Terms of Reference for an Environmental Impact Statement

Project Ares

Energy North Pty Ltd

Barkly Regional Local Government Area

20 November 2026

ntepa Northern Territory Environment Protection Authority

Proposed action	Project Ares
Proponent	Energy North Pty Ltd
NT EPA reference	EP2026/052
Local government area	Barkly Regional Local Government Area
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Further information and guidance on the environmental impact assessment process is available on the NT EPA website at: www.ntepa.nt.gov.au

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1. Introduction

1.1. Overview

Project Ares proposed by Energy North Pty Ltd (the proponent) was referred to the Northern Territory Environment Protection Authority (NT EPA) for consideration under the *Environment Protection Act 2019* (EP Act) as a proponent initiated environmental impact statement (EIS) referral. In accordance with regulation 43 of the Environment Protection Regulations 2020 (EP Regulations), the proponent prepared the following documents to be included in the referral:

- draft terms of reference (TOR) for assessment by EIS
- draft statement of reasons for why an assessment by EIS is required for the proposed action and that the draft TOR are appropriate.

Under EP Regulation 104(3)(b) the NT EPA has decided to approve the draft terms of reference with changes the NT EPA considered appropriate (this document). These TOR set out the matters relating to the environment that are to be addressed in the EIS for the proposed action. The EIS must also address all requirements in the NT EPA's Preparing an environmental impact statement – Environmental impact assessment guidance for proponents.

1.2. Background

Project Ares (the Proposal) (EP2026/052) is a proposed hyperscale data centre at Murranji Station (NT Portion 851) in the Barkly Region of the Northern Territory (NT), approximately 683 km south of Darwin and around 50 km north-west of Elliott.

The Proposal comprises a single integrated hyperscale data centre campus with a total information technology (IT) capacity of 1 gigawatt (GW), delivered in two stages. Phase 1 delivers 500 megawatts (MW) of firm generation capacity to support the first 500 MW IT load. Phase 2 delivers the remaining 500 MW of firm generation capacity to support the full 1 GW IT load. The Proposal adopts a behind-the-meter power architecture, designed to transition to renewable-powered operations.

Key Proposal components include:

- a hyperscale data centre campus, including data halls, cooling infrastructure, operations and administration facilities (1 GW IT load, up to 90 ha)
- solar photovoltaic (PV) generation (3,000 MW peak, up to 7,000 ha) and battery energy storage system (BESS) infrastructure (16 GW hour, up to 80 ha)
- gas-fired power generation facility (1,038 MW, footprint to be confirmed) and supporting gas infrastructure within the Proposal boundary
- non-process infrastructure including access roads, internal roads, rail siding to the Tarcoola–Darwin Railway, sealed airstrip, construction and operational workforce accommodation village, borefield, and water supply infrastructure
- associated water supply, treatment, storage and reticulation infrastructure.

The data centre facility has an intended operational life of more than 25 years, with the overall Proposal

lifespan extending beyond 30 years through solar PV and BESS repowering campaigns.

The proponent has identified its intent to commit to a defined transition pathway toward renewable-powered operations, with the transition to occur as rapidly as equipment procurement timelines, long-duration battery storage economics, and Tier III firm power requirements permit.

The proponent has identified that specific milestones and targets will be confirmed during front-end engineering design and documented and implemented through the environmental management framework developed as part of the EIS process.

1.3. Assessment period

The draft EIS is to be submitted to the NT EPA within two years from the date of issue of these TOR (in line with regulation 99 of the EP Regulations and in consideration of the matters listed under EP Regulation 99(3)).

1.4. Assessment under bilateral assessment process

Approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have a significant impact on a Matter of National Environmental Significance (MNES). There is potential for the Proposal to impact on two MNES:

- Listed threatened species and communities (sections 18 and 18A).
- Listed migratory species (sections 20 & 20A)

The proponent submitted a referral for consideration under the EPBC Act. The Proposal is determined to be a controlled action and will be assessed under the Assessment bilateral agreement between the Commonwealth and NT governments, to streamline the assessment process and remove unnecessary duplication in line with Section 45 and 46 of the EP Act.

Information on the EPBC Act and protected matters can be obtained from the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) website at https://www.dcceew.gov.au/environment/epbc noting that Commonwealth environmental assessment functions transitioned to the National Environmental Protection Agency (National EPA) on 1 July 2026.

2. Matters to be addressed in the draft EIS

2.1. Executive summary of the draft EIS

A stand-alone summary of the draft EIS is required. The summary is to be presented in a way that is accessible to interested parties who may not wish to read the full draft EIS, enabling stakeholders to understand the likely consequences of the proposed action.

The summary must provide the following at a minimum:

- a clear and concise overview of the Proposal including proponent, elements of the proposed action, development stages, activities, lifespan, the potentially affected area, and appropriate map/s
- a summary of the site selection process and alternatives considered
- a summary of the environmental values in the potentially affected area

- a summary of the potential significant environmental impacts of the Proposal on the identified values
- a summary of the potential cumulative impacts with consideration of existing and proposed activities in the Barkly region
- a summary of the potential indirect impacts associated with enabling infrastructure that is outside of the proposed action, but which are necessary for the operation of the Proposal (i.e. pipelines, fibre optic)
- a summary of measures to avoid, mitigate and/or offset potential significant impacts of the proposed action, with clear and measurable outcomes for environment protection
- a summary of stakeholder engagement and future commitments, including Aboriginal stakeholders
- a summary of measures to protect culture and heritage
- a summary of decommissioning at the end of the proposed action's life, rehabilitation/restoration and future land use
- a summary of the potential benefits of the proposed action.

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 must include:

- a summary table listing the main physical components of the Proposal and their maximum spatial extent or quantity, using appropriate parameters including the matters outlined in Table 1
- supporting maps, figures, images, diagrams, and flow charts
- the decision-making criteria and framework used in considering various options that would deliver the required outcomes, with identification of the various options that were evaluated in deciding the Proposal design, why the preferred option was selected above other options, and how the environmental decision-making hierarchy was applied
- a discussion of how the Proposal addresses sections 42 and 43 of the EP Act, including the principles of ecologically sustainable development (sections 17-24 of EP Act)
- any variations or modifications to the Proposal since the referral information was submitted
- how the Proposal relates to other current and future actions proposed or being undertaken in the region, including infrastructure required to facilitate this proposed action.

Provide detail about any information gaps or uncertainties about the proposal in the EIS, including any further studies or measures required to address these gaps. Where there is uncertainty in the concept design, footprint, capacity or life of the Proposal or its components, the approach to resolving this uncertainty must be clearly explained and the maximum extent or range for each parameter provided.

The draft EIS is to:

- use committed language (e.g. 'will') instead of ambiguous terms (e.g. 'may', 'where possible', 'if required', etc.)
- demonstrate that all proposed avoidance, mitigation and management measures, as well as all monitoring activities, are based on relevant guidance or are in accordance with contemporary best practice.

2.2.2. Potentially affected area

Delineate the area of the proposed action, taking into account the Proposal area and the surrounding land and waterways that may be impacted by the proposed action, with a suitable buffer to allow for uncertainty.

Provide maps showing:

- the extent of the Proposal area alongside important local and regional features
- current land tenure, land use, and native title in the potentially affected area
- other interests in land such as minerals and petroleum
- sensitive environments, including towns, communities, homesteads and residences, any sites of conservation significance, and cultural values (if appropriate and with permission from relevant Aboriginal stakeholders) potentially affected by the proposed action.

2.2.3. Proponent

Provide background to the proponent, including:

- the proponent's environmental history, including notification/disclosure of offences, or non-compliances with state/territory or Commonwealth environmental legislation
- experience in the industry and development of major projects
- experience, qualifications and certification of all suitably qualified consultants and subconsultants engaged by the proponent to complete the EIS.

Outline any partnerships with other organisations or industries as part of the proposed action.

2.2.4. Objectives of the Proposal

State the rationale and justification for the Proposal that considers the social, economic and other environmental benefits and costs to the NT and to local and regional communities over the life of the proposed action.

List the objectives of the Proposal and include a description of how the Proposal meets these objectives. Include:

- key requirements of the Proposal e.g. workforce, energy and water demand
- a description of how the Proposal objectives are consistent with any environmental, social, economic or cultural objectives.

The EIS must also demonstrate how the key objectives of the Proposal meet the objects in section 3 and requirements of sections 42 and 43 of the EP Act.

2.2.5. Construction, operation, and decommissioning

Provide a detailed description of all construction, commissioning and operational aspects of the Proposal as outlined in Table 1.

Table 1. Minimum information requirements for the proposed action

Topic	Required information

Site layout maps	The description of the Proposal must include, but will not be limited to, detailed maps and graphic illustrations of:
	• the location and dimensions of existing disturbance, infrastructure and roads/tracks and natural and modified landforms (including a depiction of these overlaid on aerial photos or high-resolution satellite imagery) within the potentially affected area the location and approximate dimensions of areas to be disturbed, structures to be built or repurposed including but not limited to:
	  ○ all areas to be cleared or disturbed
	  ○ access roads, air, rail and services infrastructure
	  ○ laydown areas and burrow pits
	  ○ storm water and drainage infrastructure
	  ○ buildings and structures
	  ▪ data centre campus
	  ▪ cooling towers
	  ▪ accommodation camps (temporary and permanent)
	  ○ solar PV array
	  ○ battery energy storage system
	  ○ gas pipeline corridor and spur
	  ○ gas fired generation facility
	  ○ gas storage
	  ○ transmission corridors
	  ○ fibre optic corridors
	  ○ temporary stockpiles
	  ○ water storage and treatment facility
	  ○ chemical storage areas
	  ○ waste storage facilities, including for hazardous waste.
	• the Proposal layout overlain with environmental values and sensitive receptors within the potentially affected area
	• the boundaries of the Proposal area in relation to any overlapping or adjacent leases or permits (mineral, petroleum or other); and any other interests in land including Native Title (claims or determined), Aboriginal freehold land, and pastoral land.

