Hunter Power Project

Construction Environment Management Strategy

| Amended Final

14 February 2022

Hunter Power Project

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Executive Summary

Snowy Hydro Limited has received approval from the NSW Minister for Planning and Public Spaces under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to develop a gas fired power station near Kurri Kurri, NSW. The Project involves the construction and operation of a power station, electrical switchyard and associated supporting infrastructure. The power station is expected to have a generation capacity of up to approximately 750 megawatts (MW), which would be generated via two industrial frame heavy duty F-Class gas turbine units in open cycle gas turbine configuration. The gas turbines will primarily be fired on natural gas with the use of diesel fuel as a backup.

The Project will operate as a "peak load" generation facility supplying electricity at short notice when there is a requirement in the NEM. The Project will connect into Ausgrid's existing 132 kV electricity overhead transmission infrastructure located adjacent to the Project Site.

As part of the approval, a Construction Environment Management Strategy (CEMS) is required prior to the commencement of construction. A CEMS and associated management plans have been prepared to provide an environmental management framework for the construction stage of the Project. The CEMS describes how the Principal Contractor will comply with all statutory environmental requirements, manage potential environmental impacts, and ensure appropriate controls are in place to minimise and prevent risks to the environment.

The CEMS utilises information gathered in the planning phase and carries it through to the operational phase ensuring continuity of relevant environmental information and transfer from the Principal Contractor, subcontractors, and all teams working on the construction stage of the project. The CEMS is supported by management plans in specialist areas to ensure adequate detail is carried through for areas of major environmental risk.

Glossary of terms

Term	Definition
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
Gas lateral	Branch pipeline to connect the main Sydney-Newcastle gas pipeline to the Project Site (not yet built; outside of scope of CEMS)
Principal Contractor	The Contractor engaged by Snowy Hydro Limited, who has management and control over the construction stage of the Project, and who will plan, manage, monitor and coordinate Health, Safety and Environment activities
Project Site	The area of land that is directly impacted on by a development, including access roads, and areas used to store construction materials
Proponent	Snowy Hydro Limited
Secretary	Planning Secretary under the EP&A Act, or nominee
Secretary's Approval	A written approval from the Secretary and/or delegate
Sensitive Receptor	A location where people are likely to work or reside; this may include a dwelling, school, hospital, office, or public recreational area (EPA 2016)

Abbreviations

Abbreviations	Definitions
ACH	Aboriginal cultural heritage
AHD	Australian Height Datum
APZ	Asset Protection Zone
ASR	Acid Sulfate Rock
ASS	Actual or potential Acid Sulfate Soils
BCA	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BFMCs	Bush Fire Management Committees
CEMS	Construction Environmental Management Strategy
CSSI	Critical State Significant Infrastructure
CWMP	Construction Waste Management Plan
dB(A)	Decibel: A-weighted, approximates the sensitivity of the human ear
DECCW	Department of Environment, Climate Change and Water
DPIE	Department of Planning, Industry and Environment
ENM	Excavated Natural Material
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence under the POEO Act
ESCP	Erosion and sediment control plan
GIS	Geographic Information System
GTG	Gas Turbine Generator
ICNG	Interim Construction Noise Guideline
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
LALCs	Local Aboriginal Land Councils
MNES	Matters of National Environmental Significance
NVIA	Noise and Vibration Impact Assessment
OEMP	Operational Environment Management Plan
OOH	Outside of hours; outside recommended standard hours
OSOM	Oversize overmass (heavy vehicle transport)
PHA	Preliminary hazard analysis
PM_{10}	Airborne particulate matter 10 micrometres or less in diameter
$PM_{2.5}$	Airborne fine particles 2.5 micrometres or less in diameter
POEO Act	*Protection of the Environment Operations Act 1997*

Abbreviations	Definitions
ppm	Parts per million
RAP	Remedial Action Plan
RAPs	Registered Aboriginal Parties
RFS	Rural Fire Service
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
SSI	State Significant Infrastructure
TMP	Traffic Management Plan
WM Act	*Water Management Act 2000*

1. Introduction

1.1 Purpose

This Construction Environment Management Strategy (CEMS) and associated management plans have been prepared to provide a framework for the construction stage of the gas fired power station at Kurri Kurri, NSW ('Hunter Power Project', or 'Project). The CEMS will describe how the Project will comply with all statutory requirements, manage potential environmental impacts, and ensure appropriate controls are in place to minimise and prevent risks to the environment. It provides a framework for environmental management and utilises information gathered in the planning stage through to the operational stage to ensure information continuity and transfer between the parties working on each stage of the project. The CEMS is supported by plans in specialist areas to ensure adequate detail is carried through for areas of major project environmental risk.

Implementing the CEMS and associated management plans will ensure the Project meets the Infrastructure Approval conditions of the New South Wales Department of Planning, Industry and Environment (DPIE) and will provide the Principal Contractor and subcontractors on the Project site the guidance needed to mitigate environmental risks and meet or exceed their environmental obligations. The conditions are from the DPIE Infrastructure Approval (refer to Section 9).

1.2 Scope

The CEMS is the principal environmental management document that describes the systems in place to minimise and manage environmental risks associated with the construction of the project. It incorporates all requirements of the EIS, and all relevant licences, permits, and approvals for the project. The Environmental Management Strategy will be developed in a staged manner, this Construction Environmental Management Strategy will be followed by an Operational Environmental Management Strategy.

The CEMS has been prepared in accordance with:

- The Infrastructure Approval (Specifically Conditions C1 – Environmental Management Strategy and C21 – Updating and staging of Studies, Strategies and Plans)
- AS/NZS ISO 14001
- Controls and mitigation measures outlined in the Project EIS (Appendix D)
- *Environmental Management Plan Guideline – Guideline for Infrastructure* Projects (Department of Planning, Industry and Environment, April 2020).

Management plans that are required for construction are appended to the CEMS and sit within the overarching CEMS framework. The management plans, their key content and associated consultation and approval requirements are listed in Table 1-1 and included in the Appendices. Environmental aspects that require management and controls during construction, but are not included in specific management plan, are included within the CEMS and are outlined in Section 8: Environmental .

