civil infrastructure related to storage and/or transfer of seawater, demineralised water, wastewater and electricity transmission</li> <li>○ stormwater drainage</li> <li>○ chemical and waste storage facilities</li> <li>○ shipping channel, swing basin and berth areas</li> <li>○ offshore dredge spoil ground (if relevant)</li> <li>○ marine or subsea pipelines</li> </ul> <ul style="list-style-type: none"> <li>● current land tenure, owner(s) and lease(s) of the land of which the proposal area covers, and any other interests in land such as forestry, minerals and petroleum</li> <li>● sensitive environmental receptors (including social and cultural receptors)</li> <li>● separation distances (buffers) from sensitive receptors and restricted work areas in the proposal area and adjacent areas</li> </ul> <p>Provide a high-quality contemporary aerial view of the proposal area and area of influence to describe current site conditions including existing disturbance.</p>
Construction	<p>Describe all elements and stages of the construction phase including:</p> <ul style="list-style-type: none"> <li>● construction methods and any limitation of these in the area of the proposal. Where alternatives exist, the choice of the preferred option(s) should be clearly explained and a comparison provided against options in terms of potential environmental impacts</li> <li>● equipment and machinery required</li> <li>● construction materials required – major types, quantities, qualities, sources, storage requirements and potential hazards</li> <li>● vegetation clearing and site preparation</li> <li>● location, extent and nature of temporary stockpiles</li> <li>● extent of site preparation and dredging (if relevant)</li> <li>● timeframes</li> <li>● any new ancillary infrastructure and upgrades required to service the proposal, including road access, boat or barge landing, and supply of electricity, water and sewerage</li> <li>● maintenance of proposal components and existing infrastructure</li> <li>● separation distances (buffers) from sensitive receptors and restricted work areas applicable legislation, guidelines, standards and permits</li> <li>● environmental management of all construction aspects including adequacy and likely effectiveness of mitigation measures and controls.</li> </ul>
Operation	<p>Describe all elements and stages of the operation phase including:</p> <ul style="list-style-type: none"> <li>● infrastructure – location, size and type</li> <li>● facility design. Where multiple alternatives exist, the choice of the preferred option(s) should be clearly explained, and a comparison provided against other options in terms of potential environmental impacts.</li> </ul>



## Terms of Reference for an Environmental Impact Statement (EIS)

Topic	Required information
	<ul style="list-style-type: none"> <li>• materials and chemicals required - major types, quantities, qualities, sources, storage requirements and potential hazards</li> <li>• operational method and any limitation of these in the area of the proposal</li> <li>• timeframes</li> <li>• ongoing maintenance and upgrades required to service onshore, nearshore and any offshore infrastructure</li> <li>• separation distances from sensitive receptors and restricted work areas applicable legislation, guidelines, standards and permits</li> <li>• environmental management of all operational aspects including adequacy and likely effectiveness of mitigation measures and controls</li> <li>• incident reporting and emergency response plan.</li> </ul>
Water requirements	<p>Describe all water requirements relevant to each proposal phase. Provide detailed information on demand/volume required, sources, storage and management of water aspects.</p> <p>If groundwater is to be used in the proposal, provide an overall site water balance including inputs and outputs and demonstrate the availability of sustainable groundwater yields to meet water demands.</p> <p>Describe the development stages of the desalination plant and provide the volume of water desalinated relevant to each proposal development stage.</p>
Transport and traffic	<p>Describe land, air and marine traffic and transport activities during construction and operation, including but not limited to:</p> <ul style="list-style-type: none"> <li>• aeroplane, vehicle and vessel movements including type, size, number and frequency of movements to and from Darwin, the Tiwi Islands and the Asia-Pacific region</li> <li>• hours of operation</li> <li>• details on access and haulage routes</li> <li>• details on supplies (e.g. bunkering, water requirements) and waste management (e.g. sewage) during vessel movements to and from Darwin, Port Melville and the Asia-Pacific region</li> <li>• details on management aspects and incident reporting</li> </ul>
Barge or ship loading operations	<p>Describe the barge or ship loading activities, including:</p> <ul style="list-style-type: none"> <li>• infrastructure such as anchorage or mooring location</li> <li>• biosecurity controls</li> <li>• loading method.</li> </ul>
Energy	<p>Provide relevant information with respect to energy during construction and operation, including but not limited to:</p> <ul style="list-style-type: none"> <li>• energy requirements and sources</li> <li>• options for sourcing energy from renewable and non-renewable sources, with a preferred option and justification for the selected option</li> </ul>
Waste	<p>Describe all waste (i.e. type and quantity) that will be generated during the proposal life, including construction and operation phases, on a regular basis.</p>

Topic	Required information
	<p>Classify waste in accordance with <a href="#">NSW Waste Classification Guidelines</a>.</p> <p>Provide demonstrated application of the waste hierarchy.</p> <p>Provide relevant information on the disposal/recycling facility that will be used to manage solid wastes, especially the wastes from the solar energy production facility (such as panels and batteries) and desalination plant (salt enriched organic matter).</p> <p>Outline nominated recycling and/or landfill facilities licensed for the waste type, and whether there is sufficient capacity and indicative agreement from those facilities to accept the waste from the proposal.</p> <p>Provide management methods for controlled (e.g. brine, biocides etc.) and accidental waste discharges (e.g. biocides, fuel, sewage etc.) to the Apsley Strait and marine area selected for product transport.</p>
Pipeline network	<p>Provide a description of pipeline network that will be established for transporting water (bore water, seawater, demineralised water, brine) and hydrogen (compressed and uncompressed) between the proposal components. This must include but not be limited to:</p> <ul style="list-style-type: none"> <li>• purpose and relevant proposal phase</li> <li>• siting location and nearby sensitive environment</li> <li>• dimensions and storage capacity</li> <li>• material types and durability</li> <li>• justification for the selected location and design</li> <li>• timeframes for construction and operation</li> <li>• safety controls and checks including any separation distances from existing or future utilities and/or land uses</li> <li>• schedule of routine inspections and maintenance</li> <li>• contingency and adaptation measures in case of failures and leaks</li> <li>• compliance with relevant Australian (and equivalent international) legislation, codes and standards.</li> </ul>
Hydrogen production, storage and management	<ul style="list-style-type: none"> <li>• Provide a process diagram for hydrogen production and transport identifying all inputs and outputs for each proposal component.</li> <li>• Estimate the maximum and annual quantities of inputs (e.g. energy, water, biocides, coagulants and flocculants etc.) and outputs (e.g. heat, electric and magnetic fields, solid/liquid wastes etc.) to be used or produced over the life of the proposal during the hydrogen production process</li> <li>• Detail environmental management of the whole process (including products and chemicals) to align with best practices and standards including the effectiveness of management methods and potential residual impacts to the environment.</li> <li>• Document applicable legislation, guidelines, standards and permits.</li> </ul> <p>Provide a description of the hydrogen storage facility including but not limited to:</p> <ul style="list-style-type: none"> <li>• location, extent and nearby sensitive environment</li> <li>• dimensions and storage capacity</li> </ul>

Topic	Required information
	<ul style="list-style-type: none"> <li>• material/metal type and durability</li> <li>• hydrogen purity, pressure and density</li> <li>• insulation (as relevant)</li> <li>• safety controls and checks</li> <li>• contingency and adaptation measures in case of failures and leaks</li> <li>• suitability of storage method with regard to hydrogen production volumes, transportation method and distance.</li> </ul>
Workforce	<p>Provide a summary for each phase of the proposal, of the:</p> <ul style="list-style-type: none"> <li>• estimated number of people to be employed</li> <li>• skills base and occupations required</li> <li>• likely sources (local, regional, overseas) and relative numbers of local workforce</li> <li>• on-site facilities provided (including any accommodation for construction and operation).</li> </ul>

### 2.2.7. Rehabilitation and closure

Provide details for the proposed decommissioning, closure and rehabilitation of the proposal, with consideration of section 42 of the EP Act. This section should describe best practices for progressive rehabilitation and closure that restores the proposal area to a safe and stable condition, does not cause environmental harm and can sustain a post-development land use. It should detail:

- the proposed lifespan of the proposal
- biological, cultural, economic and social considerations of options for progressive rehabilitation, decommissioning of infrastructure, removal and disposal of infrastructure at the end of the proposal's life, and final closure
- revegetation to original state and blending of disturbed surfaces into surrounding vegetation and topography. Where the area cannot be rehabilitated to a natural and/or a stable condition, state the reasons and the proposed methodology to achieve the best outcomes
- previous and current land use, and proposed land use after closure including alternatives defined by the outcomes of consultations undertaken with key stakeholders
- any legacy benefits of the proposal to the community such as renewable power and water supply (e.g. desalination plant)
- final site design identifying the locations of post-development land use and the areas where rehabilitation is not proposed (if applicable)
- rehabilitation objectives and outcomes to be met
- rehabilitation and closure actions including time-based milestones consistent with SMART<sup>2</sup> principles
- performance indicators and reporting schedule

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<sup>2</sup> SMART milestones are: specific, measurable, achievable, reasonable/relevant, time-specific.