Design	Describe design options considered, including different configurations of the proposed action's infrastructure components, reasons for selection of preferred design options, and how the proposed design avoids and/or mitigates environmental constraints and potential impacts and risks to the surrounding environment. Describe key elements in the design of the Proposal including provision for the proposed action's infrastructure (e.g. gas power station, solar generation sites, solar panels, battery energy storage systems). Describe the design schedule and key milestones to support the proposed renewables-first, behind-the-meter power architecture, including the associated energy source ratios through the transition to renewables and the proposed fully

Topic	Required information
	operational energy source ratio. Describe how the Proposal, including key elements, will integrate with existing government and privately operated infrastructure networks e.g. road, rail, transmission lines and fibre optic lines. Describe how the Proposal has been designed to minimise social, cultural, and environmental impacts, considering the needs of the community and stakeholders. Describe how the Proposal has been designed to consider, or allow for, adaptation to a changing climate. Describe key elements of proposed wastewater treatment, disposal and reuse arrangements.
Site selection	Describe and justify the site selection process for the Proposal including: • alternative Proposal area site locations • site selection processes within the selected Proposal area site • consideration of stakeholder comments • consideration of potential impacts to threatened species and sites of conservation significance • consideration of visual impact on the landscape • consideration of sites of heritage and cultural value. Include a list of the criteria used for site selection and discuss the outcomes in relation to the principles of environment protection and management (as set out in Part 2 of the EP Act), adaptation to a changing climate, and the NT EPA's environmental objectives.
Construction and repowering	Describe all elements and stages of construction and repowering including but not limited to: • vegetation clearing and site preparation, including total amount of clearing and areas being cleared • construction methodology including equipment and machinery required • construction materials required – types, quantities, sources, storage requirements and potential hazards. Where large volumes of fill or rock material are proposed to be imported to the site, identify the potential sources of this fill / borrow material, the criteria that will be adopted to confirm suitability for the proposed use and any related environmental regulatory requirements • location, extent, and nature of temporary stockpiles of borrow material and topsoil • any existing infrastructure required to service the proposed action, including road and rail, electricity supply, water supply, and sewerage • details of environmental management during construction, including:

Topic	Required information
	○ water management and use including stormwater drainage ○ erosion and sediment control ○ controls to avoid spills/discharges ○ biosecurity measures to address weeds, feral animals and other pests ○ waste management ○ air quality management ○ maintenance of components and servicing of infrastructure ○ noise and vibration management ○ maintenance of existing onsite infrastructure during construction ○ timeframes for completion ○ applicable legislation, guidelines, and standards.
Operation and repowering	Describe all elements and stages of the operation phase including but not limited to: • details on proposed infrastructure – location, size and type including design principles and considerations to account for environmental values and to deliver on environmental commitments, including the proposed renewables-first energy commitment • materials and chemicals required - major types, quantities, qualities, sources, potential hazards, transport, transfer, and storage requirements and location • erosion and sediment control • biosecurity measures to address weeds, feral animals and other pests • water requirements, sources and proposed treatment (provide a water balance showing inputs, demand across the different elements of the Proposal as well as outputs) • water management including stormwater drainage and associated with an increase in hard surfaces • wastewater management, specifically with respect to the karstic aquifer as the receptor of concern. • waste management, including disposal/recycling of expended solar panels and batteries as well as IT equipment, wastewater and solid wastes associated with the workers accommodation, and containment and disposal of contaminated wastewater and solids with details of pits, bunds, treatment and recycling • air quality management, including containment of dust as well as emissions from the gas generation facility and any back up diesel generators • ongoing maintenance components and servicing of

Topic	Required information
	infrastructure • the proposed power usage effectiveness (PUE) of the hyperscale data centre as well as water usage effectiveness (WUE) • the proposed use of recycled water for cooling or other purposes • any feasible operation alternatives including alternatives for land management at the solar farm precinct (e.g. inclusion of grazing). 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 • fire management and risk, including the risk of firewater runoff and toxic combustion products reaching soil, groundwater and habitat. State whether any PFAS containing fire-suppression agents are proposed. Describe all elements and stages of any repowering campaign including: • lifespan of Proposal infrastructure, including solar panels and battery energy storage systems • materials and chemicals required - major types, quantities, qualities, sources, potential hazards, transport and storage requirements and location • waste management, including onsite stockpiling of waste and offsite disposal/recycling.
Transport and traffic	Describe traffic and transport activities during construction, operation and decommissioning including but not limited to: • proposed transport methods and routes • rail and rail siding • air • marine • proposed haul roads • access tracks • public roads (including any proposed realignments, closures, and upgrades) • proximity to sensitive receptors and sensitive areas (e.g. townships or communities/outstations, residents, waterways, sensitive and/or significant vegetation, cultural heritage values, threatened and invasive species) • forecast vehicle/vessel movements including type, size, volume, and frequency of movements, volumes of traffic, vehicle/vessel types, access routes, hours of operation • existing transport baseline information including current traffic numbers, movement patterns (during wet and dry seasons) and relevant existing

Topic	Required information
	infrastructure on potentially affected roads/road network.
Energy	Provide relevant information with respect to energy during construction, operation and decommissioning, including but not limited to: • energy requirements from renewable and non-renewable sources, including the proposed schedule toward renewable-powered operations • consideration of renewable sources of energy and justification of selected options
Workforce	Provide an assessment of the workforce required for each phase of the proposed action, including but not limited to an evaluation of the following: • estimated number of people to be employed • sources (local, regional, interstate, overseas) • workforce training opportunities • employment opportunities for Aboriginal people • indirect local and regional workforce opportunities created through local and regional procurement opportunities • on-site facilities provided (including any accommodation) • benefits to the local and regional community.
Decommissioning and rehabilitation	Discuss the strategy and provide a draft plan and timeline for decommissioning of the proposed action. The strategy and draft plan are to include but not be limited to the following considerations: • dismantling, removal and waste management strategies of Proposal infrastructure and components (e.g. solar panels, local collector network, inverters, batteries, substations) at the end of their life cycle, throughout the life of the Proposal and at the end of the proposed action's life • an inventory for waste management according to the staging and trajectories of the number and volume of solar panels, inverters, energy storage system battery waste and e-waste from components of the datacentre • potential contamination from components • unplanned decommissioning, closure, planned closure of the proposed action • rehabilitation and restoration objectives and criteria • the proposed land use after decommissioning and closure (including alternatives). Demonstrate the strategy and plan for decommissioning have considered section 26 (environmental decision-making hierarchy) and section 27 (waste management hierarchy) of the EP Act to enhance or restore environmental quality and meets the NT EPA's environmental factor objectives.

2.3. Rehabilitation area

This section should outline the planned rehabilitation and decommissioning of infrastructure and establish decommissioning and rehabilitation objectives and goals. It should include:

- an overview of the environment and land use prior to the commencement of the Proposal
- Proposal lifespan (including construction phase) and proposed ongoing site management to contribute to rehabilitation goals, accounting for climate related risks during construction, operation, decommissioning and rehabilitation
- procedures for decommissioning and rehabilitation planning including stakeholder engagement
- the biological, cultural, economic and social viability of options for decommissioning, removal and disposal of infrastructure and components, including implications of solar panels' disposal at the end of the proposed action's life
- proposed rehabilitation measures including rehabilitation objectives and completion criteria, and proposed monitoring
- quantification of full closure and rehabilitation liability
- risk associated with a partial build only (that is, risk of an unexpected halt to the proposed action) and an assessment of the associated rehabilitation liability
- the proposed land use after closure (including alternatives).

2.4. Related projects

Identify and describe all related, associated or consequential components, actions or developments:

- upon which the Proposal is dependent; or
- that are reasonably foreseeable to occur as a direct or indirect consequence of the Proposal.

Where detailed design or approvals are not yet available, sufficient information must be provided to enable assessment, including:

- purpose and functional relationship to the proposed action
- indicative location of infrastructure
- likely timing, staging and dependencies
- relevant approvals pathways and indicative status.

Where available, provide evidence to demonstrate the technical and commercial feasibility and likelihood of delivery of related components, such as:

- preliminary design studies or concept plans
- land tenure/access arrangements
- infrastructure agreements or commitments
- regulatory pathways and anticipated approvals.

All identified related and reasonably foreseeable actions must be included within the cumulative impact assessment undertaken for each factor.

2.5. Alternatives

State the rationale and justification for the Proposal, and an assessment of alternatives to the Proposal that considers the strategic, social, economic, and environmental implications, technical feasibility and commercial drivers. Alternatives should explore the alternative power configurations, ratios and scenarios including but not limited to:

- data centre and workers accommodation powered entirely by gas power station for the life of the proposed action, including scenarios where vegetation clearance for the solar array has occurred but the benefit of the solar energy is not realised
- gas-fired power facility transitioning to a hydrogen fuel source and implications
- solar and the BESS as the primary power source with firming from gas/hydrogen
- reliance on solar and the BESS from the outset
- timeframes associated with different configurations.

Alternatives should also explore the alternative cooling systems available and water use scenarios that have been considered.

The assessment must be supported by:

- an evaluation of the alternatives that could meet the objectives of the Proposal (as set out in section 2.2.4). For each of these alternatives, include an assessment of:
    - the short, medium and long term advantages and disadvantages
    - the operational requirements (including workforce, associated infrastructure requirements, water, the energy requirements and potential sources of energy)
    - an estimate of initial capital and ongoing operating costs
    - an estimate of greenhouse gas emissions (including from vegetation clearing and energy generation)
    - a comparative desktop assessment of the potential impacts on species of conservation significance
    - consideration of potential impacts and benefits to local and regional communities over the life of the proposed action
    - key constraints (for example, land access, environmental sensitivities, grid access, water availability, planning requirements).
- clear justification for why the Proposal is preferred over the alternatives
- a comparative discussion on the social, economic, cultural and environmental values preserved or enhanced through the selection of the Proposal over the other alternatives
- a discussion of the implications of not proceeding with the proposed action.

Discuss how the principles of ecologically sustainable development (sections 17 – 24 of the EP Act) have been applied in the assessment of alternatives to the proposed action.

2.6. Whole of environment

Provide a holistic assessment of the impacts of the Proposal on the whole of the environment, in particular, a description of the connections and interactions between the environmental factors, and an assessment of cumulative impacts, and impacts at a local and regional scale. Succinctly discuss predicted outcomes in relation to the principles of environment protection and management (as set out in Part 2 of the EP Act), and the NT EPA environmental factors and objectives.