Table 1-1: CEMS management plan framework

CEMS plans	Key content	Consultation and approval requirements
Water Management Plan (refer to Appendix E)	▪ Surface water quality monitoring ▪ Spill response ▪ Stockpile management ▪ Unexpected, contaminated land and asbestos finds ▪ Groundwater drawdown monitoring ▪ Erosion and stormwater ▪ As required by condition B40	▪ Consultation with EPA NSW, DPIE Water, Hunter Water Corporation and Cessnock Council ▪ Approval by Secretary as part of CEMS ▪ To be prepared by a suitably qualified person endorsed by the Secretary
Air Quality Management Plan (refer to Appendix F)	▪ Dust ▪ Plant/ vehicle emissions	▪ Consultation with EPA NSW ▪ Approval of AQMP by Secretary as part of the overall CEMS
Noise and Vibration Management Plan (refer to Appendix G)	▪ Out of Hours work ▪ Noise and vibration	▪ Consultation with EPA NSW ▪ Approval by Secretary as part of the overall CEMS
Waste Management Plan (refer to Appendix H)	▪ Licences and permits for handling, transportation and disposal ▪ Waste classification	▪ Approval by Secretary as part of the overall CEMS
Biodiversity Management Plan (refer to Appendix I)	▪ Vegetation pre-clearance ▪ Fauna rescue and relocation ▪ Environmental monitoring ▪ Unexpected Finds Procedure ▪ Biodiversity offset settlement process	▪ Consultation with BCS ▪ Approval by Secretary ▪ To be prepared by a suitably qualified and experienced biodiversity expert.
Cultural Heritage Management Plan (refer to Appendix J)	▪ Archaeological monitoring ▪ Unexpected finds ▪ Strategy for managing Aboriginal objects	▪ Consultation with Registered Aboriginal Parties (RAPs) and Heritage NSW ▪ Approval by Secretary ▪ To be prepared by a suitably qualified and experienced cultural heritage expert.
Traffic Management Plan (refer to Appendix K)	▪ Construction parking and access ▪ Drivers code of conduct ▪ Vehicle movement program and monitoring ▪ Dilapidation survey for Hart Road ▪ OSOM requirements	▪ Consultation with Cessnock Council and TfNSW ▪ Approval by Secretary

The CEMS is applicable to the construction stage of the project; details of the construction activities are described in Section 3: Project . While the Operational stage of the project will be managed under a separate OEMP, environmental risks and mitigation measures that may be relevant to both stages are noted to ensure consistency and to aid in the transition between the construction and operational stages.

2. Project description

2.1 Project overview

Snowy Hydro Limited proposes to develop a gas fired power station near Kurri Kurri (Figure 2-1 and Figure 2-2)), NSW. Snowy Hydro has obtained approval from the NSW Minister for Planning and Public Spaces under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Project involves the construction and operation of a power station and electrical switchyard, together with other associated infrastructure (Figure 2-3). The power station is expected to have a generation capacity of up to approximately 750 megawatts (MW), generated by two industrial frame heavy duty F-Class gas turbine units in Open Cycle Gas Turbine (OCGT) configuration. The gas turbines will primarily be fired on natural gas with the use of diesel fuel as a backup.

The major supporting infrastructure required for the Project would be a 132 kV electrical switchyard located within the Project Site. Also required is a new gas lateral pipeline and gas receiving station (which will be developed by a third party and subject to a separate planning approval). Multiple existing 132 kV transmission lines will exit the electrical switchyard and eventually connect into the Kurri Zone Substation and the Newcastle Terminal Station.

Dispatchable electricity is deemed critically important to the stability of the National Energy Market (NEM) due to the increase in intermittent renewable (solar and wind) energy generators entering the market, along with the future retirement of coal-fired power stations The Project will operate as a “peak load” generation facility supplying electricity at short notice when there is a requirement in the NEM.

Operations are expected to commence in late 2023, with a total Project life of about 30 years.

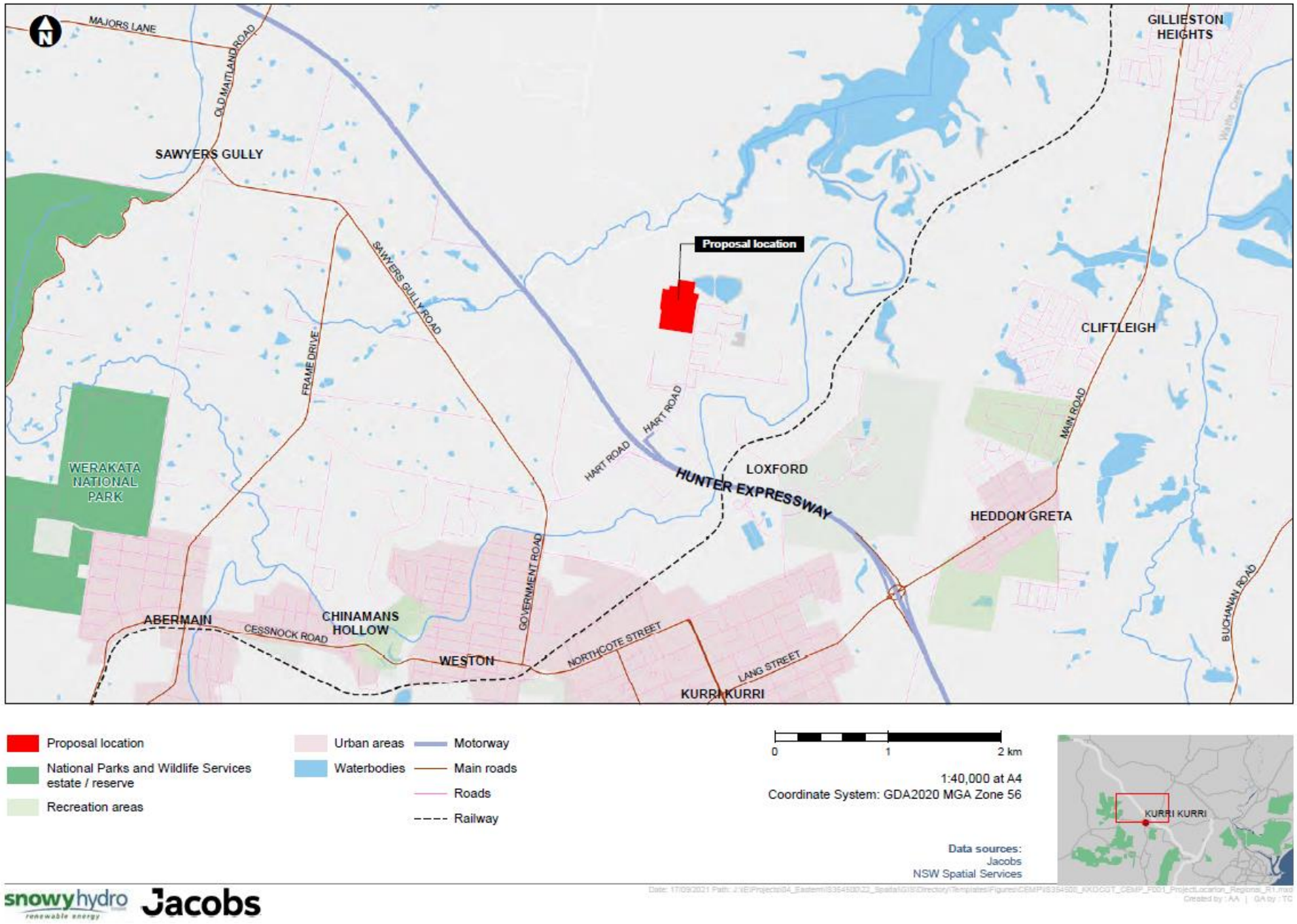

Figure 2-1: Project location (regional)