- environmental constraints to achieving rehabilitation objectives and milestones.

### 2.2.8. Changes or amendments to proposal

Describe any changes, amendments or refinements to the proposal since submission of the referral, noting that the NT EPA must be formally notified of any significant variations under section 51 of the EP Act.

## 2.3. Stakeholder engagement and consultation

Proponents have a general duty under section 43 of the EP Act to provide communities that may be affected by a proposal with an opportunity for consultation to assist community understanding of the proposed action and its potential impacts and benefits.

The proponent must engage and consult with stakeholders<sup>3</sup> who are affected by and interested in the proposal. The proponent must document the following in the EIS:

- identified stakeholders  
(not limited to Munupi Clan, Pirlangimpi community, Tiwi Aboriginal Land Trust, Tiwi Land Council, Tiwi Islands Regional Council, Tiwi Plantation Corporation, Darwin Port, NT Port and Marine, Regional Harbourmaster, Australian Maritime Safety Authority, Power and Water Corporation, Northern Prawn Fishing Industry Association, Environment Centre NT, Department of Climate Change, Energy, the Environment and Water (DCCEEW), Department of Industry, Science and Resources, Northern Territory Government authorities)
- community and stakeholder consultation undertaken to date and the outcomes, including decision-making on the proposal and any adjustments to the proposal as a result of consultation
- how information will be disseminated and extended to stakeholders in a form that will help stakeholders and the public understand the proposal and actions within its scope, potential impacts and benefits, and how stakeholders can provide input
- how input from public participation will be incorporated into or inform scoping of studies and the proposal more broadly
- any future plans and commitments for ongoing consultation.

Describe the approach to stakeholder engagement and consultation throughout the environmental impact assessment process consistent with the NT EPA's guidance for proponents: [Stakeholder Engagement and Consultation](#). The proponent is encouraged to refer to best-practice guidance on social and economic impact assessment, including but not limited to:

- [Commonwealth Interim Engaging with First Nations People and Communities on Assessments and Approvals under the EPBC Act](#) (2023)
- [NSW Social Impact Assessment Guideline](#) (2021)
- [QLD Social Impact Assessment Guideline](#) (2018)
- [QLD Economic Impact Assessment Guideline](#) (2017)

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<sup>3</sup> As defined in the NT EPA Guidance for Proponents - Stakeholder engagement and consultation (NT EPA 2021)

### 2.3.1. Aboriginal people

The proponent must recognise the role and interests of Indigenous people, promote the conservation and ecologically sustainable use of natural resources, and seek to:

- engage with Aboriginal people in a culturally appropriate manner
- obtain the views of directly affected Aboriginal people on the social, cultural, economic and ecological values of the proposal area
- promote the cooperative use of Aboriginal knowledge of biodiversity and Aboriginal heritage in environmental decision-making processes
- where it is appropriate, treat the views of Aboriginal people as the primary source of information on the value of Aboriginal cultural heritage
- protect the rights and interests of Aboriginal people in relation to the areas that may be impacted.

## 2.4. Information requirements for environmental factors

The NT EPA identified six environmental factors in its referral decision that have the potential to be significantly impacted by implementing the proposal (Table 2), identified from the NT EPA’s *Environmental factors and objectives - Environmental impact assessment guidance*.

One additional environmental factor relevant to the proposal was identified that may also be significantly impacted. This factor was included due to the addition of controlling provisions under the EPBC Act in the NT EPA’s assessment.

Table 2 Preliminary environmental factors that must be addressed in the draft EIS

THEME	FACTOR	ENVIRONMENTAL OBJECTIVE
Land	Terrestrial ecosystems	Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.
Water	Inland water environmental quality	Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.
Sea	Marine environmental quality	Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.
	Marine ecosystems	Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.
Air	Atmospheric processes	Minimise greenhouse gas emissions so as to contribute to the NT Government’s target of achieving net zero greenhouse gas emissions by 2050.
People	Community and economy	Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.
	Human health	Protect the health of the Northern Territory population.

For each of the factors listed in Table 2, the draft EIS should consider the significance of the identified potential impacts with reference to section 11 of the EP Act and [Significant Impact Guidelines](#) for protected matters under the EPBC Act. The EIS should identify and consider the proposal footprint (direct disturbance) and area of influence (indirect disturbance), and cumulative disturbance in consideration of other known or proposed activities in the region, to identify the environmental aspects (under each environmental factor) and their specific values that could be impacted by the proposal. Where relevant, the assessment of potential environmental impacts must consider unusual operations, unplanned and emergency shutdowns of part or all of the operations.

The draft EIS is to provide an assessment of how the NT EPA's environmental objective for each factor would be met, as outlined in the NT EPA's *Preparing an environmental impact statement – environmental impact assessment guidance for proponents* and detailed in following sections.

If additional potential environmental impacts are identified through the environmental impact assessment process, they must also be included in the draft EIS, even if this requires addressing additional environmental factors not specified in Table 2.

The following sections and tables outline the information to be addressed for each environmental factor. The below information requirements should be addressed in an appropriate format within the draft EIS, with technical assessment reports appended to the EIS as applicable. Detailed maps and figures must be included to support the descriptions and findings for each of the relevant environmental factors.

### 2.4.1. Terrestrial ecosystems

Table 3 Minimum information required for the assessment of Terrestrial ecosystems

Aspect	Specific information required
<b>NT EPA objective: Protect the NT's flora and fauna so that environmental values including biological diversity and ecological integrity are maintained.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>• Clearing of vegetation and/or modification of surface water hydrology to accommodate the proposal infrastructure, including the development of the transmission corridor and hydrogen production precinct in proximity to sensitive vegetation</li> <li>• Use of groundwater for construction water supply</li> <li>• Use of plant and equipment during construction and operations</li> <li>• Installation of overhead transmission lines</li> <li>• Increased land traffic</li> <li>• Explosion, fire and unplanned incidents</li> </ul>
Environmental values	<p>The Tiwi Islands hold an important value for biodiversity conservation. The islands are home to many threatened and endemic species, and are a refuge from some threatening processes that have caused wildlife decline on the mainland.</p> <p>Provide a description of all terrestrial ecological values present or likely to be present within the proposal footprint and area of influence, along with any existing threatening processes.</p> <p>Describe habitat conditions, vegetation communities (NVIS level 4 or higher) including sensitive vegetation (groundwater dependent ecosystems, riparian vegetation), resident flora and fauna species and their importance in local and regional settings.</p> <p>Describe and assess known, likely and potential presence of threatened species</p>