2.7. Considerations of the impacts of a changing climate

The draft EIS must:

- Include the findings of a climate risk assessment to demonstrate how the proposed action's resilience to the changing climate has been considered as well as the influence of the changing climate on the proposed action's potential for significant impact
- assess how adaptation to reasonable climate change scenarios has been considered in the design, construction, operation, and any effect on the viability of the proposed action in consideration with the most current and reasonable climate change projections for the region
- for each of the environmental factors listed below, consider how a changing climate may influence the vulnerability of the receiving environment over the life of the Proposal and assess how this may contribute to the potential for growing significant impact resulting from the proposed action. Consider how the Proposal may contribute to the vulnerability or resilience of the receiving environment to the changing climate
- describe and assess the extent to which the outcomes and commitments proposed under the Proposal will address any significant vulnerabilities of the Proposal and the environmental values in the Proposal area. The assessment must:
    - evaluate any adaptation measures including both structural (e.g. design modifications, alternative solutions) and non-structural (e.g. land-use planning, monitoring, emergency response programs) measures
    - take into consideration the most current and reasonable climate change projections for the region
    - include analysis against baseline conditions to understand historical influences of the changing climate.

2.8. Information requirements for environmental factors

The NT EPA has identified 10 environmental factors that could be significantly impacted by the Proposal (Table 2). Further information about environmental factors is available in the NT EPA's environmental factors and objectives guidance.

Table 1 Environmental factors that must be addressed in the draft EIS

THEME	FACTOR	ENVIRONMENTAL OBJECTIVE
LAND	Landforms	Conserve the variety and integrity of distinctive physical landforms.

THEME	FACTOR	ENVIRONMENTAL OBJECTIVE
	Terrestrial environmental quality	Protect the quality and integrity of land and soils so that environmental values are supported and maintained.
	Terrestrial ecosystems	Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity, and ecological functioning.
WATER	Hydrological processes	Protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.
	Inland 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.
	Aquatic ecosystems	Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.
AIR	Air quality	Protect air quality and minimise emissions and their impact so that environmental values are maintained.
	Atmospheric processes	Minimise greenhouse gas emissions so as to contribute to the NT Government's goal 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.
	Culture and heritage	Protect culture and heritage.

For each of the environmental factors listed in Table 2, the draft EIS is to provide an assessment of how the NT EPA's environmental objective would be met, as outlined in the NT EPA Guide for preparing an EIS and detailed below.

The potentially affected area is to be delineated in the EIS to identify the components of the environment (under each environmental factor) and their specific values that have the potential to be impacted by the implementation of the proposed action.

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

2.8.1. Landforms

Table 3 Minimum information required for assessment of landforms

Aspect	Specific information required
NT EPA objective: Conserve the variety and integrity of distinctive physical landforms	

Aspect	Specific information required
Environmental values	Describe the characteristics of the landform in the Proposal area. This must include, at a minimum, descriptive and spatial information for the following: • landform systems • cultural landscape and values • topography and geomorphology • karst system, including drawing a distinction between the different types of karst systems Identify environmental values that could be affected by impacts to landform quality (e.g. the physical characteristics of the predominant landform, the integrity of karst system). Include consideration of: • landscape character of the Proposal area and its relationship to the regional landscape value • the karst system underlying the Proposal area and its connection to areas outside of the Proposal area.
Potential significant impacts and risks	Through a landscape impact assessment process identify, describe, and assess potential significant impacts and risks to the quality and integrity of landform values. This must include at a minimum: • direct disturbance to the landscape (e.g. land clearing, excavation, leveling, drilling, vibration, industrial features within the natural/ pastoral landscape) • indirect disturbance from construction and operation activities, including altered drainage patterns and changes to groundwater ingress, contaminants, and artificial light sources • diminishing place/ cultural value of the landscape • potential impacts to the integrity of the underlying karst system (recognising the connectivity of this system across the landscape) • impacts and risks outside of the Proposal area including impact to landform and ecological value of Lake Woods Quantify the significance and extent of impacts, at the regional level and cumulatively with other significant projects in the region.
Avoidance, mitigation, and management	Outline measures for avoiding and mitigating impacts identified above. Consider measures to enhance or restore environmental quality. These must include at a minimum: • infrastructure (including supporting facilities) design, layout and location • site rehabilitation and restoration • screening. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework: S – Specific (what and how).

Aspect	Specific information required
	M – Measurable (supported by baseline information, number/value, quantifiable, auditable). A – Achievable (with consideration of e.g., timeframe, money, personnel). R – Relevant (consistent with conservation advice, recovery and threat abatement plans, scientific literature). T – Time-bound (specific timeframe to complete, include timeframe and frequency).
Monitoring and reporting	Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the Proposal remain acceptable.

2.8.2. Terrestrial Environmental Quality

Table 4 Minimum information required for assessment of Terrestrial environmental quality

Aspect	Specific information required
NT EPA objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained.	
Environmental values	Describe the characteristics and current condition of land and soils in the Proposal area. This must include, at a minimum, descriptive and spatial information for the following: • slope characteristics and associated runoff and erosion risk, including details of existing erosion • soil drainage to the extent that it poses a constraint to the proposed land use • soil physical and chemical properties • potential or actual presence of contaminated soils as determined from a Preliminary Site Investigation and/or contaminated land investigations, if the need is indicated • presence of potential acid sulfate soils (PASS), acid sulfate soils (ASS) and acid forming material (AFM), and indicative volumes encountered. Provide results and interpretation of all geotechnical, geochemical and soil investigations and surveys of the Proposal area. Include an assessment of the suitability of sites for relevant Proposal elements. Identify environmental values that could be affected by impacts to terrestrial environmental quality (e.g. quality and integrity of land and soils) caused by the proposed action. Include consideration of: • land uses, properties and public infrastructure surrounding the proposed action • surface watercourses and groundwater aquifers • groundwater dependent ecosystems, including Top Springs and Flora River

Aspect	Specific information required
	• aquatic ecosystems • downstream values including Newcastle Waters and Lake Woods.
Potential significant impacts and risks	Identify, describe, and assess potential significant impacts and risks to the quality and integrity of land and soils from proposed construction, operation and decommissioning activities including cumulative impacts and risks. This must include at a minimum: • direct disturbance of land and soils during construction (e.g. land clearing, excavation, trenching, compaction, loss of soil structure) • indirect disturbance from construction and operation activities resulting in soil erosion, topsoil migration, sedimentation, and altered drainage patterns • disturbance or treatment of contaminated soils, PASS, ASS and AFM • contamination of soils from spills or leaks associated with transport, storage (e.g. stockpiling, leaving in-situ) and handling (including recycling and processing of materials for recycling) of hazardous materials and electronic wastes • contaminant ingress into the transmissive aquifer, from operational discharges - cooling blowdown, treated effluent, contaminated stormwater • impacts and risks outside of the Proposal area including impact to Lake Woods, resulting from changes to surface-water ingress, impacts on ephemeral surface water pathways and potential for contaminant ingress into the aquifer Quantify the significance and extent of impacts, at the Proposal level and cumulatively, with use of and reference to relevant guidance. Where uncertainty remains, demonstrate how the precautionary principle has been applied (section 19 of EP Act).
Avoidance, mitigation, and management	Outline measures for avoiding and mitigating impacts identified above, with consideration of section 26 (environmental decision-making hierarchy) and section 27 (waste management hierarchy) of the EP Act. Consider measures to enhance or restore environmental quality. These must include at a minimum: • infrastructure (including supporting facilities) design, location and layout • construction methods and materials • Proposal staging • site rehabilitation and restoration where relevant • erosion and sediment control planning and implementation in line with best practice guidance (IECA 2008, Best Practice Erosion and Sediment Control, International Erosion Control Association (Australasia), Picton, NSW) • stormwater collection and management • PASS/ASS/AFM management (if present) any proposed works must be undertaken in accordance with the National Acid Sulfate Soils Guidance • emergency, hazard and spill response management

Aspect	Specific information required
	• end-of-life of assets management including solar panel and battery management • compliance with any statutory or policy basis for the proposed measures. Identify the standards and controls to be effectively implemented in management plans as part of the Proposal and their likely effectiveness to mitigate and manage impacts to terrestrial environmental quality. If ASS is detected, and exposure of these soils are unavoidable, an Acid Sulfate Soil Management Plan (ASSMP) is required. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant Northern Territory Government (NTG) advisory agencies. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Describe clear and measurable outcomes and commitments that will ensure the environmental objective is met and impacts of implementing the Proposal remain acceptable. Outline the proposed monitoring and reporting activities related to the identified outcomes. The proposed monitoring and reporting must specify Proposal phase it relates to including construction, operation and decommissioning of the proposed action.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.