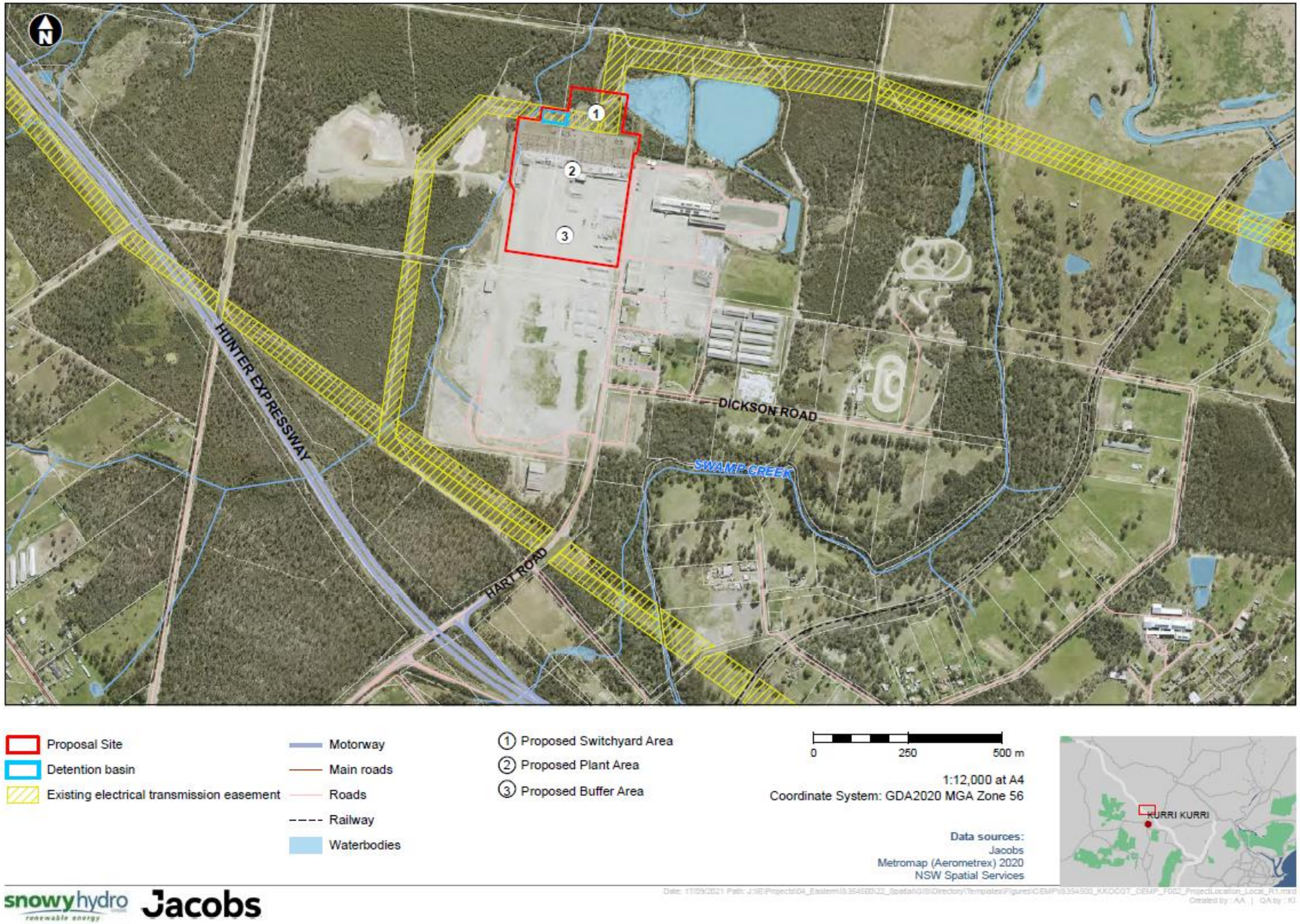

Figure 2-2: Project location (local)

2.2 Project elements

Table 2-1: Key Project elements

Project element	Summary
Gas turbine power Island	Two heavy duty F-class OCGTs, with the necessary balance of plant infrastructure, generator circuit breakers and generator step-up transformers.
132 kV Electrical Switchyard	Circuit breakers, bus-bars, isolators, series reactor and switchyard equipment including either underground cables or overhead line support gantries between the power station and the switchyard. Switchyard would be either air-insulated or gas-insulated; subject to detailed design. Switchyard voltage would be 132 kV. The switchyard would connect directly to existing Ausgrid overhead 132 kV transmission lines.
Supporting balance of plant infrastructure	▪ Internal site access roadways ▪ Water storage tanks (potable, fire and demineralised), pumps, demineralised water plant, piping ▪ Diesel fuel storage tanks, effective volume of approximately 1.75 ML each, and forwarding pumps ▪ Diesel tanker truck unloading facilities ▪ Other (non-fuel) truck loading/unloading facilities ▪ Control room ▪ Concrete bunded areas for liquid fuel tanks, liquid chemicals store, oil filled transformers and other facilities where such liquids could leak ▪ On site oily water separation system, with pit or tank storage, including facilities for: - Diesel fuel unloading area - Diesel fuel storage tanks bund - Gas turbine diesel fuel skid - Gas turbine and generator lube oil area - Gas turbine wash drains - Generator step up transformer bund. ▪ Concrete foundations, bitumen roadways, concrete surfaces in liquid fuel unloading station and gas turbine unit maintenance areas ▪ Stormwater drainage system e.g., pits, pipes, triple interceptor or equivalent, pumps (as required) ▪ Provisional stormwater basin ▪ Security fence, security lighting, stack aviation warning lights (if required) and surveillance system ▪ Office/administration buildings and amenities ▪ Workshop, warehouse/storage areas ▪ Communication systems ▪ Occupational health and safety systems including an emergency warning and evacuation system ▪ Firefighting system including water storage, pumps, hydrants, and deluge systems (as required) ▪ Emergency diesel generator(s) with associated internal fuel storage ▪ Closed circuit cooling systems for small on-site heat exchangers

Project element	Summary
	▪ Local electrical switch/control rooms ▪ Laydown areas ▪ Landscaped areas and staff parking ▪ Other ancillary facilities located within the Project Site, predominantly utilising the buffer land identified on figure 2-3.
Existing offsite supporting infrastructure (Roads)	▪ Public road network including Hart Road and M15 Hunter Expressway ▪ Fire trails adjacent to site for bushfire management
Existing offsite supporting infrastructure (Utilities)	▪ Waste and wastewater disposal facilities in the region ▪ Auxiliary power supply network ▪ Direct connection to existing Ausgrid overhead 132 kV transmission lines

2.3 Project location

The Project Site address is 73 Dickson Road, Loxford. Access to the property is via Hart Road and the property is approximately 1.0 km from the M15 Hunter Expressway as shown in Figure 2-2.

The Project Site is in a proposed Industrial Estate development. The proposed rezoning and subdivision around and including the Project Site would result in a new land use zoning and property description applying to the site. The planning proposal would rezone the Project Site as Heavy Industrial. The Project Site and its surrounds are currently zoned RU2 Rural Landscape under the Cessnock Local Environmental Plan 2011 (Cessnock LEP), with small pockets of surrounding land zoned E2 Environmental Conservation.

2.3.1 Access

The Project Site is accessed off Hart Road, which is adequate for construction and operation activities. During construction and operation, all vehicular access to the Project Site, including heavy vehicles will be via the Hunter Expressway and Hart Road. Parking for staff will be provided on-site and on adjacent Hydro Aluminium/ Industrial Developer land.