Aspect	Specific information required
	<p>protected under the EPBC Act and <i>Territory Parks and Wildlife Conservation Act 1976</i> (TPWC Act) in or near the proposal area, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Pale field-rat (<i>Rattus tunneyi</i>)</li> <li>• Black-footed tree-rat (<i>Mesembriomys gouldii gouldii</i>)</li> <li>• Fawn antechinus (<i>Antechinus bellus</i>)</li> <li>• Brush-tailed rabbit-rat (<i>Conilurus penicillatus</i>)</li> <li>• Butler’s dunnart (<i>Sminthopsis butleri</i>)</li> <li>• Northern brush-tailed phascogale (<i>Phascogale pirata</i>)</li> <li>• Red goshawk (<i>Erythrotriorchis radiatus</i>)</li> <li>• Tiwi masked owl (<i>Tyto novaehollandiae melvillensis</i>)</li> <li>• Partridge pigeon (eastern) (<i>Geophaps smithii smithii</i>)</li> <li>• <i>Cycas armstrongii</i><sup>4</sup></li> <li>• <i>Typhonium jonesii</i></li> <li>• <i>Typhonium mirabile</i></li> <li>• Monsoon, riparian and spring-fed rainforest species, including <i>Mitrella tiwiensis</i>, <i>Tarennoidea wallichii</i>, <i>Calochilus caeruleus</i>, <i>Dendromyza reinwardtiana</i>, <i>Hoya australis subsp oramicola</i>, <i>Luisia corrugate</i> and <i>Thrixspermum congestum</i>.</li> </ul> <p>For any species with a likelihood of occurrence that is moderate or above, provide further robust impact assessment consistent with the <a href="#">Significant Impact Guidelines 1.1</a>.</p> <p>Targeted surveys may be required for threatened species where there is insufficient information to inform a significant impact assessment. Information on the recommended survey design and methodology can be provided by the Flora and Fauna Division of DEPWS and/or Australian and NT Survey Guidelines.</p>
<p>Potential impacts and risks</p>	<p>Identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on terrestrial ecosystems and identified environmental values including:</p> <ul style="list-style-type: none"> <li>• loss of flora/ecological communities from vegetation clearing, ongoing maintenance (e.g. fire and vegetation management) and water availability/quality, including loss of significant/sensitive vegetation<sup>5</sup> and potential habitats for threatened species listed under TPWC Act and EPBC Act or fauna species that are locally sensitive to impacts. Provide an overview of the extent (ha) of the loss in table and map format</li> <li>• impacts to groundwater dependent ecosystems and species (e.g., spring-fed rainforest, wetlands, deep-rooted vegetation) from drawdown of the water table</li> <li>• impacts to threatened or sensitive flora species and populations due to changes to hydrology and drainage, reduced habitat availability or quality, or fragmentation and edge effects</li> </ul>

<sup>4</sup> Identify areas that support high density stands of *C. armstrongii* (>400 stems per hectare). If high density stands are identified, the EIS needs to quantify the impacts and provide an assessment of the importance of those stands from a local and regional context.

<sup>5</sup> Refer to NT Land Clearing Guidelines (DENR 2019).

Aspect	Specific information required
	<ul style="list-style-type: none"> <li>• impacts to threatened or sensitive fauna (including behaviours) from the infrastructure (such as the solar farm, overhead transmission lines, operating plant), vehicles and equipment</li> <li>• disturbance or degradation of vegetation communities, possibly resulting in a long-term decline or loss over time, for example from erosion, dust, weeds/pathogens, pests, disturbance of acid sulfate soils, changes in bushfire risk (fire frequency and intensity) etc.</li> <li>• impacts to threatened or sensitive fauna and fauna habitat due to changes to water quality and availability, reduced habitat availability, or fragmentation and edge effects</li> <li>• Determine the areas that could feasibly experience those impacts.</li> </ul> <p>Using appropriate studies, investigations and relevant information, quantify the extent of impacts and their significance at the proposal level and in regional settings. For any surveys undertaken, present results in the draft EIS including survey effort and absence records.</p>
<p>Avoidance, mitigation and management</p>	<p>Outline the measures for avoiding, mitigating, or offsetting impacts identified above, with consideration of sections 26 (Environmental decision-making hierarchy) and section 27 (Waste management hierarchy) of the EP Act. Consider measures to enhance or restore environmental quality.</p> <p>These measures should address at a minimum:</p> <ul style="list-style-type: none"> <li>• proposal design and layout</li> <li>• native vegetation clearing</li> <li>• modelled changes to hydrological regimes</li> <li>• buffer distances</li> <li>• fauna management</li> <li>• pest/weed/pathogen control and management</li> <li>• sustainable water extraction</li> <li>• dust management</li> <li>• noise and vibration management</li> <li>• acid sulfate soils and erosion/sedimentation</li> <li>• practicality and feasibility of proposed measures.</li> </ul> <p>Outline the key management plans that would be implemented, and the associated performance indicators, timeframes for implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice, including advice from relevant Government authorities and species experts.</p> <p>The EIS should demonstrate that the proposal has been appropriately sited and has taken into consideration the minimum requirements outlined in the NT Land Clearing Guidelines.</p> <p>Provide a comprehensive and effective quarantine plan that will ensure no introduction of the cane toad to the Melville Island. The plan must include details of monitoring and assurance measures to evaluate the success of the measures (including contingency measures) and to detect and manage failures or breaches.</p> <p>Assess the potential impacts of a changing climate to terrestrial ecosystems in the</p>



Aspect	Specific information required
	context of cumulative impacts from the proposal and other activities in the region.
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to terrestrial ecological values, and mitigation and management measures. Describe clear and measurable indicators, outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the proposal will be acceptable. Specify timeframes for monitoring and reporting.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	Identify any potential residual impact or risk of the proposal to identified values and the level of certainty underpinning the predicted residual impacts.
Offsets	Where a significant residual impact may remain after applying the environmental decision-making hierarchy, identify offsets and describe how any proposed offset is consistent with the <a href="#">NT Offsets Framework</a> and <a href="#">EPBC Act environmental offsets policy</a> .

## 2.4.2. Inland water environmental quality

Table 4 Minimum information required for the assessment of Inland water environmental quality

Aspect	Specific information required
<b>NT EPA objective: Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>• Ground disturbance activities within the proposal footprint generating sediments, dust, reject material and waste</li> <li>• Hazardous substances use, storage and transport</li> <li>• Operational activities generating dust, reject material and waste</li> <li>• Onsite sewage treatment system to treat additional sewage and greywater from the expanded accommodation facilities at the hydrogen export precinct</li> <li>• Controlled fire</li> <li>• Temporary use of Port bores during initial construction phase (prior to the desalination plant being commissioned).</li> </ul>
Environmental values	<p>Describe the following for the proposal footprint and the area of influence:</p> <ul style="list-style-type: none"> <li>• climate and meteorological conditions in the proposal area, the frequency and severity of extreme weather conditions, such as storms and cyclones</li> <li>• extent and value of surface water and groundwater systems</li> <li>• water quality (chemical, physical and biological) of surface water and groundwater systems, substantiated by the relevant water studies, incorporating appropriate representative monitoring sites and water quality indicators</li> <li>• declared beneficial uses and water quality objectives</li> <li>• current and potential water use.</li> </ul> <p>Provide detailed maps to support the above descriptions. Outline studies used in</p>

Aspect	Specific information required
<p>Potential impacts and risks</p>	<p>the assessment, including their results, limitations and uncertainties.</p> <p>Identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on inland water environmental quality including:</p> <ul style="list-style-type: none"> <li>• changes to surface water quality (such as to Blue Water Creek) from accelerated soil erosion and sediment runoff and accidental spills of materials and chemicals</li> <li>• contamination of groundwater (including drinking water supply for the Pirlangimpi community) and connected surface water via infiltration or seepage of hazardous materials and/or effluent, and intrusion of seawater (i.e. movement of freshwater/seawater interface)</li> </ul> <p>Determine the proposal footprint and area of influence that could feasibly experience those impacts.</p> <p>Provide an assessment of potential impacts and risks to inland water environmental quality considering outcomes of investigations and other relevant information. As a minimum, the assessment should take into consideration:</p> <ul style="list-style-type: none"> <li>• spatial, temporal and seasonal trends</li> <li>• physical, chemical and biological characteristics of potential pollutants/contaminants including a quantitative assessment of treated wastewater and sludge likely to be produced</li> <li>• current stressors and cumulative impacts with other proposals or activities.</li> <li>• the reversibility of potential impacts.</li> </ul> <p>The assessment must take into account all construction and operation activities of the proposal and quantify the significance of impacts and risks against :</p> <ul style="list-style-type: none"> <li>• site specific water quality data and any relevant guideline thresholds including ANZECC &amp; ARMCANZ 2018.</li> <li>• declared beneficial uses, water quality objectives and identified environmental values.</li> </ul> <p>Assess the potential impacts of a changing climate to inland water environmental quality in the context of cumulative impacts from the proposal and other activities in the region.</p>
<p>Avoidance, mitigation and management</p>	<p>Outline the measures for avoiding, mitigating, or offsetting impacts identified above, with consideration of sections 26 (Environmental decision making hierarchy) and section 27 (Waste management hierarchy) of the EP Act. Consider measures to enhance or restore environmental quality.</p> <p>These should address at a minimum:</p> <ul style="list-style-type: none"> <li>• proposal design and layout</li> <li>• alternative water supply options for the construction phase</li> <li>• erosion, sediment and drainage controls</li> <li>• material transport and handling plan</li> <li>• water management, including stormwater and wastewater management</li> <li>• chemicals and fuel spill management</li> <li>• buffer distances</li> <li>• environmental management requirements associated with seasonal weather and extreme weather conditions such as floods and cyclones with a 1%, 5%, 10% and 20% annual exceedance probability.</li> <li>• waste management including a detailed description of management methods for</li> </ul>

Aspect	Specific information required
	<p>all types of wastes</p> <ul style="list-style-type: none"> <li>compliance with any legislation, standards and policies relevant to the proposed measures.</li> </ul> <p>Outline the key management plans that would be implemented, and the associated performance indicators, timeframes for implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks, mitigation and management measures. Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	Identify any potential residual impact or risk of the proposal to identified values.
Offsets	Where a significant residual impact may remain after applying the environmental decision-making hierarchy, identify offsets and describe how any proposed offset is consistent with the <a href="#">NT Offsets Framework</a> and <a href="#">EPBC Act environmental offsets policy</a> .