2.8.3. Terrestrial Ecosystems

Table 5: Minimum information required for assessment of Terrestrial ecosystems

Aspect	Specific information required
NT EPA objective: Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity, and ecological functioning.	
Environmental values	Identify the existing environment and the terrestrial ecosystem values of the Proposal area and potentially affected area. This must include, at a minimum: • descriptive information (i.e. maps, geospatial data) on the location and extent of field-verified vegetation communities within the Proposal area using vegetation mapping based on the Northern Territory Guidelines and Field Methodology for Vegetation Survey and Mapping (Brocklehurst et al. 2007) • descriptive field verified spatial information (i.e. maps, geospatial data) of significant vegetation, and significant features as described in the NT Planning Scheme Land Clearing Guidelines • identification of all species of conservation significance, including restricted

Aspect	Specific information required
	range and data deficient species in addition to threatened species listed under the *Territory Parks and Wildlife Conservation Act 1976* (TPWC Act) and/ or the EPBC Act, which have the potential to occur. Assess the likelihood of occurrence for all species that are known or have the potential to occur • descriptive information (i.e. maps, geospatial data) and field verification for all species of conservation significance, including restricted range species, data deficient species (where information is available), and listed terrestrial threatened flora and fauna and migratory species known, or considered likely to occur. This must include, at a minimum: ○ greater bilby (*Macrotis lagotis*) ○ northern blue-tongue skink (*Tiliqua scincoides intermedia*) ○ red goshawk (*Erythrotriorchis radiatus*) ○ grey falcon (*Falco hypoleucos*) ○ plains death adder (*Acanthophis hawkei*) ○ Sharp-tailed Sandpiper (Calidris acuminata) ○ Australian painted snipe (*Rostratula australis*) ○ common greenshank (*Tringa nebularia*) ○ Mertens' water monitor (*Varanus mertensi*) ○ Mitchells water monitor (*Varanus mitchelli*) ○ northern brush-tailed possum (*Trichosurus vulpecula arnhemensis*) • the type, value, sensitivity, condition and geographic extent of suitable habitat (hectares), landscape context, listing status (TPWC Act, EPBC Act), threatening processes, estimates of population size, abundance and distribution used to evaluate the local and regional context for potential impacts from the proposed action. At a minimum, the fauna species considered must include those listed above and, as a precautionary approach, the following migratory species: ○ little curlew (*Numenius minutus*) ○ oriental pratincole (*Glareola maldivarum*) ○ common sandpiper (*Actitis hypoleucos*) Survey results must be presented, including but not limited to: • relevant spatial data, survey effort and species records • identification of areas of important habitat for species of conservation significance. This includes a description and quantification of the area of habitat and its connectivity at the local and regional scale • a description of the presence of invasive weeds (declared under the *Weed Management Act 2001*), pests and biosecurity risks observed or considered likely to occur in the Proposal area. Detail any information gaps or uncertainties in relation to existing surveys of

Aspect	Specific information required
	terrestrial ecosystems, including any further studies or measures undertaken to address these gaps to inform the EIS. This must include at a minimum: • appropriate justification, should survey methods for future studies diverge from relevant Commonwealth and NT guidelines, including citation of species experts or scientific literature • the likely occurrence of listed migratory species associated with Lake Woods and surrounding wetlands must be described • the existing condition of habitat and vegetation communities, including significant and sensitive habitats and potential habitats for threatened species listed under TPWC Act and EPBC Act must be described along with any existing threatening processes • identification of flora and fauna that hold social, cultural, and/or economic values and have the potential to occur, and describe the importance of these species • identification of flora and fauna known or likely to occur that are currently being assessed for eligibility for inclusion or change of conservation status under the EPBC Act. Include in appendices the detailed technical information, studies, or investigations necessary to support the draft EIS. Justify the suitability of the methods, surveys or processes used to identify/estimate species occurrence (presence/absence), relative abundance, habitat condition or quality, and the extent of values potentially impacted. Data must be provided in appropriate and readable formats (both numeric and spatial) with appropriate metadata to facilitate assessment, and in line with the NT EPA Biodiversity data policy and Biodiversity data guidance.
Potential significant impacts and risks	Identify, describe, and assess potential significant impacts (direct, indirect, and cumulative) of the Proposal on terrestrial ecosystems and identified environmental values in accordance with requirements of the EP Act and EPBC Act. This must include, at a minimum: • direct loss of fauna/flora/ecological communities from vegetation and land clearing and ongoing maintenance (e.g. fire and vegetation management) including significant and sensitive habitats and potential habitats for threatened species listed under TPWC Act and EPBC Act. Provide an overview of the extent (hectares) of the loss in table and map format • identify areas of habitat critical to the survival of listed threatened species, particularly those necessary for activities such as foraging, breeding, roosting, or dispersal. Include areas essential for the long-term maintenance of the species, with consideration of the preservation of species, important populations, key populations for genetic diversity, and efforts related to population reintroduction or recovery • indirect disturbance or degradation to flora/ecological communities, including significant and sensitive habitats, possibly resulting in a long-term decline or loss over time e.g. from erosion, dust, weeds/pathogens, shading from solar panels, disturbance of acid sulfate soils and alterations to

Aspect	Specific information required
	hydrological regimes etc. • direct, indirect and cumulative impacts to the terrestrial ecosystem values provided by Lake Woods, including those resulting from altered surface water flows, groundwater use and sediment transport • habitat fragmentation due to infrastructure development, altered environmental flows and altered floodplain inundation regime • habitat degradation for species of conservation significance, e.g. due to noise, light, vibration, dust, weeds, fire, runoff, erosion, sedimentation impacts • introduction or increase of weed and pest species due to construction, operation or maintenance activities • direct impacts to fauna as a result of collision with vehicles or equipment, including solar panels • changes to fauna behaviours as a result of heat, noise, vibration or light emissions from Proposal areas • potential glint and glare from solar panels, including an assessment of the risk of the 'lake effect' (where the solar panels are mistaken for a water body) for migratory and waterbird populations, based on information on flight paths and movement corridors. The risk assessment of the lake effect needs to account for the cumulative development of solar array facilities in the region • potential changes to fire regimes in the Proposal area • how the assessment of potential significant impacts on terrestrial ecosystems has taken the impacts of a changing climate into account. Identify other industries and proposed actions near the Proposal area that are likely to contribute to cumulative impacts on terrestrial ecosystems, including threatened species and habitats. Identify other supporting actions on which this Proposal is dependent, that will contribute to the indirect and cumulative impacts of this action on terrestrial ecosystems. Include consideration of supporting infrastructure such as the gas pipeline and fibre optic cables outside of the boundary of the proposed action. Where uncertainty remains, demonstrate how the precautionary principle has been applied (section 19 of EP Act). Quantify the significance and extent of impacts, at the Proposal level and cumulatively.
Avoidance, mitigation, and management	Outline the proposed measures to avoid, mitigate and manage the potential significant impacts identified above, with consideration of sections 26 (environmental decision-making hierarchy) and 27 (waste management hierarchy) of the EP Act, and measures to enhance or restore environmental quality. Identify areas of land that will be excluded from development due to the presence of extreme constraints that cannot be overcome, and other measures to avoid, mitigate and manage the potential significant direct and indirect impacts on areas of high biodiversity value and sensitive and significant vegetation communities.

Aspect	Specific information required
	The measures should address at a minimum: • facility design, location and layout • infrastructure corridor alignments • clearing of native vegetation • pest/weed/pathogen control and management • specific measures for reducing the risk of potential "lake effect" impacts • compliance with any statutory or policy basis for the proposed measures • fauna relocation and management[1] Where fauna relocation or translocation is proposed, evidence from previous successful programs involving the target species must be provided. In the absence of such studies, an assessment of the species' ecology, including population density, habitat requirements, known threats, and key biological traits must be used to demonstrate the likelihood of successful relocation and to identify associated risks. Avoidance and mitigation and management measures must be evidence based and in accordance with available guidance, including advice from relevant Commonwealth and NT Government advisory agencies. Demonstrate that proposed infrastructure has been designed and appropriately sited to avoid and mitigate impacts to terrestrial ecosystem values. If the siting of elements of the Proposal cannot avoid or mitigate impacts to terrestrial ecosystem values (i.e. threatened species habitat) provide a justification for why this was not feasible. The avoidance, mitigation and management measures proposed must include environmental objectives, performance criteria, monitoring and reporting methods, corrective actions, assigned responsibilities and timeframes for implementation and review in accordance with DCCEEW's Environmental Management Plan Guidelines and relevant NT Government and NT EPA guidance. Describe any proposed measures to enhance or restore environmental quality through restoration or rehabilitation of areas impacted by the Proposal in line with section 42 of the EP Act. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Outline proposed monitoring and reporting activities related to potential significant impacts and risks to terrestrial ecosystems, and mitigation and management measures. For any potential significant impact, thresholds must be set and

[1] Fauna relocation and translocation is not considered to be an appropriate mitigation measure. Should this be proposed, the approach must follow the Policy on the translocation of native wildlife for conservation in the Northern Territory and Guidelines for the translocation of native wildlife for conservation in the Northern Territory

Aspect	Specific information required
	mitigation measures described, should thresholds be met or exceeded. Describe clear and measurable indicators, outcomes and commitments that will ensure the NT EPA's environmental objective for terrestrial ecosystems will be met and impacts of implementing the Proposal remain acceptable. Specify the timeframes and timing for monitoring and reporting. The proposed monitoring and reporting must specify which Proposal phase it relates to (i.e. construction, operation and decommissioning). All monitoring activities must be substantiated and in accordance with available guidance, including advice from relevant Commonwealth and NT Government advisory agencies, potential Native Title holders, Traditional Owners/Custodians, and/or their representatives.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.
Offsets	Where significant residual impact to terrestrial ecosystem values, including listed species under the EPBC Act and/or TPWC Act, remains (after proposed avoidance and mitigation measures have been applied), identify any proposed offset and describe how it is consistent with the NT Offset Framework and the EPBC Act environmental offsets policy. This must include offset options and feasibility.