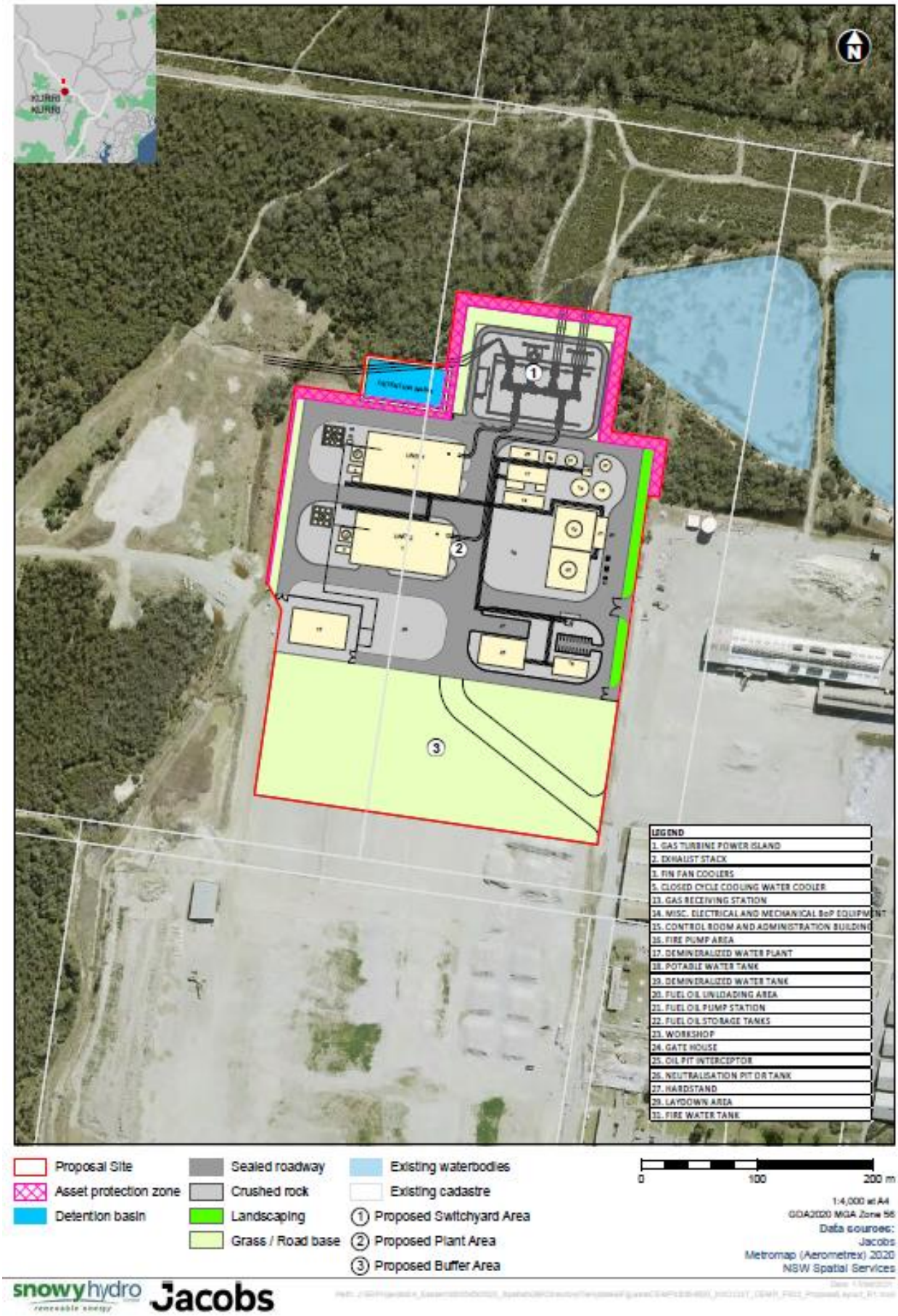

Figure 2-3: Site layout

3. Project construction

3.1 Works within construction scope

The key construction activity for the Project is summarised in Table 3-1 and covered under the CEMS unless noted otherwise. Preliminary work and pre-construction activities that are not considered construction include road dilapidation surveys, installation of fencing, and geotechnical drilling and/or surveying.

Pre-construction works are likely to include temporary sheds, amenities, fencing, laydown/stockpiling areas, site surveys and initial internal road building.

Table 3-1: Construction activity summary

Construction stage	Construction activity per program	Activity details
Pre-construction/site establishment	Site access, civil works, and road construction to establish site	▪ Installation of environmental controls including erosion and sediment controls ▪ Construction of reinforced concrete pavement to support heavy vehicles (up to B-double size) ▪ Internal road layout design to account for turning paths of large vehicles, cranes, and articulated vehicles, so that movements in and out can be made in a forward direction ▪ Roadworks and hardstand areas to be constructed for car parking, delivery/laydown areas ▪ Where required, bunded areas for delivery, handling, and storage of fuel and other hazardous material would be constructed
Construction	Switchyard site preparation	▪ Clearing of vegetation
Site establishment and construction	Earthworks to prepare the Project Site and construction areas	▪ Initial site clearing and grading works. Earthworks may involve small amounts of cut and fill to achieve the necessary design levels across the site ▪ Trenching for underground utilities and services would be installed such as stormwater, water and sewer reticulation, electrical cables, and (internal) gas pipes between the gas receiving station and the gas turbine locations ▪ Preparation and construction of foundations. Deep piling is expected to support the heaviest infrastructure such as the gas turbines, generator and the main step-up transformers while shallower piling or pad type foundations would underpin the foundations where the proposed surface loads are less (e.g. site office/administration buildings, car park). Final numbers and depth of foundation piles will be subject to detailed design, as is the piling method (i.e. bored; driven; vibration piling)

Construction stage	Construction activity per program	Activity details
		▪ Reinforced concrete slabs would be constructed in certain pavement areas, with other areas being surfaced with crushed rock or other suitable materials
Construction	Balance of Plant, Switchyard Construction, & Turbine Installation	▪ Installation of major plant items associated with the gas turbines including all above ground civil, mechanical, electrical plant equipment ▪ Installation of electrical switchyard
Commissioning	Commissioning and testing (excluded from construction scope)	▪ Program of testing and certification of all Project components, systems, and processes to demonstrate the Project can operate to the required standards before commencing operation ▪ Approval has been granted by the Secretary for commissioning to be included in the CEMS as a later stage of the development. ▪ Prior to the commencement of commissioning, the revised CEMS and sub plans will be submitted to the Department for review and approval.
Post-construction/demobilisation	Demobilisation	▪ Removal of construction equipment, site fencing and construction compounds ▪ Installation and establishment of landscaping

3.2 Construction program

The initial construction work to prepare the site and install environmental controls is expected to commence in early 2022 pending the acquisition of all approvals. An indicative program for construction is shown in Figure 3.1.

Prior to construction commencing, the Principal Contractor must notify the Department via the Major Projects website of the date of commencment.

It's noted that hot commissioning of Turbine & Generator 1 is expected in the 3rd quarter of 2023, and for Turbine & Generator 2 in the 1st quarter of 2024.