### 2.4.3. Marine environmental quality

Table 5 Minimum information required for the assessment of Marine environmental quality

Aspect	Specific information required
<b>NT EPA objective: Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>Construction of infrastructure onshore, nearshore and offshore to facilitate hydrogen shipping operation</li> <li>Operation of marine infrastructure and use of plant and equipment</li> <li>Vessels movement to and from Darwin, Port Melville and Asia-Pacific region</li> <li>Discharge of brine to the Apsley Strait</li> <li>Potential discharge of desalination water treatment chemicals, such as biocides, coagulants and flocculants, anti-corrosion additives etc.</li> <li>Storage of compressed hydrogen into berthed ships</li> <li>Potential disposal of wastewater (i.e., sewage and greywater) from an upgraded onsite treatment system</li> </ul>
Environmental values	<p>Provide a broad assessment of the marine environment in the proposal area and area of influence, with regard to water quality (chemical, physical and biological) and sediment characteristics, and in consideration of:</p> <ul style="list-style-type: none"> <li>water quality objectives and declared beneficial uses</li> </ul>

Aspect	Specific information required
	<ul style="list-style-type: none"> <li>• seasonal and temporal variations</li> <li>• current surface water discharges into Apsley Strait</li> </ul> <p>Provide results and interpretation of any marine investigations undertaken in the proposal area, with justification of the suitability of the methodologies.</p>
<p>Potential impacts and risks</p>	<p>Identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on marine environmental quality and identified environmental values including:</p> <ul style="list-style-type: none"> <li>• installation of marine infrastructure causing increased sedimentation and light attenuation in the water column, negatively impacting on water quality and marine environments</li> <li>• increased nutrient and other contaminants of concern at any wastewater discharge locations</li> <li>• increased salinity at the desalination plant brine outlet</li> <li>• potential seepage runoff from untreated/unidentified acid sulfate soils</li> <li>• spills of hazardous materials and chemicals from loading infrastructure or in the event of a shipping incident</li> <li>• potential site runoff, with impacts on water quality</li> <li>• temporary impacts to fishing (commercial, recreational, charter)</li> <li>• potential impacts to water quality and sediments from on-board shipping wastes, such as sewage, food refuse, oils and chemicals, plastics etc.</li> </ul> <p>Determine the proposal footprint and area of influence that could feasibly experience those impacts. For brine discharges, include updated digital elevation modelling to a finer scale (1m cell size within the zone of impact) and salinity dispersion modelling, across the zone of influence.</p> <p>The assessment must consider outcomes of investigations and other relevant information, and as a minimum, the assessment should take into consideration:</p> <ul style="list-style-type: none"> <li>• methods, equipment, timing and frequency of proposal activities</li> <li>• the likely scale of disturbance</li> <li>• water management, including stormwater and wastewater management</li> <li>• erosion and sedimentation</li> <li>• cumulative impacts with other activities, industries or proposals in or near the proposal area</li> <li>• reversibility of impacts.</li> </ul> <p>Quantify the significance of identified potential impacts and risks to marine environmental quality in consideration of:</p> <ul style="list-style-type: none"> <li>• relevant guideline thresholds</li> <li>• the beneficial uses, water quality objectives and identified environmental values</li> <li>• direct disturbance to the intertidal zone and potential for disturbance to marine values</li> </ul> <p>Provide the results and interpretation of any investigations undertaken in the area of</p>

Aspect	Specific information required
	<p>influence, with the justification of the suitability of the methodologies.</p> <p>Provide final design and site layout for the desalination plant including location(s) for the water inlet/outlet points and pipeline network. The final design must be developed using site-specific water quality data and related environmental conditions, and must be endorsed by an independent qualified person.</p>
<p>Avoidance, mitigation and management</p>	<p>Outline the measures for avoiding, mitigating, or offsetting impacts identified above, with consideration of sections 26 (Environmental decision making hierarchy) and section 27 (Waste management hierarchy) of the EP Act. Consider measures to enhance or restore environmental quality.</p> <p>These should address at a minimum:</p> <ul style="list-style-type: none"> <li>• site selection and design for marine infrastructure, including water inlet and outlet for desalination plant, discharge outlet for wastewater</li> <li>• construction/installation methods</li> <li>• erosion and sediment control</li> <li>• marine water quality management</li> <li>• waste management</li> <li>• marine pest control</li> <li>• dangerous goods management</li> <li>• acid sulfate soil management (if present)</li> <li>• dredging and dredge material management plan (if relevant)</li> <li>• chemicals and fuel spill management</li> <li>• controlled discharge (brine and wastewater) including triggers, location of discharge point/s, volume and schedule for discharges<sup>6</sup></li> <li>• marine safety and navigation</li> <li>• vessel transport management</li> <li>• buffer distances</li> <li>• compliance with any legislation, standards and policies relevant to the proposed measures.</li> </ul> <p>Outline the key management plans that would be implemented, and the associated performance indicators, timeframes for implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice, including advice from relevant NT Government authorities.</p> <p>Assess the potential impacts of a changing climate to marine environmental quality in the context of cumulative impacts from the proposal and other activities in the region.</p>
<p>Monitoring and reporting</p>	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to marine environmental quality, and mitigation and management measures. Describe clear and measurable outcomes and commitments that will</p>

<sup>6</sup> Require a Waste Discharge License under the Water Act 1992

Aspect	Specific information required
	<p>ensure the environmental objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	Identify any potential residual impact or risk of the proposal to identified values.
Offsets	Where a significant residual impact may remain after applying the environmental decision-making hierarchy, identify offsets and describe how any proposed offset is consistent with the <a href="#">NT Offsets Framework</a> and <a href="#">EPBC Act environmental offsets policy</a> .

#### 2.4.4. Marine ecosystems

Table 6 Minimum information required for the assessment of Marine ecosystems

Aspect	Specific information required
<b>NT EPA objective: Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>• Construction and operation of marine infrastructure (e.g. navigation lights, desalination plant) and vessels within the proposal footprint onshore, nearshore and offshore</li> <li>• Vessel movement to and from Darwin, Port Melville and Asia-Pacific region</li> <li>• Discharge of brine into Apsley Strait</li> <li>• Potential discharge of desalination water treatment chemicals, such as biocides, coagulants and flocculants, anti-corrosion additives etc. Construction of water intakes and outfalls to serve desalination plant</li> <li>• Storage of compressed hydrogen into berthed ships</li> </ul>
Environmental values	<p>Provide a broad assessment of the marine environment in the proposal area and area of influence with regard to marine ecosystems, mapping the known and potential extents and condition of, at a minimum:</p> <ul style="list-style-type: none"> <li>• benthic communities (epibenthic, infauna, mangrove and salt flat habitats)</li> <li>• threatened and migratory species</li> <li>• habitats for species of cultural, social or commercial importance</li> <li>• marine parks and known offsets areas declared under the Commonwealth and Northern Territory legislation.</li> </ul> <p>Describe the existing health/condition/amenity of marine ecosystems in the proposal area and area of influence, with reference to threatening processes (e.g. pest species, habitat degradation), sedimentation and currently implemented management measures (by NT Port and Marine).</p> <p>Describe all listed or threatened marine species known or likely to occur in the proposal area and area of influence (including NT waters and the Commonwealth Marine Area), with information on the habitats they rely on, threatening processes,</p>