2.8.4. Hydrological Processes

Table 6: Minimum information required for assessment of Hydrological processes

Aspect	Specific information required
NT EPA objective: Protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	
Environmental values	Describe existing climate characteristics, evaporation and rainfall patterns in the Proposal area (including magnitude and seasonal variability) relevant to the hydrological and hydrogeological assessment. Describe the characteristics, nature and condition of the catchment areas and the existing surface water systems of the Proposal area and potentially affected area that includes an assessment of: • the waterways and water features (e.g. rivers, creeks, waterholes, wetlands, and sinkholes) that would potentially be impacted by the proposed action, and the interaction between surface water and groundwater • surface water flow characteristics, (e.g. velocity, direction, height, inflow/outflow areas and their variability), seasonal flow patterns, flow volumes, duration, frequency and timing, connectivity, magnitude of flow • the quantity, quality and significance of surface water resources and related values, considering the potential impacts of the Proposal on changes to stream flows, overland flow, flooding regimes and sediment transport

Aspect	Specific information required
	processes • the history of flooding including frequency, duration, extent and levels, and the frequency and duration of floodplain/wetland inundation • the hydrological connectivity between the drainage systems and intermittent creeks affected by the proposed action, and Newcastle Waters and Lake Woods. Describe the existing groundwater systems, and the quantity, quality and significance of groundwater resources and related values of the Proposal area and area of influence that includes: • the known location, magnitude, extent and type of aquifers at and near the Proposal extraction location, geology, hydrogeology of aquifers, aquifer depth and thickness, stratigraphy, depth to water level, groundwater flow rate and directions, and seasonal variation in levels • subterranean habitat of the affected aquifer, recognising the role of stygofauna in ecosystem processes and maintaining water quality • a hydrogeological conceptual model for the potentially affected area describing the characteristics and condition of existing groundwater and flow systems, recharge and discharge processes, the location and extent of springs and other groundwater dependent ecosystems, and the interconnectivity between the surface water and groundwater regimes • the capacity of target aquifers to provide the required volumes of water at the expected usage rate with consideration to the proximity of existing groundwater users to the proposed action, current groundwater uses, existing extraction rates and volumes, groundwater proposed to be used by the Proposal (including a description of the quality, quantity, usage rate and proposed location of those resources). Describe and assess the existing physical, chemical and water quality characteristics of water features (e.g. rivers, creeks, waterholes, wetlands, and sinkholes) present in the potentially affected area. This must include, at a minimum: • consideration of rainfall, soils/geological characteristics, seasonal environmental flow patterns (including for waterholes, wetlands and sinkholes), and land use. Provide a description of the existing regulatory framework for surface water and groundwater resources relevant to the proposed action, including any water allocation policies and plans. Identify water resources needed for construction and operational purposes and their source. Provide a water use assessment to support the construction and operational stages of the proposed action; this should include calculations of water requirements for different components of each stage of the Proposal (water use and need) and demonstrating the proposed quantities for extraction from groundwater resources. Evaluate the long-term supply and dependability of the proposed water source and assess how the Proposal may affect water quality and natural drainage (directly

Aspect	Specific information required
	impacting the proposed action's water source). Describe the need for any water treatment. Describe proposed water storage methods and quantities. Identify sources, quantities and quality of wastewater and proposed disposal methods. Identify any land uses and declared beneficial uses of water in the potentially affected area that could be directly or indirectly affected by impacts on hydrological processes caused by the proposed action.
Potential significant impacts and risks	Identify, describe, model and assess the potential direct, indirect and cumulative impacts of the Proposal on surface and groundwater systems. This must include at a minimum: • impacts on the natural basin, catchment, and surface hydrology from vegetation and land clearing and construction activities, including potential changes to overland flows, drainage lines (e.g. diversions), stream flows, and impacts on existing water users including the environment • impacts on hydrogeological processes within and around the catchment from vegetation and land clearing and construction activities, including potential changes to local groundwater levels, flows, spring discharges, transmissivity and impacts on existing water users • changes to connected groundwater dependent water systems (including springs and seeps) • potential for waterlogging (water table rise) and soil degradation to occur • an assessment of the nature, extent and risk of impacts associated with sediment transport and altered water regimes on Lake Woods. Identify, describe, and assess the possible sources of water contamination (e.g. erosion and sedimentation acid forming, saline, sodic or dispersive soils if present, spills or discharges of hazardous materials) Provide a hydraulic and hydrological analysis (flood impact assessment) that: • demonstrates the design flood peak discharges for the Proposal area including baseline and operational scenarios for all flood and stormwater events up to a 1% Annual Exceedance Probability (AEP), and Probable Maximum Flood • models the extent of flooding across the catchment area to the points at which no significant impact occurs. Flood studies are to include a range of annual exceedance probabilities. Use hydrographs to represent flood levels at different locations • uses best practice data analysis and hydrological and hydraulic modelling to simulate a full range of flood events (baseline hydrology) and provides site-specific baseline data and historical data to assess seasonal, long-term and extreme variations in flooding • assesses how the Proposal may change flooding characteristics (upstream and downstream) taking into consideration climate change scenarios and climate change impacts on flooding

Aspect	Specific information required
	• includes maps (flow, water level/depth and velocity) to clearly illustrate the baseline and operational scenario impacts for all relevant design events • considers all infrastructure associated with the Proposal including roads and linear infrastructure and proposed measures to avoid or mitigate impact to people, property (including damage to other properties), and the environment during flood events • details how design and management of all stages of the Proposal will mitigate potential impacts on level of flood risk (upstream and downstream). Demonstrate that models used for the assessment of impacts to hydrological processes have adequate resolution and extent for simulation of catchment-wide impacts as well as localised impacts. Ensuring fit-for-purpose groundwater modelling that is distinct from but connected with, any surface water modelling. Report on assumptions and parameters used in the model, justification for their use and predictive uncertainty. Discuss the sensitivity of input parameters and critical assumptions, and how this may change predictions. Describe how the Proposal area and area of disturbance has been defined in models, as it relates to the hydrology of groundwater and surface water systems. Describe how ground truthing of predicted impacts will be carried out over the life of the proposed action. Describe and discuss how the Proposal area and potentially affected area has been considered in the site selection process and evaluation of alternatives, as it relates to the hydrology of groundwater and surface water systems. Assess the cumulative impacts of the Proposal with other industries or proposed actions against the Georgina Wiso Water Allocation Plan and with respect to impacts on hydrological process, groundwater-dependent ecosystems, and aquatic ecosystems. Consult with relevant government agencies (e.g. NT Water Resources Division, NT Flora and Fauna Division and Commonwealth Department of Climate Change, Energy, the Environment and Water) and demonstrate how their feedback has been considered and/or adopted in relation to modelling methods and characterisation of scenarios for predictions. Describe any uncertainties and further work undertaken to increase understanding of potential significant impacts and reduce uncertainty. Where uncertainty remains, demonstrate how the precautionary principle has been applied (section 19 of EP Act). Modelling must undergo a process of independent review by an appropriately qualified expert. The review must form part of the EIS.
Avoidance, mitigation, and management	Outline the measures for avoiding or mitigating impacts identified above, with consideration of section 26 (Environmental decision-making hierarchy) and section 27 (Waste management hierarchy) of the EP Act and ensure that measures to enhance or restore environmental quality are included. Describe measures to avoid and mitigate potential significant impacts of vegetation and land clearing on hydrological processes e.g. waterlogging and its effect on floodplains/wetlands, riparian areas, groundwater dependent ecosystems and

Aspect	Specific information required
	waterways. These should address at a minimum: • facility design, locations and layout • water demand and management, including stormwater and wastewater management • erosion and sediment control • compliance with any statutory or policy basis for the proposed measures. Outline the management plans and adaptive management strategies including trigger action response plans that would be implemented, and specify the associated performance indicators, timeframes for implementation, and the roles and responsibilities of the personnel involved. Discuss potential impacts of a changing climate with respect to the vulnerability of hydrological resources for the Proposal, including design. Outline adaptation measures to address potential impacts. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Provide details on proposed monitoring and reporting related to potential impacts and risks to hydrological processes. Describe the framework to monitor the effectiveness of proposed management measures, including timeframes and key performance indicators for implementing the proposed measures. Describe clear and measurable outcomes and commitments, indicators, trigger values and limits that will be used for monitoring, and how adaptive management actions will be initiated. Describe which Proposal phase the proposed monitoring and reporting relates to (i.e. construction, commissioning, operations, decommissioning). Specify the timeframes for monitoring and reporting. Demonstrate that proposed monitoring locations in the potentially affected area (e.g. bores, designated monitoring areas) are appropriately sited to monitor relevant events.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.

2.8.5. Inland Water Environmental Quality

Table 7: Minimum information requirements for assessment of Inland water environmental quality

Aspect	Specific information required
NT EPA Objective: Protect the quality of groundwater and surface water so that the environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	
Environmental values	Describe the water quality (chemical, physical and biological) of surface water and groundwater in the potentially affected area. Provide results and interpretation of any hydrological and hydrogeological surveys of the area of influence.
Potential significant impacts and risks	Describe potential impacts to inland water environmental quality associated with the proposed construction and operation activities and development, including: • localised erosion from ground disturbance and sedimentation • surface water flow changes • exposure to ASS or PASS • the use and storage of fuels and hazardous materials • contamination from electronic waste associated with the datacentre, solar array and BESS facilities • water treatment methods • management and discharge of wastewater Determine the Proposal footprint and potentially affected area that could feasibly experience those impacts. Provide an assessment of potential impacts, benefits and risks to inland water environmental quality utilising outcomes of investigations and/or other relevant information. As a minimum, the assessment should take into consideration: • methods, equipment, timing and frequency • potential contaminants/pollutants • cumulative impacts with other industries or proposals • environmental management requirements associated with seasonal weather, extreme weather conditions such as storms and cyclones for the 2, 10 and 100 year average recurrence interval events • the physical and chemical characteristics, volume, timing and location of any discharges • the reversibility of impacts. The assessment must take into account all construction and operation activities of the proposed action. The assessment must identify potential impacts and risks to inland water environmental quality and quantify their significance: • against relevant guideline thresholds including ANZG 2018 • on the beneficial uses, water quality objectives and identified environmental values.
Avoidance, mitigation, and management	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. Also include here measures to enhance or restore environmental quality. These should

Aspect	Specific information required
	address at a minimum: • facility design and layout • water management and efficiency, including stormwater and wastewater management • waste management including a detailed description of management methods for all types of wastes, including end-of-life panels and batteries • storage of fuels, hazardous materials, firefighting foams and appropriate spill management procedures • erosion and sediment control • compliance with any statutory or policy basis for the proposed measures. Discuss adaptation to a changing climate including design and resultant viability of the proposed action. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Outline proposed monitoring and reporting activities related to potential impacts, risks, mitigation and management measures. The proposed monitoring and reporting should specify which Proposal phase it relates to, i.e. construction or operations. All monitoring activities should be substantiated and in accordance with best practice advice from relevant NTG advisory agencies.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.

2.8.6. Aquatic Ecosystems

Table 8: Minimum information required for assessment of Aquatic ecosystems

Aspect	Specific information required
NT EPA Objective: Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	
Environmental values	Describe the aquatic ecosystems and groundwater dependent ecosystems in the potentially affected area, including a description of Lake Woods and its values. Describe the habitat value of groundwater systems for stygofauna and their contribution to ecosystem health

Aspect	Specific information required
	Provide detailed maps to support the above descriptions. Provide results and interpretation of any aquatic ecology surveys of the area of influence.