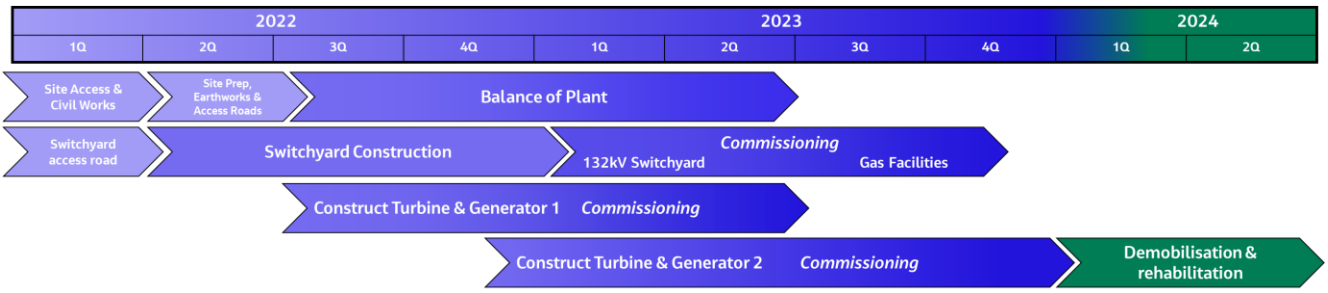

Figure 3-1: Construction program

3.3 Construction hours and workforce

All construction work will be undertaken during standard construction hours, which are defined as:

- 7:00am to 6:00 pm Monday to Friday, inclusive
- 8:00 am to 1:00 pm on Saturday
- At no time on Sunday or Public Holidays

Exceptions to conducting construction activities outside of these hours may occur for the following activities in accordance with Infrastructure Approval Condition B31:

- Activities that cause noise levels $L_{Aeg(15minute)}$ no more than 5dB above Rating Background Level at any residence in accordance with the Interim *Construction Noise Guideline* (DECC, 2009), and no more than the Noise Management Levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses
- For the delivery of material required by the police or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property, and/or to prevent environmental harm
- As approved with prior written approval of the Secretary, outlined in Condition B32.

The number of personnel onsite would increase substantially prior to, and in the months following, the delivery of the main turbine-generator equipment, with an expected peak of 250 Full Time Equivalent (FTE) personnel in early 2023. The final commissioning is likely to require no more than 50 persons onsite. The increase in local traffic that is expected to accompany construction activities is discussed in detail in Appendix K.

3.4 Project and Principal Contractor structure

A proposed organisational structure for the project and Principal Contractor is shown in Figure 3-2.

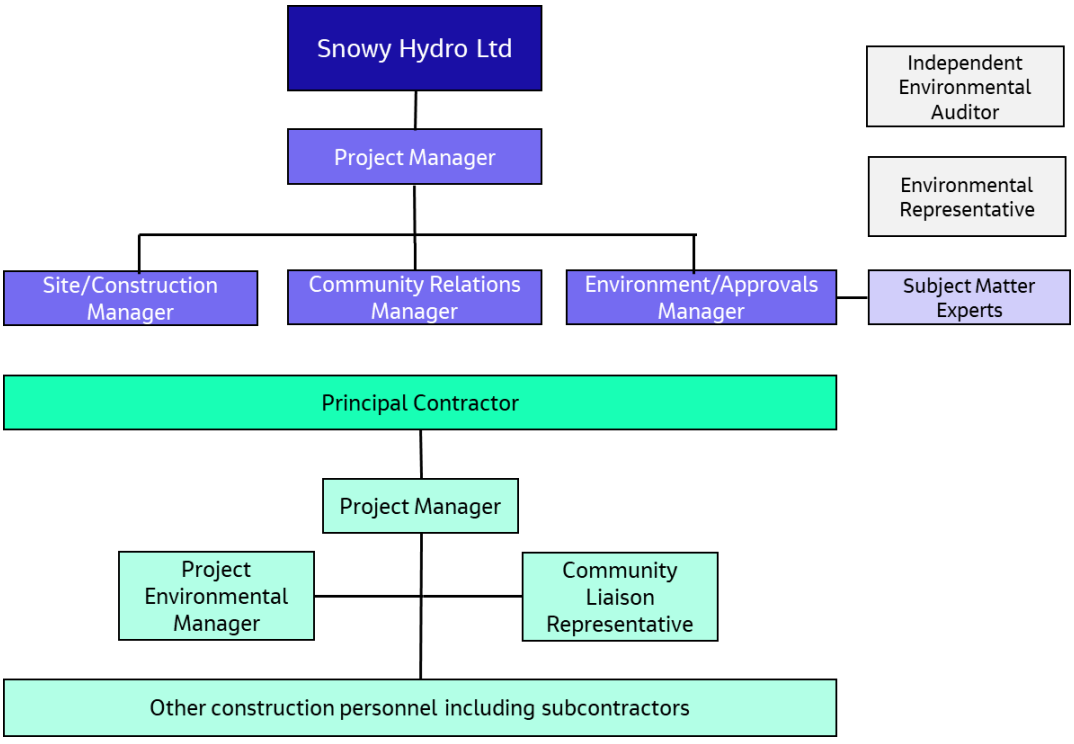

Figure 3-2: Proposed Project organisational structure

Subcontractors must comply with the requirements of the subcontract agreement, which will include the details of all environmental requirements while performing works under the direction of the Principal Contractor.

Subcontractor personnel will adopt the same responsibilities as the Principal Contractor's personnel, inclusive of all matters relating to health, safety, and the environment.

4. Legislative requirements

4.1 Introduction

The CEMS reflects current legislation, policies, and strategies at both a Commonwealth and State level, as relevant to the Project.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) comprise the primary legislation governing land use planning and development assessment in NSW. Subordinate to the EP&A Act and EP&A Regulation are other statutory instruments including State environmental planning policies (SEPPs) and local environmental plans (LEPs). The Project has been declared to be critical State significant infrastructure (CSSI) under section 5.13 of the EP&A Act.

At the Federal level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally important flora, fauna, ecological communities, and heritage places defined as Matters of National Environmental Significance (MNES).

The detailed requirements of the relevant legislation are provided in Appendix B.

Codes of Practices, Standards and Guidelines relevant to the Project are listed in Appendix C.

4.2 Approvals, permits and licences

Snowy Hydro is responsible for obtaining the approvals in Table 4.1 and the Principal Contractor is responsible for all other licences, permits, and approvals required during the construction stage. A copy of all licences, approvals, and permits are to be made available on-site at all times.

SHL have obtained EPL 21627 for the Scheduled Works component of the Project Site (ie the Project Site excluding the switchyard area and buffer site. The EPL will be transferred to the Principal Contractor who will hold the EPL for the duration of construction.