Aspect	Specific information required
	<p>and estimates of population size and distribution, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>• Dwarf Sawfish (<i>Pristis clavata</i>)</li> <li>• Green Sawfish (<i>Pristis zijsron</i>)</li> <li>• Dugong (<i>Dugong dugon</i>)</li> <li>• Humpback Whale (<i>Megaptera novaeangliae</i>)</li> <li>• Australian Snubfin Dolphin (<i>Orcaella heinsohni</i>)</li> <li>• Speartooth Shark (<i>Glyphis glyphis</i>)</li> <li>• Northern River Shark (<i>Glyphis garricki</i>)</li> <li>• Freshwater Sawfish (<i>Pristis pristis</i>)</li> <li>• Olive Ridley Turtle (<i>Lepidochelys olivacea</i>)</li> <li>• Flatback Turtle (<i>Natator depressus</i>)</li> <li>• Green Turtle (<i>Chelonia mydas</i>)</li> </ul> <p>For any species with a likelihood of occurrence moderate or above, provide further robust impact assessment consistent with the Significant Impact Guidelines 1.1.</p> <p>Assess the importance of the identified marine ecosystems and threatened species in a regional, national and international context.</p> <p>Provide the results and interpretation of any marine investigations undertaken in the area of influence, with justification of the suitability of the methodologies and surveys to characterize marine values. Discuss any information gaps or uncertainties including any further studies or measures required to address these gaps.</p>
<p>Potential impacts and risks</p>	<p>Identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on marine ecosystems and identified environmental values including:</p> <ul style="list-style-type: none"> <li>• disturbance of benthic communities and habitats from mooring locations, vessel movement, product loading and unloading and brine discharge</li> <li>• impacts to marine species larvae and juveniles from seawater intake</li> <li>• impacts to fauna habitat (feeding, nursery, benthic, pelagic etc.) due to changes to the marine environment and introduction or spread of contaminants or marine pest species</li> <li>• impacts to nursery habitats of Dwarf Sawfish and Green Sawfish from brine discharge into Apsley Strait</li> <li>• impacts to fauna as a result of collision with vessels and/or marine construction equipment</li> <li>• changes to marine fauna behaviours and breeding cycle (e.g. marine turtle species, dugong, cetaceans) as a result of noise, vibration or lighting</li> <li>• impacts to fish including those that are targeted for recreational, commercial and/or cultural uses</li> <li>• potential impacts to marine biota from on-board shipping wastes, such as sewage, food refuse, oils and chemicals, plastics etc.</li> </ul> <p>Determine the proposal footprint and area of influence that could feasibly experience those impacts.</p> <p>The assessment must consider outcomes of investigations and other relevant information, and as a minimum, the assessment should take into consideration:</p> <ul style="list-style-type: none"> <li>• marine and nearshore infrastructure design and layout</li> </ul>

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Aspect	Specific information required
	<ul style="list-style-type: none"> <li>• methods, equipment, timing and frequency of proposal activities</li> <li>• the likely scale, and extent of disturbance</li> <li>• cumulative impacts with other industries, activities or proposals within the marine environment of Apsley Strait and the Tiwi Islands more broadly</li> <li>• environmental management requirements associated with seasonal weather and extreme weather conditions such as floods and cyclones with a 1%, 5%, 10% and 20% annual exceedance probability.</li> <li>• reversibility of impacts (including timeframe).</li> </ul> <p>Quantify the significance of identified potential impacts and risks to the marine ecosystem in consideration of:</p> <ul style="list-style-type: none"> <li>• relevant guideline thresholds</li> <li>• identified environmental values.</li> </ul>
Avoidance, mitigation and management	<p>Outline the measures for avoiding, mitigating, or offsetting impacts identified above, with consideration of sections 26 (Environmental decision-making hierarchy) and section 27 (Waste management hierarchy) of the EP Act. Consider measures to enhance or restore environmental quality.</p> <p>These should address at a minimum:</p> <ul style="list-style-type: none"> <li>• facility design and layout</li> <li>• construction/installation and management methods, such as: <ul style="list-style-type: none"> <li>○ erosion and sediment control</li> <li>○ brine disposal and management</li> <li>○ seawater intake management</li> <li>○ potential acid sulfate soil management</li> <li>○ marine water and sediment management</li> <li>○ biosecurity management</li> <li>○ dangerous goods management</li> <li>○ noise and vibration management</li> <li>○ marine safety and navigation, including management of vessels transport and navigation lights</li> <li>○ buffer distances</li> <li>○ compliance with any legislation, standards and policies relevant to the proposed measures.</li> </ul> </li> </ul> <p>Outline the key management plans that would be implemented, and the associated performance indicators, timeframes for implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice, including advice from relevant Government authorities and marine species experts.</p> <p>Demonstrate that the relevant guidelines/advisory documents referenced in section 3.1 have been considered to avoid any detrimental impacts on marine animals (fishes and turtles).</p> <p>Assess the potential impacts of a changing climate to marine ecosystems in the context of cumulative impacts from the proposal and other activities in the region.</p>
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to marine ecosystem, and mitigation and management measures. Describe clear and measurable outcomes and commitments that will ensure the environmental</p>



Aspect	Specific information required
	<p>objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	Identify any potential residual impact or risk of the proposal to identified values.
Offsets	Where a significant residual impact may remain after applying the environmental decision-making hierarchy, identify offsets and describe how any proposed offset is consistent with the <a href="#">NT Offsets Framework</a> and <a href="#">EPBC Act environmental offsets policy</a> .

### 2.4.5. Atmospheric processes

Table 7 Minimum information required for the assessment of atmospheric processes

Aspect	Specific information required
<b>NT EPA objective: Minimise greenhouse gas emissions so as to contribute to the NT Government's goal of achieving net zero greenhouse gas emissions by 2050.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>Land clearing</li> <li>Fuel combustion for the operation of heavy machinery, vehicles, marine vessels and diesel generator sets, especially during construction stage</li> <li>Hydrogen production, storage and transportation</li> </ul>
Environmental values	<ul style="list-style-type: none"> <li>Describe the current emissions profile for the NT by industry/sector.</li> <li>Describe greenhouse gas emissions trajectories for the NT by industry/sector.</li> <li>Describe sensitive receptors within and in proximity to the proposal area that may be affected by the projected impacts of a changing climate. Provide maps to support the description as appropriate.</li> </ul>
Potential impacts and risks	<ul style="list-style-type: none"> <li>Estimate the proposal's annual and total Scope 1 and Scope 2 emissions over the life of the proposal (e.g., emissions from land clearing, diesel exhaust/etc. during construction and operation, and indirect emissions from hydrogen leaks) and how these emissions will contribute to the NT emissions profile.</li> <li>Estimate the annual and total Scope 3 emissions over the life of the proposal.</li> <li>Provide a breakdown of Scope 1, 2 and 3 emissions according to the emission sources and source locations (i.e. within the NT, elsewhere in Australia or outside of Australia)</li> <li>Estimate the annual and total fugitive hydrogen<sup>7</sup> emissions over the life of the proposal</li> <li>Provide details on the projected emissions intensity (emissions per unit of production) and benchmarking against other comparable projects, industry standards and best practice.</li> <li>Describe the proposal's contribution to the supply of renewable energy and meeting NT renewable energy targets.</li> </ul> <p>Provide an inventory of projected annual emissions for each relevant greenhouse</p>

<sup>7</sup> an indirect greenhouse gas with a global warming potential of 5.8 over 100 years (Derwent et al. 2006)

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Aspect	Specific information required
	<p>gas, with total emissions expressed in 'CO<sub>2</sub> tonnes equivalent' terms. Provide justification for the suitability of methodologies or surveys used to calculate greenhouse gas emissions. Where any information gaps or uncertainty remains, adopt the precautionary principle.</p>
Avoidance, mitigation and management	<p>Outline the measures for avoiding, mitigating or offsetting projected Scope 1 and Scope 2 emissions, with consideration of sections 26 (Environmental decision-making hierarchy) and section 27 (Waste management hierarchy) of the EP Act.</p> <p>Include a description of:</p> <ul style="list-style-type: none"> <li>• any energy efficiency and mitigation and management measures to reduce or minimise greenhouse gas emissions over the life of the proposal including a commitment to continuous improvement measures.</li> <li>• how proposed measures to maximise energy efficiency and avoid and/or reduce/abate greenhouse gas emissions are consistent with the proposal's meaningful contribution to NT Government's target of achieving net zero greenhouse gas emissions by 2050.</li> <li>• best practice management measures to detect and manage hydrogen leaks.</li> </ul> <p>Demonstrate that proposed mitigation measures are in accordance with best-practice and capable of achieving stated emissions reductions, including identification of any local conditions or circumstances that might influence the choice of technologies or measures to mitigate emissions.</p> <p>Outline the key management plan/s that would be implemented, and the associated performance indicators (minimum five-year targets), timeframes for implementation, and the roles and responsibilities of the personnel involved.</p>
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to atmospheric processes, and mitigation and management measures. Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	<p>Identify any potential residual impact or risk of the proposal to the emissions profile and emissions trajectory for the NT.</p>
Offsets	<p>Where a significant residual impact may remain after applying the environmental decision-making hierarchy, identify offsets and describe how any proposed offset is consistent with the <a href="#">NT Offsets Framework</a> and <a href="#">EPBC Act environmental offsets policy</a>.</p>