Potential significant impacts and risks	Describe potential impacts to aquatic ecosystems associated with the proposed construction and operation activities and development, including:
	• direct and indirect disturbance to waterways and/or wetlands and associated ecological and hydrological values during construction and operation of the proposed action, including:
	  ○ construction of infrastructure, where in proximity to waterways/wetlands, e.g. sedimentation, erosion, uncontrolled runoff
	  ○ heat island effects from the proposed action, particularly on the values of Lake Woods
	  ○ installation of bores
	  ○ exposure to contaminants.
	Determine the Proposal footprint and potentially affected area that could feasibly experience those impacts.
	Provide an assessment of potential impacts, benefits and risks to aquatic ecosystems utilising outcomes of investigations and/or other relevant information. As a minimum, the assessment should take into consideration:
	• methods, equipment, timing and frequency
	• cumulative impacts with other industries or proposed actions
	• the reversibility of impacts.
	The assessment must take into account all construction and operation activities of the proposed action.
	The assessment must identify potential impacts and risks to aquatic ecosystems and quantify their significance:
	• against relevant guideline thresholds
	• on the beneficial uses, water quality objectives and identified environmental values including groundwater dependent ecosystems and existing ground and surface water users.

Avoidance, mitigation, and management	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. Also include here measures to enhance or restore environmental quality. These should address at a minimum: • facility design, location and layout • waste and hazardous material storage and management • erosion and sediment control • compliance with any statutory or policy basis for the proposed measures. Discuss the potential impact of the changing climate increasing the vulnerability of aquatic ecosystem values and the resilience of aquatic ecosystems to additional

Aspect	Specific information required
	impact and pressure from the proposed action. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies.
Monitoring and reporting	Outline proposed monitoring and reporting activities related to potential impacts and risks and mitigation and management measures to aquatic ecology. The proposed monitoring and reporting should specify which Proposal phase it relates to, i.e. construction or operations. All monitoring activities should be substantiated and in accordance with best practice advice from relevant NTG advisory agencies. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.

2.8.7. Air Quality

Table 9: Minimum information required for assessment of Air quality

Aspect	Specific information required
NT EPA Objective: Protect air quality and minimise emissions and their impact so that environmental values are maintained.	
Environmental values	Describe and map the location of sensitive receivers within and in proximity to the Proposal area. Describe the existing air quality environment. Identify existing emission sources within the Barkly region that contribute to ambient pollution, in particular sources required to report emissions under the National Pollutant Inventory, and the types and quantities of pollutants emitted, and air toxics emitted. Describe any sources of emissions which could impact on air quality. Describe any information gaps or uncertainties in relation to air quality, including any further studies required to address these gaps.
Potential significant impacts and risks	Identify how air quality will potentially be impacted by implementing the Proposal for all power scenarios, including worst-case energy configuration and for the life of the Proposal. Provide an emissions inventory (in alignment with section 6 of the Guidance for Modelling Dispersion of Air Pollutants in the NT) including source type, location, pollutants emitted, and their emission rates of all phases of the proposed action.

Aspect	Specific information required
	The inventory must consider emissions from construction through to decommissioning and upset conditions which require venting of gas. The inventory must also consider all feasible scenarios regarding the renewable energy transition, including no transition. The emissions inventory must address all pollutants relevant to the National Pollution Inventory, the National Environment Protection (Ambient Air Quality) Measure and the National Environment Protection (Air Toxics) Measure. Identify, describe and assess the potential impacts of the Proposal and cumulative impacts on air quality in the Barkly region from air pollutants including but not limited to: • nitrogen oxides • carbon monoxide • volatile organic compounds, including BTEX • particular matter (PM_{10} and $PM_{2.5}$) Describe the potential impacts to air quality associated with all phases of the proposed action. The assessment must take into account seasonal meteorological variations of the Barkly region. The assessment must be informed by appropriate air quality and pollutant dispersal modelling that incorporates background baseline air quality and air shed capacity for pollutants relevant to the full context of the proposed action. Dispersion modelling is to be consistent with the Guidance for Modelling Dispersion of Air Pollutants in the NT. Pollutant dispersal modelling results for all scenarios must be provided in the form of pollutant contour maps that clearly depict: • the sources of the emission being modelled • ground level concentration contours in $\mu g/m^3$ and include a contour for the criteria limit • the boundary of the Proposal and associated infrastructure • the location of human sensitive receptors including the onsite worker accommodation areas • the location of environmental values such as sacred sites, culturally significant sites, sensitive vegetation, groundwater recharge areas and areas of high biodiversity. Include detailed technical information, studies or investigations (including data) necessary to support the draft EIS in appendices. Justify the suitability of the methodologies, surveys or processes used to establish baseline air quality data, forecast emissions and model pollutant dispersal. Address information gaps or uncertainties in relation to air emissions, including further studies or measures completed to address these gaps. In accordance with section 9 of Guidance for Modelling Dispersion of Air Pollutants in the NT for modelling dispersion of air pollutants: • assess the extent to which sensitive receptors could be directly or indirectly affected by air emissions • identify the areas that could feasibly experience direct, indirect and

Aspect	Specific information required
	cumulative impacts and assess the severity of impacts to identified values. Identify the uncertainties and provide a detailed description of how uncertainties would be addressed, such as through an adaptive management approach, improved alternative technologies, incorporating baseline studies, monitoring and staging. Where uncertainty remains, demonstrate how the precautionary principle will be applied (section 19 of EP Act). If there is the potential for significant emissions, a Level 2 air quality impact assessment is likely to be required in accordance with the Guidance for Modelling Dispersion of Air Pollutants in the NT. Modelling must undergo a process of independent review by an appropriately qualified expert. The review must form part of the EIS.
Avoidance, mitigation, and management	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. Also include here measures to enhance or restore environmental quality. These should address at a minimum: • facility design and layout • construction methods • emission suppression or management measures • compliance with any statutory or policy basis for the proposed measures. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies. Outline the measures for avoiding or mitigating the impacts identified above, with particular consideration of sections 26 (Environmental decision-making hierarchy) and section 27 (Waste management hierarchy) of the EP Act. Avoidance, mitigation and offset measures must be developed with consideration given to the following: • design and layout of the proposed action • best available technology • emission avoidance, mitigation or management measures • compliance with any statutory or policy basis for the proposed measures. Identify how air emissions will be avoided over the life of the proposed action. Identify the controls that will be implemented as part of the Proposal and their effectiveness to avoid, mitigate and manage air emissions. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant government advisory agencies.
Monitoring and reporting	Outline any proposed monitoring and reporting activities related to potential impacts (including cumulative) and risks, and mitigation and management measures. The proposed monitoring and reporting should specify which Proposal phase it

Aspect	Specific information required
	relates to, i.e. construction, operations, upset conditions. All monitoring activities should be substantiated and in accordance with best practice advice from relevant NTG advisory agencies. Describe clear and measurable outcomes and commitments for the protection and enhancement of environmental values that could be impacted by air quality and emissions.
Residual impact	Assess the significance of any residual impact or risk of the Proposal to identified values.

2.8.8. Atmospheric Processes

Table 10: Minimum information required for assessment of Atmospheric processes

Aspect	Specific information required
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.	
Environmental values	Assess the trends and future demand for renewable energy in the NT, and discuss how implementing the Proposal will benefit local and regional communities and the environment in the NT. Describe and assess the GHG emissions that would be generated by implementing the Proposal and discuss the potential effect of the Proposal on the scale, magnitude, and trajectory of GHG emissions in the NT.
Potential significant impacts and risks	Provide estimates of the proposed action's Scope 1 and Scope 2 GHG emissions in accordance with section 6 of the NT EPA Atmospheric Processes Environmental Factor Guidance, with a clear emission breakdown by activity, Proposal phase, financial year, and for the total life of the proposed action. This should also clearly identify and quantify emissions from land clearing activities. Estimates should also consider alternative power scenarios including worst-case energy configuration. Describe the proposed action's: • contribution to the NT and national emissions, including a comparison between the proposed action's emissions and current NT and Australian emission levels (as reported in Australia's National Greenhouse Accounts and against Australia's emission targets) • influence on the Australian Government's target of net zero greenhouse gas emissions by 2050 being achieved • impact on renewable energy supply in the NT, including how the Proposal improves renewable energy availability and supports national renewable energy targets Quantify the significance and extent of impacts, at the Proposal level and cumulatively, with use of and reference to relevant guideline thresholds.

Aspect	Specific information required
Avoidance, mitigation, and management	Describe any energy efficiency and mitigation and management measures that will be adopted during the design, construction, commissioning and operation phases of the Proposal to reduce or minimise GHG emissions to as low as reasonably practicable, and that demonstrate application of best practice - so as to contribute to the NT's target of net zero by 2050. Describe any proposed measures that will avoid, mitigate and offset scope 1 emissions and, if applicable, scope 2 emissions associated with the clearing event and gas-fire power generation facility. Demonstrate that the proposed timing of the transition to renewable-powered operations is planned to minimise overall GHG emissions from the proposed action.
Monitoring and reporting	Outline the proposed monitoring of emission reduction strategies to demonstrate that all reasonable and practicable measures have been, and will continue to be, applied to minimise the proposed action's emissions over time. Monitoring approaches should include an evaluation of the effectiveness of measures taken to manage emissions as well as any opportunities to improve emissions reduction management. Identify whether the Commonwealth *National Greenhouse and Energy Reporting Act 2007* Safeguard Mechanism obligations apply to the proposed action.
Residual impact	Describe the net contribution to the NT's GHG over the life of the proposed action. Assess the significance of any 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 any proposed GHG emission offsets and describe how any proposed offset is consistent with the Northern Territory Offsets Framework (as published) and NT Greenhouse Gas Emissions Offsets Policy.