Table 4-1: Project Approvals, Permits, and Licences

Approval / Permit / Licence	Legislation	Responsibility
Infrastructure Approval	*Environmental Planning and assessment Act* 1979	Snowy Hydro
Environment Protection Licence (EPL)	*Protection of the Environmental Operations Act* 1997 (POEO Act)	Principal Contractor
EPBC Approval	*Environment Protection and Biodiversity Conservation Act 1999*	Snowy Hydro

4.3 Infrastructure approval conditions

Infrastructure approval conditions set out the requirements for the CEMS and associated management plans and include:

- The strategic framework for environmental management of the development
- The statutory approvals that apply to the development
- Descriptions of the roles, responsibilities, authority and accountability of all key personnel involved in the environmental management of the development
- Procedures that would be implemented to:
  - Keep the local community and relevant agencies informed about the operation and environmental performance
  - Receive, handle, respond to, and record complaints
  - Resolve any disputes
  - Respond to non-compliance
  - Respond to emergencies
- Management plans required for construction that reference any strategies, plans, and programs approved under the conditions of approval, and include monitoring:
  - Construction air quality management plan prepared in consultation with the NSW EPA
  - Construction noise management plan prepared in consultation with the NSW EPA
  - Construction and operational waste management plan

A series of management plans will be appended to the CEMS and sit within the CEMS framework. Management plans are required to state how:

- Environmental performance outcomes required in the Infrastructure Approval will be achieved
- Mitigation measures identified in the EIS and Infrastructure Approval will be implemented
- Relevant terms of the Infrastructure Approvals will be complied with
- Issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.
- Monitoring will be conducted for each environmental aspect where that monitoring is appropriate
- Reporting requirements both internally and to government agencies

Opportunities for improvement will also be sought for each environmental aspect based on monitoring and management outcomes, audits and inspections, and incident and non-compliances should they occur.

The CEMS must be approved by the Secretary and implemented by the Proponent.

The following Table 4-2 identifies where in this CEMS each relevant condition of approval is addressed.

Table 4-2: Infrastructure approval conditions and where addressed in this CEMS

Approval Condition number	Description of condition	Where the requirement is addressed in this CEMS
A1	Obligation to minimise harm to the environment	Section 8 and section 7.5.3
A13	Statutory Requirements	Section 4
A22	Environmental representative qualifications	Section 7.2.3
A23	Environmental representative obligations	Section 7.2.3 Section 6.3 Section 6.2
B17 & B 18	Storage and handling of chemicals, fuels, and oils	Section 8.11
B39	Acid sulphate soil	Section 8.3
B41	Protection of Heritage Items	Section 8.9
B47	Traffic Management Requirements	Section 6.2
B49 & B50	Visual and lighting	Section 8.12
C1	Preparation of Environmental Management Strategy	Whole document
C1 (a)	Strategic framework for environmental management.	Section 1
C1 (b)	Statutory approvals	Section 1.2
C1 (c)	Roles and responsibilities	Section 7.2
C1 (d) (i)	Community and agencies informing	Section 6
C1 (d) (ii)	Complaint management	Section 6.2 Section 6.3
C1 (d) (iii)	Dispute resolution	Section 6.3
C1 (d) (iv)	Responding to non-compliance	Section 7.5 Section 7.4
C1 (d) (v)	Response to emergencies	Section 7.4.2
C1 (e) (i)	Air quality, noise management, and waste management sub-plans	Section 8.4 - Appendix F Section 8.5 - Appendix G Section 8.6 - Appendix H
C1 (e) (ii)	Management plans and programs required to be prepared under the conditions of the approval.	Table 1-1
C1 (e) (iii)	Monitoring plan	Section 7.5.2 - Appendix L
C1	The Proponent must implement the approved Environmental Management Strategy.	Section 4.3
C5	Revision of Strategies, Plans and Programs	Section 7.7

C6	Incident Notification, Reporting and Response	Section 7.4
C7, C8, C9	Non-Compliance Notification	Section 7.4 Section 7.5
C10, C11, C12, C13	Compliance reporting	Section 7.5
C14	Notification of Department	Section 3.2
C21	Updating and staging of studies, strategies and plans	Section 7.7
C22	The Secretary may approve a revised strategy	Section 7.7
Appendix 4:	Incident Notification and Reporting Requirements	Section 7.4

4.4 Environment Protection Licence conditions

The Compliance Register includes all conditions from EPL 21627. The EPL conditions include;

- Administrative conditions with respect to the EPA's regulatory requirements and identification of the Schedule Activity for which the EPL is granted;
- Discharge points to air and water and respective limit conditions;
- A premises plan and boundary specific to the Scheduled Activity for which the EPL is granted
- Specification of hours of operation and a protocol to follow should those hours be sought to be changed, noting this is already adopted in this CEMS;
- A requirement for preparation of a Pollution Incident Response Management Plan (PIRMP)
- Reporting and notification requirements with respect to incidents and non-compliances.

A number of EPL conditions and conditions of the Infrastructure Approval reflect one another, and are often identical, so it is contingent that a change to the EPL or Infrastructure Approval is very likely to require a change to the other regulatory instrument.

Where conditions between the Infrastructure Approval and the EPL are different, the Proponent must address and report on both sets of conditions until such time as the discrepancy is resolved.

4.5 EPBC approval conditions

The Compliance Register will be updated to reflect the EPBC approval conditions once available.

5. Environmental risk management

5.1 Risk and management approach

The Principal Contractor is responsible for creating and managing an Environment Risk Assessment (ERA) for all activities with potential for environmental impacts and will revise the risk assessment throughout the construction of the project.

The avoidance hierarchy will support construction management - this hierarchy prioritises avoiding impacts, rather than minimising, repairing, or offsetting impacts. Where impacts cannot be avoided, the Principal Contractor will undertake all on-site activities in a manner that will minimise the impact of the Project on the environment.

An initial construction risk assessment will be generated based on the outcomes of the environmental impact assessments conducted as part of the EIS and is to be updated prior to commencing construction.

A risk register will be produced and maintained by the Principal Contractor.

Review of the Risk Register will be continual to ensure any new risks are identified and managed, and all risks that are no longer relevant are removed.

5.2 Initial construction risk assessment

An initial environmental risk assessment will be prepared by the Principal Contractor prior to construction commencing and will be incorporated into the Principal Contractor's risk register.

The initial environmental risk assessment's purpose is to identify significant environmental aspects and impacts that could eventuate during construction of the Project. Aspects and impacts for all construction activities that could contribute to harm or impact on the environment, including air, noise, water, heritage, waste, and biodiversity will be included.

The initial risk assessment will include the environmental aspect, cause, and consequence, and include a matrix of likelihood and consequence ratings. Mitigations measures to eliminate or reduce the risks would be included, and revised likelihood and consequence ratings assigned. Risks with impacts categorised as 'major' or 'severe' require a risk owner to be identified by the Principal Contractor in the Construction Workshop (see Section 5.2.1).

Table 5-1 shows the criteria that will be employed in the risk assessment process to classify the impact and likelihood of each environmental risk. The significance of risk should consider potential impact to environmental aspects, and cost or delays to Project development as described in Table 5-2.