## 2.4.6. Community and economy

Table 8 Minimum information required for the assessment of community and economy

Aspect	Specific information required
<b>NT EPA objective: Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>• Construction and operational activities</li> <li>• Siting of proposal infrastructure (including within Pirlangimpi borefield)</li> <li>• Proposal area location and interaction with other developments, labour forces and local personnel</li> <li>• Employment and procurement</li> </ul>
Social, economic, and cultural values	<p>Describe the existing social, cultural and economic profile of the proposal footprint and area of influence, with consideration to:</p> <ul style="list-style-type: none"> <li>• key landowners/custodians/stakeholders/communities, and other persons with overlapping or intersecting interests</li> <li>• social, cultural (including sacred and heritage sites) and economic values of affected stakeholders</li> <li>• social area of influence, including demographic characteristics and trends, governance and institutions</li> <li>• the local and regional labour market, including participation, skills gaps, Aboriginal employment</li> <li>• local and regional businesses capacity, economic sectors and livelihoods</li> <li>• level of disadvantage against relevant indicators</li> <li>• current land and sea uses, including recreational</li> <li>• workers and tourists mobility and demands for services</li> <li>• social infrastructure and service delivery such as schools, education, policing, childcare, transport, housing, short-term accommodation</li> <li>• other infrastructure and services, such as utilities, fuel, water, telecommunications</li> <li>• relevant contextual factors, such as history of other projects and studies, community values and aspirations, government policies and legislation</li> </ul>
Potential impacts and risks	<p>Identify, describe and assess potential direct and indirect impacts (including benefits) and risks of implementing the proposal, and cumulative impacts, on community and cultural values, and the economy including:</p> <ul style="list-style-type: none"> <li>• net positive benefits, particularly to local communities associated with the proposed construction and operational activities</li> <li>• changes to population (local and NT), businesses and employment market, and indirect impacts to housing market, community and social services (including Port Melville), infrastructure and economy</li> <li>• social integration of non-local workforce</li> <li>• risks and opportunities for existing jobs, economic sectors and livelihoods</li> <li>• equitable distribution of economic benefits and harms (intra- and inter-generational) within affected communities</li> <li>• impacts on community wellbeing, health and cohesion, including road safety</li> <li>• potential impacts on recreational and cultural activities and values, including out stations, ceremonies, hunting, fishing and valued species</li> <li>• impacts to culturally significant and heritage sites</li> </ul>

Aspect	Specific information required
	<ul style="list-style-type: none"> <li>• potential impacts on short-term accommodation, including tourism</li> <li>• impacts on commercial flights between Darwin and Tiwi airports at Wurrumiyanga, Milikapiti and Pirlangimpi</li> <li>• impacts on existing waste management facilities at Pirlangimpi and Milikapiti</li> <li>• potential impacts on marine traffic, including freight-barge logistics, recreational fishing and ranger groups</li> <li>• the social and economic impacts of any degradation of Pirlangimpi’s water supply in terms of availability and water quality. Quantify the significance and extent of proposal impacts in consideration of:               <ul style="list-style-type: none"> <li>○ <a href="#">Tiwi Islands Water Resource Strategy 2012</a></li> <li>○ <a href="#">Northern Territory Water Allocation Planning Framework 2000</a></li> </ul> </li> <li>• impacts on amenity, e.g. noise and vibrations, dust, traffic, visual pollution, changes to land and seascapes and odours</li> <li>• potential risks (e.g. labor shortage and financial) to proposal implementation.</li> </ul> <p>The assessment must be informed by an inclusive and collaborative community and stakeholder engagement, and relevant investigations or information. Provide the outcomes of relevant technical studies, such as an economic impact assessment (in line with the QLD Guideline above), financial capacity assessment and predictive assessments of noise, vibration and odour in the draft EIS.</p> <p>The assessment must quantify the significance of potential impacts and risks to local and NT communities and the economy.</p> <p>Assess the potential impacts of a changing climate to community and economy in consideration of cumulative impacts from the proposal and other activities in the region.</p>
Avoidance, mitigation and management	<p>Outline the measures for systematically avoiding and mitigating adverse social impacts, and maximising benefits.</p> <p>Discuss strategies and measures that would be implemented to address:</p> <ul style="list-style-type: none"> <li>• ongoing community and stakeholder engagement</li> <li>• workforce management (including targets for local and Aboriginal employment and how they will be met)</li> <li>• skills shortages (including training and capacity building)</li> <li>• housing and accommodation</li> <li>• local business and industry procurement</li> <li>• community wellbeing</li> <li>• transmission corridor proximity to a public road reserve<sup>8</sup></li> <li>• protection of community and cultural values, including Aboriginal sacred sites</li> <li>• cumulative impacts relevant to multiuser Port Melville facility</li> <li>• avoidance of any financial or environmental liability</li> <li>• reversibility of potential impacts.</li> </ul> <p>Describe the key management plan/s for this factor and the associated performance indicators, timeframes for its implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice,</p>

<sup>8</sup> Refer to Land Clearing Guidelines

Aspect	Specific information required
	including advice from relevant NT Government authorities.
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to community and economy, and mitigation and management measures. Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	Identify any potential residual impact or risk of the proposal to identified values.

## 2.4.7. Human health

Table 9 Minimum information required for the assessment of human health

Aspect	Specific information required
<b>NT EPA objective: Protect the health of the Northern Territory population.</b>	
Relevant activities	<ul style="list-style-type: none"> <li>• Construction activities</li> <li>• Operational activities including hydrogen production and export, use of equipment and plant, and operation of wastewater treatment system</li> <li>• Storage and transportation of hazardous chemicals</li> <li>• Temporary use of Port Bores</li> </ul>
Social values	<ul style="list-style-type: none"> <li>• Describe the sensitive human receptors in proximity to the proposal area. Provide maps to support descriptions as appropriate.</li> </ul>
Potential impacts and risks	<p>Identify, describe and assess potential direct and indirect impacts and risks of implementing the proposal, and cumulative impacts, on human health including:</p> <ul style="list-style-type: none"> <li>• human exposure to electric and magnetic fields (EMF) from the establishment of the solar farm and transmission line</li> <li>• potential human exposure to chemicals and processing by-products</li> <li>• human proximity to the hydrogen production and export precinct with the potential to cause explosion and fire hazard<sup>9</sup></li> <li>• biting insects, ticks and mites</li> <li>• contamination of Port Bores and Pirlangimpi community water supply through the seepage of hazardous materials and/or landward movement of seawater driven by unsustainable extraction of groundwater.</li> </ul> <p>The assessment should be based on the outcomes of investigations and other relevant information and quantify the significance of impacts and risks in consideration of relevant guideline thresholds. The assessment of each aspect should consider cumulative impacts and the reversibility of potential impacts.</p>

<sup>9</sup> May require authorisation under the *Work Health and Safety (National Uniform Legislation) Act 2011* etc.