2.8.9. Community and Economy

Table 11: Minimum information required for assessment of Community and economy

Aspect	Specific information required
NT EPA objective: Enhance communities and the economy for the welfare, amenity, and benefit of current and future generations of Territorians.	
Environmental values	Identify and describe the existing social and economic profiles, and the social and economic values and sensitivities, which could be affected by the proposed action, including reference to: • social values as identified by stakeholders • demographics, including skills audit of affected communities and workforce characteristics

Aspect	Specific information required
	• relevant accommodation type and quantity within the region • existing pressures on services and resource availability in the region • existing and required local businesses relevant to supply chain, construction and operation • primary economic characteristics within the region • the economic value of water in the region • primary employment source/s of townships/cities/communities within or in proximity to the Proposal • proximity to existing infrastructure and associated operators (e.g. rail, gas pipeline, cables etc.) • social amenity and use of the Proposal area and adjacent areas for other purposes, including, residential, commercial, industrial, recreational/leisure, tourism, and traditional land use.
Potential significant impacts and risks	Identify, describe, model and assess the potential significant social and economic impacts, along with the social and economic benefits, associated with the Proposal for the local, regional and NT community and economy, with reference to relevant principles of ecologically sustainable development (sections 17 – 24 of the EP Act). Provide an economic and social impact assessment in accordance with the NT EPA Guidelines for Economic and Social Impact Assessment including assessment of potential impacts, benefits and risks to local communities and the economy utilising modelling, outcomes of investigations, and/or other relevant information. The assessment must describe the significance of potential impacts and risks to communities and the economy. The assessment of each aspect should consider cumulative impacts and the reversibility of impacts. Demonstrate that the assessment of the economic and social impacts and benefits of the Proposal is informed by an inclusive and collaborative community and stakeholder engagement and consultation process, including consultation with any relevant land users and appropriate Traditional Owners/Custodians. Describe any uncertainties and further work required to improve understanding of potential significant impacts and reduce uncertainty. Where uncertainty remains, demonstrate how the precautionary principle has been applied (section 19 of EP Act). Describe the significance and extent of impacts, at the proposal level and cumulatively, with use of and reference to relevant guideline thresholds. The significance and the extent of potential impacts must be described in a manner that enables the proponent to demonstrate that proposed avoidance, mitigation and management measures can: • maximise economic benefits • minimise economic costs

Aspect	Specific information required
	• maximise social benefits • minimise social costs. Describe and model, if appropriate, the potential operational impacts associated with noise, vibration and light on sensitive receptors, including the Murranji Station homestead as well as onsite worker accommodation areas.
Avoidance, mitigation, and management	Describe measures to avoid, mitigate and manage potential significant social and economic impacts, and to enhance benefits to the community and economy, over the life of the Proposal (consider section 6.5 of the NT EPA Guidelines for Economic and Social Impact Assessment). Describe how the views of stakeholders have been considered in proposed avoidance, mitigation and management measures. All mitigation measures should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies. Describe how noise, vibration and light impacts have been avoided or mitigated through placement, best practice and design. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Outline proposed monitoring and reporting activities related to potential significant impacts and benefits and that will be used to demonstrate and measure how enhancement of the community and economy is achieved. The proposed monitoring and reporting should specify the Proposal phase it relates to (i.e. construction or operation) and be substantiated and in accordance with best practice advice from relevant NTG advisory agencies.
Residual impact	Assess the significance of any residual impact or risk to identified values and the NT economy, and the acceptability of the residual impact to stakeholders.

2.8.10. Culture and Heritage

Table 12: Minimum information required for assessment of Culture and heritage

Aspect	Specific information required
NT EPA objective: Protect culture and heritage	
Environmental values	Identify the local Aboriginal communities and traditional owners within (or in proximity to) the Proposal area and any native title claims. Undertake independent studies that include surveys to identify, describe and characterise • Aboriginal sacred sites (as defined by the *Northern Territory Aboriginal Sacred Sites Act 1989* and/ or the *Aboriginal Land Rights (Northern Territory) Act 1976*)

Aspect	Specific information required
	• Heritage places and objects (as defined by the *Heritage Act 2011*) Provide outcomes of consultations and independent investigations undertaken to inform cultural landscape mapping that identifies: • cultural values associated with any native title claim applications and determinations in potentially affected areas outside the immediate Proposal area • cultural practice areas • environmental values and areas important under Aboriginal tradition. Justify the suitability of methods used to conduct studies, surveys and investigations to identify cultural heritage values. Results of studies undertaken are to inform the information provided in the EIS (e.g. archaeological and anthropological investigations and surveys, statutory/regulatory processes, consultations and other research). Provide maps showing the location and extent of cultural heritage values within the Proposal area (including sacred sites, heritage places and objects, Traditional Owner land and cultural practice areas). The maps of cultural heritage values must include the location and boundaries of each component of the proposed action. Discuss the Commonwealth and NT legislation relevant to the identified culture and heritage values. Describe any gaps, uncertainties and further work required to improve understanding of cultural heritage values and reduce uncertainty.
Potential significant impacts and risks	Describe and assess the potential for impacts on: • Aboriginal sacred sites (defined by the *Northern Territory Aboriginal Sacred Sites Act 1989* and/or the *Aboriginal Land Rights (Northern Territory) Act 1976)* • Aboriginal cultural heritage places and objects (e.g. artefact scatters, shell middens, earth mounds, quarries, stone arrangements, petroglyphs, rock shelters, rock art, etc.), noting that all Aboriginal archaeological places are automatically protected, and that any proposed works to impact a protected place can only occur with an approved works approval. Assess: ○ the risk of discovery of unexpected finds of heritage places and objects, or ancestral remains ○ the likelihood of requiring a works approval under the *Heritage Act 2011* to disturb, relocate or remove heritage objects within the Proposal area. • cultural values (as defined by cultural landscape mapping investigations and studies), including: ○ the potential cumulative impacts on cultural values from the proposed action ○ intergenerational impact on connection and access to cultural values. Include, at a minimum, an assessment of:

Aspect	Specific information required
	• direct and indirect disturbance during construction, operation, decommissioning and maintenance activities including vegetation clearance, topsoil stripping, subsoil excavation, changes to landforms and impacts to groundwater dependent ecosystems • change or permanent land use restrictions in areas of Proposal infrastructure • the duration, magnitude, and extent of potential impacts to cultural values • the extent of any temporary or permanent land access or use restrictions for cultural practices • impacts to cultural and heritage values resulting from the cumulative scale of development within the region. Discuss the legislative framework and statutory decision-making processes in place to protect cultural heritage values. Provide details of consultation with the Aboriginal Areas Protection Authority, DLPE Heritage Branch, Traditional Owners and their representatives regarding potential impacts to sacred sites, heritage places and objects, and values identified through cultural landscape mapping. Information is to include the identification of participants and results of consultation. Provide an Authority Certificate (if one has already been obtained) or clarify if an application has been made under the *Northern Territory Aboriginal Sacred Sites Act 1989* (Sacred Sites Act) that covers the Proposal area and proposed activities during all phases of the Proposal (i.e. construction, operation and decommissioning). Present information in accordance with the wishes of Aboriginal stakeholders regarding the confidentiality of cultural information and traditional knowledge, noting the proponent may request that identified information not be made public in accordance with section 281(2)(b) of the EP Act. Describe any uncertainties and further work required to improve understanding of potential impacts and reduce uncertainty. Where uncertainty remains, demonstrate how the precautionary principle has been applied (section 19 of EP Act).
Avoidance, mitigation, and management	Outline the measures for avoiding and mitigating the impacts identified above, with consideration of section 26 (environmental decision-making hierarchy) and section 27 (waste management hierarchy) of the EP Act. Outline the approach to ongoing consultation and engagement with traditional owners/representatives to ensure appropriate management of cultural values identified through the cultural landscape mapping process. Provide a cultural heritage management plan (CHMP) that identifies and describes the measures that will be implemented to avoid and reduce impacts to identified cultural heritage, including but not limited to: • measures to protect, and avoid entry to sacred sites e.g. sacred sites clearance, an Authority Certificate • strategies to avoid disturbance and damage to Heritage Places protected under the *Heritage Act 2011* (noting all Aboriginal and Macassan archaeological places are automatically protected, including unknown sites)

Aspect	Specific information required
	• any requirement to obtain approval under the *Heritage Act 2011* to carry out work on a heritage place or object • strategies to reduce impacts to all identified cultural heritage values during construction, commissioning, and operation • strategies for the identification and management of unexpected Aboriginal archaeological finds (additional to those identified in the EIS). Provide evidence that relevant Aboriginal representative bodies and other Aboriginal peoples have been consulted in the drafting of the CHMP. All mitigation measures included in the CHMP should be substantiated and in accordance with best practice, including advice from relevant NTG advisory agencies and traditional owners. To support transparency and assessment of outcomes, consideration should be given to describing proposed avoidance, mitigation and management measures in a manner consistent with the SMART framework.
Monitoring and reporting	Outline proposed methodology and timeframes for monitoring and reporting against the CHMP. The proposed monitoring and reporting must specify which phase of the Proposal it relates to (i.e. construction, commissioning, operation and decommissioning). Explain how the proposed monitoring and reporting responds to advice from relevant government advisory agencies, Native Title holders, Traditional Owners, and/or their representatives. Describe clear and measurable outcomes and commitments for the protection of cultural values identified through the cultural landscape mapping investigations.
Residual impact	Determine whether there are likely to be any significant residual environmental impacts or risks to identified cultural heritage values.

3. Other requirements

3.1. Matters of national environmental significance (MNES)

The EPBC Act provides for the Commonwealth to accredit NT EPA assessments of proposed actions under the EP Act. The Proposal was referred and was determined to be a controlled action, with the following relevant controlling provisions:

- Listed threatened species and communities (section 18 and 18A)
- Listed migratory species (sections 20 and 20A).

The Proposal is being assessed as a bilateral assessment in accordance with the EPBC Act and agreement between the NT EPA and the Commonwealth and the EIS must address matters outlined in Schedule 4 of the EPBC Regulations. In addressing all relevant MNES, include the following details:

- a list of any matter protected by the controlling provisions that are known or likely to occur within the Proposal site according to the Protected Matters Seach Tool. A minimum buffer of 5 km should be applied, the buffer should reflect direct and indirect PMST (using a minimum buffer of 5km)

- a list of the relevant policy and guidance for the MNES
- discussion of the protected matters listed above addressing whether or not the impacts are significant
- the discussion on protected matters should address uncertainty (where applicable) and in the absence of information about impacts, a precautionary approach should be applied and the maximum potential impact assumed
- a significant impact assessment for the relevant protected matters using the DCCEEW Significant Impact Guidelines 1.1 to determine the level of significance of the impact on the MNES
- a summary of the impacts (direct, indirect and cumulative) on the MNES and provide relevant tables and maps
- description of proposed avoidance and mitigation measures
- how the mitigation hierarchy has been applied
- assurance that avoidance, mitigation and management measures are aligned with the requirements of all EPBC Act relevant policy and guidance
- a summary of whether offsets are required in relation to the MNES and if so, provide details of the proposed offset and how the offset addressed the Australian Government Environmental Offset Policy.