Table 5-1: Risk Matrix

		Impact				
		Not significant	Minor	Moderate	Major	Severe
Likelihood	Almost certain *Expected to occur regularly under normal circumstances*	Medium	Medium	High	Very High	Very High
	Likely *Expected to occur at some time*	Low	Medium	Medium	High	Very High
	Possible *May occur at some time*	Low	Medium	Medium	Medium	High
	Unlikely *Not likely to occur in normal circumstances*	Low	Low	Medium	Medium	High
	Rare *Could happen, but probably never will*	Low	Low	Low	Low	Medium

Table 5-2: Risk impact definitions

	Impact description				
	Not Significant	*Minor*	*Moderate*	*Major*	*Severe*
Schedule delay	<3 hours	< 2 days	< 1 week	>1 week	Permanent disruption
Environment	Minor incident of environmental damage that can be reversed	Isolated but significant instance of environmental damage that can be reversed with moderate effort	Significant instance of environmental damage that can be reversed with intense efforts	Major loss of environmental amenity and danger of continuing	Severe widespread loss of environmental amenity and irrecoverable environmental damage
Stakeholders	Short term complaints	Short term but significant complaint	Sustained complaint(s)	Sustained and significant complaint(s)	Relationship with stakeholder irreversibly damaged
Legal and compliance	Issues of non-compliance and breach of regulation	Minor breach of legislation and or non-compliance	An event that results in fines or notice issued from regulatory authority	Major event that results in prosecution and or fine	A critical event that results in prosecution, jail and /or fine

5.2.1 Environmental risk workshop

The Principal Contractor is required to organise and facilitate an Initial Environmental Risk Assessment, Risk Register and risk mitigation actions. Workshop will be informed by subject matter specialists in areas relevant to the environmental matters associated with construction.

5.3 Continuous risk assessment updates

The Principal Contractor must designate accountability to review the environmental risk register on a monthly basis, or when triggered by events. This will involve engaging with appropriate personnel to ensure the applicability and thoroughness of actions and follow up with risk owners to ensure that risk mitigations are identified and activated in line with the risk register.

The Principal Contractor is responsible for ensuring risk mitigation strategies are implemented and current.

6. Communications

6.1 Overview

Snowy Hydro is committed to ongoing consultation and engagement with the local community and stakeholder groups during Project development. Community engagement for the Project was guided by the International Association for Public Participation (IAP2) Spectrum of Engagement.

Community engagement tools included a dedicated webpage, email address, and free 1800 phone number, to assist stakeholders and community to contact the Project team. Information included on the webpage includes an overview and description of the Project, information about how to become involved and how community feedback is being used, and answers to frequently asked questions.

Webpage address: www.snowyhydro.com.au/hunter-power-project

Email address: communityconsultation@hunterpowerproject.com.au

6.2 Construction communication and stakeholder engagement plan

A Communication and Stakeholder Engagement Plan (CSEP) was prepared to provide a framework for communications and engagement activities throughout the construction of the Project. A Community Relations Manager (CRM) has been assigned to the Project.

Notifications relating to construction of the Project will be delivered through multiple tools (outlined in Table 6-1) to stakeholders potentially impacted by construction activities.

Table 6-1: Communication tools

Communication tool	Information / purpose
Project webpage	▪ General Project / Location ▪ Commencement of construction ▪ Major milestones ▪ Change to traffic conditions ▪ Disruption to access or utilities ▪ Any other activity that may impact the community, businesses, or key stakeholders ▪ Updating with information on the environmental performance of the development, in the form of Annual Reviews, regular monitoring results, and information as required by Condition C20(a) and C1.
Letters	▪ Addressed mail containing information to particular households, businesses, or individuals who may be impacted by construction activities
Advertising	▪ Paid notices in local newspaper publications to advise of project updates (e.g. construction initiation, key milestones)
Media releases	▪ Proactive media statements to provide project updates and address concerns
Letterbox drop	▪ Unaddressed mail containing information about the Project

Communication tool	Information / purpose
Subscribed communications	▪ Monthly construction updates to subscribers through letterbox drops/letters, email inboxes, and posted on the project website ▪ Monthly construction updates will also be provided to all local MP's and Council's via email.
Traffic updates	▪ To advise public of any road closures or other traffic issues such as OSOM loads that may impede traffic ▪ Updates will be made on the Proponent webpage and through community newsletters and media releases ▪ For more closely affected neighbours, traffic updates will be made through letterbox drop and by door knocking to advise in person of changes to expected project generated traffic
Variable message signs	▪ Electronic variable message sign during major construction activities including traffic impacts to provide advanced notice to road users of traffic changes.
Community signage	▪ To be installed on gate entries to construction site

Community and stakeholders will be provided with the Project's dedicated hotline and email address on all notifications, and the Community Relations Manager will be responsible for ensuring all inquiries are addressed.

6.3 Complaint and enquiry management

An enquiry is defined as a question or request for information.

A complaint is defined as a statement that describes Project related activities as unsatisfactory or unacceptable. Complaints may also be accompanied by threats to contact the media, local MP, or some other authority.

Complaints and enquiries may be received by any method. The CRM will acknowledge and respond to enquiries and complaints about the Project, as per the process and timeframes shown in Table 6-2.

If the Project team technical staff are approached by a member of the public, the following protocols are to be observed:

- Take the person's name, contact details and questions or complaints, if possible
- Explain that a Project representative will be in contact shortly
- Pass details immediately onto the CRM, who will respond to the enquiry or complaint per the below protocol.

Where a dispute arises with a member of the public the following protocol is to be observed:

- The Environmental Representative will be informed and advice sought on the matter in accordance with condition A23;
- The dispute will be identified in the Complaints Register as such, and the Department advised in accordance with the incident procedure. If the dispute is shown to be a non-compliance, then the Department will be advised in accordance with requirements for non-compliances;
- Initial step is to clarify that the same information regarding the matter is held by each party involved, such as monitoring records);

- The Principal Contractor or Snowy Hydro (depending upon who the dispute is with), if an environmental issue can be demonstrated, shall offer alternative environmental mitigation measures.
- Should the dispute escalate a professional mediator may be introduced to facilitate an outcome.

A dispute process will be facilitated by the ER or CRM depending upon the nature (environmental, or community relations based) of the dispute.

Table 6-2: Complaints and enquiries management

Complaints and enquiries management	
Responding to complaints received during standard work hours	▪ Investigate and determine source of complaint immediately ▪ Provide an oral response acknowledging receipt of complaint to complainant as soon as possible. Every effort will be made to respond within 24 hours for emails, or one week for letters ▪ Investigate the potential environmental impacts and consequences of the complaint ▪ Record details of complaint received, how it was managed and the actions required to close out the complaint ▪ Provide an update of the complaints register to the ER for any complaints received on the day they are received.
Responding to enquiries received during standard work hours	▪ Record details of enquiry received ▪ Provide a response to enquirer on the next business day.
Responding to enquiries and complaints out of hours	▪ Stakeholders will be provided with the Project phone number for specific complaints and enquiries related to works out of hours. This number will be monitored by the CRM on a 24-hour basis ▪ The CRM will triage complaints and enquiries and liaise directly with the Principal Contractor to respond. Non-urgent enquiries and complaints will be dealt with on the next business day ▪ All details of the enquiry or complaint will be recorded in the Project consultation complaint register by the CRM. ▪ Provide an update of the complaints register to the ER for any complaints received on the day they are received.

7. Environmental management framework

7.1 Environmental Management System accreditation

The Hunter Power Project will be designed, constructed, operated and maintained under an Environmental Management System (EMS) certified to ISO14001:2015.

The Principal Contractor selected for the project will be required to have an EMS certified to ISO 14001. As such all environmental management processes will be to that standard, and provide assurance with regard to the implementation of all management practices (such as this CEMS and associated plans), reporting, and overall diligence of environmental management. As ISO14001 has its own requirements with respect to assurance, the Principal Contractor (and Snowy Hydro) will not only have to comply with this CEMS and the oversight identified within, but also the oversight required by the International Standard Organisation.