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Aspect	Specific information required
	<p>Predict the release and dispersion of hydrogen with reasonable accuracy using modelling tools and provide modelling results including the potential for explosion risks and uncertainties or any identified gaps.</p> <p>Provide exposure assessment to EMF identifying all EMF sources, exposure levels, sensitive receptors and the significance of potential human health effects, including uncertainties and any identified gaps.</p> <p>Assess the potential impacts of a changing climate on human health in consideration of cumulative impacts from the proposal and other activities in the region.</p>
Avoidance, mitigation and management	<p>Outline the measures for avoiding, mitigating, or offsetting impacts identified above. These should address at a minimum:</p> <ul style="list-style-type: none"> <li>• facility design and layout</li> <li>• construction/installation methods</li> <li>• facility operations and maintenance</li> <li>• safety distance from hazardous areas</li> <li>• fire and explosion hazard management</li> <li>• EMF risk management</li> <li>• biting insect management</li> <li>• waste management</li> <li>• hazardous chemicals management</li> <li>• emergency response plan including dedicated response infrastructure</li> <li>• use of clean, green or eco-friendly products and chemicals (e.g. PFAS-free)</li> <li>• sustainable extraction of groundwater</li> <li>• compliance with any statutory plan or policy</li> </ul> <p>Outline the key management plan/s for managing this factor and the associated performance indicators, timeframes for its implementation, and the roles and responsibilities of the personnel involved.</p> <p>Demonstrate that mitigation measures are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Monitoring and reporting	<p>Provide proposed monitoring and reporting activities related to potential impacts and risks to human health, and mitigation and management measures. Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the proposal will be acceptable.</p> <p>The proposed monitoring and reporting should specify which proposal phase it relates to i.e., construction or operations.</p> <p>Demonstrate that monitoring activities are in accordance with best-practice, including advice from relevant NT Government authorities.</p>
Residual impact	<p>Identify any potential residual impact or risk of the proposal to identified values.</p>

## 3. Other requirements

### 3.1. Matters of national environmental significance

The proposal is a controlled action under the EPBC Act where the relevant controlling provisions are:

- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (s20 and s20A)
- The environment of the Commonwealth marine area, or the environment as the proposal would take place in a Commonwealth marine area (s23 and s24A).

The EIS must address all relevant protected matters specified in Schedule 4 of the EPBC Regulations and explain how the Conservation Advices for each EPBC Act listed species (that is known or is likely to be impacted) has been adequately considered. The EIS must explain how the proposal is consistent with any Guidelines, Threat Abatement Plans, Bioregional Plans or Recovery Plans, including but not limited to:

- [Marine bioregional plan for the North Marine Region](#)
- [EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts](#)
- [National light pollution guidelines for Wildlife including marine turtles, seabirds and migratory shorebirds](#)
- Conservation advices for:
  - Tiwi Masked Owl (*Tyto novaehollandiae melvillensis*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/26049-conservation-advice-01102015.pdf>
  - Red Goshawk (*Erythrotriorchis radiatus*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/942-conservation-advice-31102015.pdf>
  - Partridge Pigeon (eastern) (*Geophaps smithii smithii*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/64441-conservation-advice-01102015.pdf>
  - Dwarf Sawfish (*Pristis clavata*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/68447-conservation-advice.pdf>
  - Green Sawfish (*Pristis zijsron*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/68442-conservation-advice.pdf>
  - Spertooth Shark (*Glyphis glyphis*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/82453-conservation-advice.pdf>
  - Northern River Shark (*Glyphis garricki*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/82454-conservation-advice.pdf>

- Freshwater Sawfish (*Pristis pristis*)  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/60756-conservation-advice.pdf>
- *Typhonium mirabile*  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/79227-conservation-advice.pdf>
- *Typhonium jonessi*  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/62412-conservation-advice.pdf>
- Recovery plans for:
  - Red Goshawk (*Erythroriorchis radiatus*)  
<https://www.dcceew.gov.au/sites/default/files/documents/erythroriorchis-radiatus.pdf>
  - Sawfish and River Sharks  
<https://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/sawfish-river-sharks-multispecies-recovery-plan>
  - Marine Turtles  
<https://www.dcceew.gov.au/sites/default/files/documents/recovery-plan-marine-turtles-2017.pdf>
- Threat abatement plans for:
  - Invasion by five listed grassy weeds  
<https://www.dcceew.gov.au/sites/default/files/documents/five-listed-grasses-tap.pdf>
  - Predation and habitat degradation by feral pigs  
<https://www.dcceew.gov.au/sites/default/files/documents/tap-feral-pigs-2017.pdf>
  - Predation by feral cats  
<https://www.dcceew.gov.au/sites/default/files/documents/tap-cat-report.pdf>

## 3.2. Whole of the environment considerations (NT and Commonwealth)

Provide a holistic assessment of the impacts of the proposal on the whole of the environment, including a consistent description of the proposal, connections and interactions between the environmental factors, and cumulative impacts. Succinctly discuss predicted outcomes in relation to the principles of environment protection and management (as set out in Part 1 of the EPBC Act and Part 2 of the EP Act), and the NT EPA's environmental objectives.

## 3.3. Consideration of the impacts of a changing climate

The draft EIS must assess how adaptation to a changing climate has been considered in the proposal, with reference to the NT policy *Northern Territory Climate Change Response: Towards 2050* (DENR 2020)<sup>10</sup> and

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<sup>10</sup> DENR, 2020. Northern Territory Climate Change Response: Towards 2050. Department of Environment and Natural Resources, Darwin.



[Climate Change in the Northern Territory: State of the science and climate change impacts](#) (NESP ESCC Hub 2020).

Assess the extent to which the outcomes and commitments proposed address any significant vulnerabilities of the proposal and the environmental values in and adjacent to the proposal area under the most current, down-scaled climate projections for the region.

## 4. Public consultation requirements

The public consultation requirements for the draft EIS are outlined in Part 5 Division 6 of the EP Regulations. Additional specific details are provided below.

### 4.1. Submission period

The submission period under the EP Act during which feedback can be given on the draft EIS is between 30 and 60 business days. The duration of the period will be confirmed during the draft EIS pre-lodgement phase.

### 4.2. Manner in which to publish

The draft EIS must be provided as:

- accessible PDF files that do not exceed 20MB
- nine (9) printed copies for display at the locations in section 4.4 below.

The draft EIS must:

- be divided into two parts:
  - a main report (with executive summary available as separate document)
  - appendices to the main report
- have a navigable table of contents
- present information in format that is easy to follow
- use hyperlinks to assist with navigation through the document
- generally conform with the Web Content Accessibility Guidelines (WCAG) 2.0 Level AA and material relevant to creating accessible documents on the [NT Government website](#).

### 4.3. Advertising

An advertisement must be placed in the NT News indicating that the draft EIS is available for comment, the locations where it can be inspected and obtained, the period in which comments/submissions can be made and where they can be made, and contact details for obtaining further information.

### 4.4. Public consultation locations

The draft EIS should be provided to and be made available for public consultation at:

- Tiwi Land Council, Lot 696 Babui Street, Wurrumiyanga, NT 0822
- Tiwi Land Council, 116 Reichardt Rd, Winnellie, NT 0820

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- Pirlangimpi Community Library, Pirlangimpi, NT 0822
- Milikapiti Community Library, Milikapiti, NT 0822
- NT Port and Marine, Port Melville or appointed administrator(s)
- Environment Centre Northern Territory, Unit 3, 98 Woods St, Darwin, NT 0800.
- Northern Territory Library, Parliament House, Darwin, NT 0800
- NT EPA, Level 1, Arnhemica House, 16 Parap Road, Parap, NT 0820
- Department of Industry, Tourism and Trade, Level 4, Paspalis Centrepoint Building, 48-50 Smith Street, Darwin, NT 0800

## Appendix A – List of relevant guidance material

The following guidance material is considered relevant to the TOR. This list is not exhaustive, but captures key guidance used in the preparation of these TOR and to inform the preparation of the EIS. The proponent must draw on further relevant industry and best practice guidance as part of developing the EIS.