The draft EIS must address all relevant MNES and explain how adequate consideration has been given to the conservation advice for each EPBC Act listed species that are known or likely to be impacted, and Australia's obligations under international conventions and agreements.

The draft EIS must explain how the Proposal is consistent with any guidelines, threat abatement plans, bioregional plans or recovery plans including, but not limited to:

- The Biodiversity Convention
- The Bonn Convention
- EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species
- Wildlife Conservation Plan for Migratory Shorebirds
- Conservation advice for:
  - greater bilby (*Macrotis lagotis*)
  - *northern blue-tongue skink* (*Tiliqua scincoides intermedia*)
  - red Goshawk (*Erythrotriorchis radiatus*)
  - grey falcon (*Falco hypoleucos*)
  - plains death adder (*Acanthophis hawkei*)
  - sharp-tailed sandpiper (*Calidris acuminata*)
  - Australian painted snipe (*Rostratula australis*)
  - common greenshank (*Tringa nebularia*)
  - Mertens' water monitor (*Varanus mertensi*)
  - Mitchell's water monitor (*Varanus mitchelli*)
  - northern brushtail possum (*Trichosurus vulpecula arnhemensis*)

- Recovery plans:
  - greater bilby (*Macrotis lagotis*)
  - Australian painted snipe (*Rostratula australis*)
  - red goshawk (*Erythrotriorchis radiatus*)
- Threat abatement plans:
  - Threat abatement plan for predation by feral cats
  - Threat abatement plan for competition and land degradation by rabbits
  - Threat abatement plan for predation by the European red fox
  - Threat abatement plan for the biological effects, including lethal toxic ingestion, caused by cane toads
  - Threat abatement plan for ecosystem degradation, habitat loss and species decline due to invasion of northern Australia by introduced gamba grass, para grass, olive hymenachne, mission grass and annual mission grass
- The following survey guidelines:
  - Survey guidelines for Australia's threatened bats
  - Survey guidelines for Australia's threatened birds
  - Survey guidelines for Australia's threatened mammals
  - Survey guidelines for Australia's threatened reptiles.

The draft EIS must include a discussion of how the Proposal meets the principles of ecologically sustainable development, as defined under section 3A of the EPBC Act.

3.2. Offsets

Provide details of an overall biodiversity offset strategy for any significant residual impacts of the Proposal on the terrestrial environment. Offsets may be required as a condition of any approval under the EPBC Act. Offsets must be consistent with the NT Offsets Framework, NT Biodiversity Offsets Policy, and the EPBC Act environmental offsets policy.

3.3. Stakeholder engagement and consultation

Proponents have a general duty under section 43 of the EP Act to provide communities and stakeholders that may be affected by a Proposal with an opportunity for consultation to assist community understanding of the Proposal and its potential significant impacts and benefits. If an impact or benefit is uncertain, this must be clearly stated.

The proponent must engage and consult with stakeholders[2] who are affected by and interested in the proposed action. The proponent must document the following in the EIS:

- the proponent's approach to stakeholder engagement and consultation for the life of the proposed action, through provision of a Community and Stakeholder Engagement Plan (CESP), including demonstration that this is consistent with the NT EPA's guidance for proponents: Stakeholder

[2] As defined in the NT EPA Guidance for Proponents - Stakeholder Engagement and Consultation

Engagement and Consultation and aligns with best practice guidance

- a summary of information presented in the referral on consultation, including identified stakeholder groups, issues raised, and adjustments made to the Proposal because of consultation
- details of further stakeholder engagement and consultation undertaken on the Proposal during the EIS phase including:
    - the engagement approach
    - any additional identified stakeholders
    - methods used for communication with stakeholders and how Proposal information was disseminated
    - how stakeholder input was invited
    - how any new information on the potential significant impacts/benefits of the Proposal were communicated (if necessary)
    - issues raised in consultations
- any adjustments to the Proposal because of consultation.

The CESP must include detailed mechanisms for monitoring and evaluating the effectiveness of engagement throughout the life of the Proposal. The monitoring and evaluation framework within the CESP must define:

- Key performance indicators (KPIs) to measure engagement quality, accessibility of information and stakeholder satisfaction.
- A complaints and Grievance Management System, detailing proposed response timeframes and dispute resolution pathways.
- Reporting frequencies for how stakeholder inputs are to be tracked, evaluated and integrated into adaptive environmental management strategies.

The proponent must recognise the role and interests of Aboriginal stakeholders, promote the conservation and ecologically sustainable use of natural resources, and:

- obtain the views of any group of Aboriginal stakeholders directly affected
- promote the cooperative use of Aboriginal stakeholders' knowledge of biodiversity and Aboriginal heritage, and
- where it is appropriate, treat the views of Aboriginal stakeholders as the primary source of information on the value of Aboriginal cultural heritage.

Aboriginal stakeholders must include:

- Native Title claimants (claims under consideration and decided) with Native Title rights and interests within the potentially affected area
- Traditional Owners of land within the potentially affected area.

3.3.1. Aboriginal stakeholders

The draft EIS, including a stakeholder engagement plan, a cultural heritage management plan and an economic and social impact assessment, is to be informed by consultation with stakeholders, including Aboriginal stakeholders. The draft EIS should set out the processes applied to identifying and determining

Aboriginal stakeholders.

The draft EIS is to describe the Aboriginal stakeholders (as defined above) and demonstrate how the proponent has:

- recognised the role of Aboriginal people as stewards of their country
- recognised the rights and interests of Aboriginal stakeholders in the Barkly region, and encouraged their participation in environmental decision-making in relation to the proposed action
- enabled Aboriginal stakeholders (and in particular potentially affected Native Title Holders, Traditional Owners, and Custodians) to make decisions about the Proposal
- engaged with Aboriginal stakeholders in a culturally appropriate manner, using specialist expertise where required
- provided Aboriginal stakeholders with information in appropriate detail, language, and format for understanding of the Proposal and its potential significant impacts and benefits
- promoted the cooperative use of Aboriginal knowledge of biodiversity and Aboriginal culture in environmental decision-making
- treated the views of Aboriginal stakeholders as the primary source of information on Aboriginal cultural values
- discussed options with, and obtained the views of, Aboriginal stakeholders regarding environmental management and cultural heritage management (including environmental monitoring and reporting)
- adopted measures to protect the rights and interests of Aboriginal people in relation to the areas that may be impacted.

3.4. Public consultation requirements

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

3.4.1. 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.

3.4.2. Form and manner for publication

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.

3.4.3. Public consultation locations

The draft EIS is to be made available in hard copy for public consultation during the submission period at:

- NT EPA, Level 1, Arnhemica House, 16 Parap Road, Parap, NT 0820
- Northern Territory Library, 54 Cavenagh Street, Darwin, NT 0800
- Environment Centre Northern Territory, Unit 3, 98 Woods St, Darwin, NT 0800
- Northern Land Council, 45 Mitchell Street, Darwin
- Barkly Regional Council Office, 41 Peko Road, Tennant Creek NT
- Elliott Post Office, Elliott, NT.

4. Appendix A – List of relevant guidance material

The following guidance material, in addition to the guidance material referenced in 3.1 (Matters of national environmental significance) is considered relevant to the TOR. This list is not exhaustive, but captures 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.

Brocklehurst, P. S. et al., 2007. Northern Territory guidelines and field methodology for vegetation survey and mapping. Available at: https://territorystories.nt.gov.au/10070/635994/0

CSIRO 2020. Climate Change in the Northern Territory: State of the science and climate change impacts. https://depws.nt.gov.au/__data/assets/pdf_file/0011/944831/state-of-the-science-and-climate-change-impacts-final-report.pdf

Commonwealth of Australia, 2013. Significant Impact Guidelines 1.1: Matters of National Environmental Significance. Department of Climate Change, Energy, the Environment and Water: https://www.dcceew.gov.au/environment/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance

DCCEEW, 2023. Interim Engaging with First National People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999: https://www.dcceew.gov.au/sites/default/files/documents/interim-engaging-with-first-nations-people-and-communities-assessments-and-approvals-under-epbc-act.pdf

DENR, 2020. Northern Territory Water Allocation Planning Framework. Department of Environment and Natural Resources: https://depws.nt.gov.au/__data/assets/pdf_file/0011/476669/nt-water-allocation-planning-framework.pdf

DLPE, 2026. Land clearing guidelines. Department of Lands, Planning and Environment: Land Clearing Guidelines - Northern Territory Planning Scheme

DENR, 2020. Northern Territory Climate Change Response: Towards 2050. Department of Environment and Natural Resources: https://climatechange.nt.gov.au/nt-climate-change-response/northern-territory-climate-change-response-towards-2050

DEPWS, 2021. Northern Territory Offsets Framework. Department of Environment, Parks and Water Security: https://depws.nt.gov.au/environment-information/northern-territory-offsets-framework/northern-territory-offsets-framework

DEPWS, 2023. Biodiversity Offsets Policy. Department of Environment, Parks and Water Security https://depws.nt.gov.au/__data/assets/pdf_file/0003/1182450/biodiversity-offsets-policy.pdf

Infrastructure Australia, 2021. Guide to economic appraisal. https://www.infrastructureaustralia.gov.au/guide-economic-appraisal

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

Northern Territory Government, 2023. Georgina Wiso Water Allocation Plan 2023-2031 Report 12/2023. Department of Environment, Parks and Water Security, Northern Territory, Australia.

NT EPA, 2025. Waste. https://ntepa.nt.gov.au/your-environment/waste

NT EPA, 2026. Environmental management.https://ntepa.nt.gov.au/publications-and-advice/environmental-management