- Commonwealth of Australia 2008. Threat Abatement Plan for predation by feral cats. Department of Agriculture, Water and the Environment.  
<https://www.dcceew.gov.au/sites/default/files/documents/tap-cat-report.pdf>
- Commonwealth of Australia, 2009. Conservation Advice *Pristis clavata*, Dwarf Sawfish. Department of Agriculture, Water and the Environment  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/68447-conservation-advice.pdf>
- Commonwealth of Australia, 2012. Marine bioregional plan for the North Marine Region. Department. Department of Agriculture, Water and the Environment:  
<http://environment.gov.au/coasts/marineplans/north/index.html>
- Commonwealth of Australia, 2012. National recovery plan for the red goshawk *Erythrotriorchis radiatus*. <https://www.dcceew.gov.au/sites/default/files/documents/erythrotriorchis-radiatus.pdf>
- Commonwealth of Australia, 2012. Threat abatement plan to reduce the impacts on northern Australia's biodiversity by the five listed grasses.  
<https://www.dcceew.gov.au/sites/default/files/documents/five-listed-grasses-tap.pdf>
- Commonwealth of Australia, 2013. Significant Impact Guidelines 1.1: Matters of National Environmental Significance. Department of Agriculture, Water and the Environment:  
<https://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>
- Commonwealth of Australia, 2013. Significant Impact Guidelines 1.2: Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies Department of Agriculture, Water and the Environment: [http://www.environment.gov.au/system/files/resources/a0af2153-29dc-453c-8f04-3de35bca5264/files/commonwealth-guidelines\\_1.pdf](http://www.environment.gov.au/system/files/resources/a0af2153-29dc-453c-8f04-3de35bca5264/files/commonwealth-guidelines_1.pdf)
- Commonwealth of Australia, 2014. Conservation Advice *Glyphis glyphis* (speartooth shark). Threatened Species Scientific Committee:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/82453-conservation-advice.pdf>
- Commonwealth of Australia, 2014. Conservation Advice *Glyphis garricki* (northern river shark). Threatened Species Scientific Committee:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/82454-conservation-advice.pdf>
- Commonwealth of Australia, 2014. Conservation Advice *Pristis pristis* (largetooth sawfish). Threatened Species Scientific Committee:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/60756-conservation-advice.pdf>
- Commonwealth of Australia, 2014. Conservation Advice *Typhonium mirabile*. Department of Agriculture, Water and the Environment  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/79227-conservation-advice.pdf>

- Commonwealth of Australia, 2014. Conservation Advice *Typhonium jonesii*. Department of Agriculture, Water and the Environment  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/62412-conservation-advice.pdf>
- Commonwealth of Australia, 2015. Conservation Advice *Geophaps smithii smithii*, partridge pigeon (eastern). Threatened Species Scientific Committee:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/64441-conservation-advice-01102015.pdf>.
- Commonwealth of Australia, 2015. Conservation Advice *Tyto novaehollandiae kimberli*, masked owl (northern). Threatened Species Scientific Committee: [http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon\\_id=26048](http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26048)
- Commonwealth of Australia, 2015. Conservation Advice *Erythrotriorchis radiatus*, red goshawk. Threatened Species Scientific Committee:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/942-conservation-advice-31102015.pdf>
- Commonwealth of Australia, 2015. Sawfish and River Sharks Multispecies Recovery Plan. Department of Agriculture, Water and the Environment:  
<http://www.environment.gov.au/biodiversity/threatened/publications/recovery/sawfish-river-sharks-multispecies-recovery-plan>
- Commonwealth of Australia, 2016. Conservation Advice *Pristis zijsron* Green Sawfish. Department of Agriculture, Water and the Environment:  
<https://www.environment.gov.au/biodiversity/threatened/species/pubs/68442-conservation-advice.pdf>
- Commonwealth of Australia, 2017. EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species. Department of Agriculture, Water and the Environment:  
<http://www.environment.gov.au/epbc/publications/shorebirds-guidelines>
- Commonwealth of Australia, 2017. Recovery Plan for Marine Turtles in Australia. Department of Agriculture, Water and the Environment:  
<http://www.environment.gov.au/marine/publications/recovery-plan-marine-turtles-australia-2017>
- Commonwealth of Australia, 2017. Threat Abatement Plan for predation, habitat degradation, competition and disease transmission by feral pigs  
<https://www.dcceew.gov.au/sites/default/files/documents/tap-feral-pigs-2017.pdf>
- Commonwealth of Australia, 2023. The Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999 (interim guidance). Department of Climate Change, Energy, the Environment and Water.  
<https://www.dcceew.gov.au/environment/epbc/publications/engage-early>
- Department of Natural Resources, Environment, The Arts and Sport 2012. Tiwi Islands Water Resource Strategy. Northern Territory Government.  
<https://territorystories.nt.gov.au/10070/802152>
- Department of Sustainability, Environment, Water, Population and Communities 2012. Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy.

- DENR 2000. Northern Territory Water Allocation Planning Framework. Northern Territory Government. [https://depws.nt.gov.au/\\_data/assets/pdf\\_file/0011/476669/nt-water-allocation-planning-framework.pdf](https://depws.nt.gov.au/_data/assets/pdf_file/0011/476669/nt-water-allocation-planning-framework.pdf)
- DENR 2019. Northern Territory Offsets Policy (Draft). Northern Territory Government. Northern Territory Offsets Policy (apo.org.au)
- DENR, 2020. Land clearing guidelines. Department of Environment and Natural Resources: <https://nt.gov.au/property/land-clearing>
- DENR, 2020. Northern Territory Climate Change Response: Towards 2050. Department of Environment and Natural Resources: [https://depws.nt.gov.au/\\_data/assets/pdf\\_file/0005/904775/northern-territory-climate-change-response-towards-2050.pdf](https://depws.nt.gov.au/_data/assets/pdf_file/0005/904775/northern-territory-climate-change-response-towards-2050.pdf)
- DoH, 2005. Guidelines for preventing mosquito breeding sites associated with mining sites. Medical Entomology, Department of Health: <https://digitallibrary.health.nt.gov.au/prodjspui/handle/10137/1029>
- Derwent, R., Simmonds, P., O'Doherty, S., Manning, A., Collins, W., & Stevenson, D. (2006). Global environmental impacts of the hydrogen economy. *International Journal of Nuclear Hydrogen Production and Applications*, 1(1), 57-67.
- NESP Earth Systems and Climate Change Hub, 2020. Climate change in the Northern Territory: state of the science and climate change impacts. National Environment Science Programme, Earth Systems and Climate Change Hub: <http://nespclimate.com.au/building-understanding-of-climate-change-in-the-northern-territory/>
- Northern Territory Government, 2017. Preventing weed spread guide, Weed Management Branch: <https://nt.gov.au/environment/weeds/how-to-manage-weeds/prevent-weed-spread-industry-and-recreation>
- NSW DPIE, 2021. Cumulative Impact Assessment Guideline for State Significant Projects. NSW Department of Planning, Industry and Environment: <https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/Policy-and-legislation/GD1259-RAF-Assessing-Cumulative-Impacts-Guide-final.pdf>
- NSW DPIE, 2021. Social Impact Assessment Guideline for State Significant Projects. NSW Department of Planning, Industry and Environment: [https://shared-drupal-s3fs.s3.ap-southeast-2.amazonaws.com/master-test/fapub\\_pdf/SIA+Guideline+20210622v6\\_FINAL.pdf](https://shared-drupal-s3fs.s3.ap-southeast-2.amazonaws.com/master-test/fapub_pdf/SIA+Guideline+20210622v6_FINAL.pdf)
- NSW Waste classification guidelines at <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>
- NT EPA, 2013. Guidelines for Assessment of Impacts on Terrestrial Biodiversity. Northern Territory Environment Protection Authority: <https://ntepa.nt.gov.au/publications-and-advice/environmental-management>
- NT EPA, 2013. Guidelines for the Preparation of an Economic and Social Impact Assessment. Northern Territory Environment Protection Authority: <https://ntepa.nt.gov.au/publications-and-advice/environmental-management>
- NT EPA, 2013. Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the NT. Northern Territory Environment Protection Authority.
- NT EPA, 2015. Waste Management Strategy for the Northern Territory 2015-2022. Northern Territory Environment Protection Authority: <https://ntepa.nt.gov.au/publications-and-advice/environmental-management>

## Terms of Reference for an Environmental Impact Statement (EIS)

- NT EPA, 2020. Environmental impact assessment guidance: NT EPA Environmental Factors and Objectives. Northern Territory Environment Protection Authority:  
<https://ntepa.nt.gov.au/publications-and-advice/environmental-management>
- NT EPA, 2020. Environmental impact assessment guidance for proponents: Stakeholder Engagement and Consultation. Northern Territory Environment Protection Authority:  
<https://ntepa.nt.gov.au/publications-and-advice/environmental-management>
- NT EPA, 2021. Environmental impact assessment guidance for proponents: Preparing an environmental impact statement. Northern Territory Environment Protection Authority:  
[https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0009/818217/preparing-an-environmental-impact-statements.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0009/818217/preparing-an-environmental-impact-statements.pdf)
- NT EPA, 2022. Tiwi H2 Project (Green Hydrogen Production and Export). Northern Territory Environment Protection Authority:  
[https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0011/1166177/notice-of-decision-provaris-tiwi-h2-oct22.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0011/1166177/notice-of-decision-provaris-tiwi-h2-oct22.pdf)