7.2 Roles and responsibilities

This section outlines key roles and responsibilities of the Principal Contractor, and sub-contractor personnel, with overall responsibility of the CEMS implementation held by the Principal Contractor. Roles and responsibilities and authority to undertake those responsibilities, as they relate to the implementation and review of the CEMS are provided in Table 7-1.

7.2.1 Principal Contractor key personnel

Table 7-1: Principal Contractor personnel and responsibilities

Role	Responsibility
Principal Contractor	
Project Manager	▪ Overall environmental performance of the Project ▪ Provide leadership in the implementation of all project environmental initiatives ▪ Specify and determine resources to enable execution of project environmental management activities and emergency response systems ▪ Ensure personnel are competent and have undertaken required training and inductions ▪ Ensure resources are specified to eliminate or minimise project environmental hazards ▪ Coordinate and participate in incident investigations and review and report findings ▪ Review environmental audit findings and ensure corrective actions are implemented and documented ▪ Review work planning requirements to ensure they include adequate identification, assessment, and control of environmental hazards ▪ Interfacing with major subcontractors and client management, and environmental personnel as required regarding environmental matters

Role	Responsibility
Principal Contractor	
Project Environmental Manager	▪ Specify resources to enable execution of environmental activities and emergency response systems on site ▪ Providing environmental advisors, project line management, and Contractor with feedback on environmental performance ▪ Coordinating and participating in scheduled environmental audits and reviews ▪ Develop training and induction schedules and content ▪ Coordinating and participating in workplace inspections ▪ Ensuring implementation of the EMS in the field ▪ Provide leadership in the implementation of all environmental initiatives
Community Relations Manager	▪ Work proactively with Snowy Hydro on issues, collaborate on solutions with regard to communicating with the community and members of the public. ▪ Manage the handling of enquiries and complaints in line with the Principal Contractors enquiry and complaint procedure. ▪ Work closely with the technical streams to ensure known stakeholder requirements are proactively considered when developing program sequencing, design and construction methodology and operations and maintenance interfaces. ▪ Ensure stakeholder and community issues are dealt with in a proactive and efficient manner to enhance the Project, minimise issues and resolve community concerns. ▪ Provide internal escalation and advice around sensitive stakeholder and community issues or issues that have the potential to impact the reputation of Snowy Hydro. ▪ Manage the maintenance of Principal Contractor stakeholder databases and contribute to reporting requirements.
All staff, including subcontractors	▪ Implementing CEMS ▪ Implement incident and complaint reporting and response ▪ Comply will all legislative requirements and the CEMS ▪ Participate in any relevant environmental training ▪ Reporting any near miss or environmental incidents to their supervisors ▪ Provide suggestions to improve environmental management on the project

7.2.2 Snowy Hydro personnel

Snowy Hydro's key personnel are identified below and have the authority to undertake the responsibilities outlined in Table 7-2.

Table 7-2: Snowy Hydro roles and responsibilities

Role	Responsibility
Snowy Hydro	
Project Manager	▪ Provide overall coordination for Project team activities and responsibilities, and support for those activities and team members, including financial issues, business case, schedule, HSE, and quality requirements are met ▪ Ensure risk management process and compliance management processes are in place and undertaken, including mitigation actions, preventative, and corrective actions are carried out ▪ Ensure that design reviews are undertaken and coordinate support as required ▪ Provide progress updates via weekly/monthly reports and attend Project Steering Committee meetings ▪ Attend meetings/inspections/tests at the Project Site and commissioning support. Proactively maintain a close overview of Project activities ▪ Develop, implement, manage and review the Project Management Plan (PMP) incorporating management of Risk, Quality, Safety & Environment. ▪ Ensure Principal Contractor HSE management plans and systems are in place and obligations are implemented
Environment/Approvals Manager	▪ Review of amendments or additions to the Project that are consistent with the environmental assessments and approval requirements, and recommendation to the Snowy Hydro Ltd Project Director where necessary ▪ Identifying, maintaining and communicating changes in regulatory requirements ▪ Review and approve Principal Contractor environment management systems and plans, and responsibilities for regulatory approvals ▪ Review of approvals, conditions, notification requirements, and provision of advice on implementation and assurance ▪ Create and maintain a compliance register and monitoring program, ensuring corrective actions are undertaken. ▪ Participate in environment risk assessments, inspections and audits, and reporting ▪ Liaising with and supporting the Environmental Representative ▪ Provide specialist environment advice and recommendations within and outside the Project Team as required
▪ Site/Construction Manager	▪ Provide oversight of Principal Contractor safety, environmental, and quality performance ▪ Overview of site activities during construction, reporting identified issues, and ensuring corrective actions are undertaken ▪ Ensure notifications are carried out, if required ▪ Liaising with the Principal Contractor, providing input to inductions and toolbox meetings as required, and attend meetings, inspections, tests, and commissioning support ▪ Monitor and record site construction progress by recording in daily diary activities undertaken, resources onsite, issues and resolutions

Role	Responsibility
	▪ Participate in risk assessments, inspect site risk controls, and report on their implementation ▪ Continual oversight of safety, environment and quality issues when carrying out daily duties and take corrective action as necessary ▪ Conduct quality inspections of site works as required by the Project Engineer and Project Quality Plan.

7.2.3 Environment Representative

An independent Environmental Representative (ER) has been appointed by Snowy Hydro and approved by the Planning Secretary, and has been done prior to commencing the development.

The ER is Greg Byrnes from Health Building International and is a suitably qualified and experienced person who was not involved in the preparation of the EIS and associated submission documents, and is independent from the design and construction of the development. The ER must meet only the requirements set out in sections 2.2, 2.3, 2.4 and 3 in the Environmental Representative Protocol (Department of Planning and Environment, October 2018).

From commencing the development, until commencing operation, or as agreed with the Secretary, the approved ER must review the documents identified in the Infrastructure Approval condition assigned to the Environmental Representative. These are primarily the CEMS and associated Management Plans, and other environmental assessments and verifications. The purpose of the reviews is to ensure the documents are consistent with approval requirements.

The ER will make written statements as required to the Department, assist in community complaints, and have the authority to approve 'minor amendments' to Environment Management Plans and this CEMS.

ER approval of minor amendments

A 'minor amendment' includes amendments that are consistent with the conditions of approval and do not require a modification to a condition of approval, including;

- to work methods that do not increase the environmental impact of the activity, such as, using an improved water management system that results in improved water quality.
- to the timing of environmental management or monitoring activities as a result of weather conditions outside the Proponent's control.
- are administrative in nature and do not affect physical works or reporting or notification requirements.
- to organisational structures of the Proponent or Principal Contractor.

If the ER is satisfied such an amendment is necessary, and consistent with the conditions of approval, the ER can approve the amendment. The process to obtain the approval from the ER is;

- Documented and kept on record for the duration of the Project;
- Initiated by the Principal Contractor, Snowy Hydro, or as a result of ER or other independent advice;
- The requested amendment shall be made on a 'minor amendment' request form, dated and numbered for each request;
- The request form will include;
    - a statement of reasons for the amendment,
    - a statement with justification as to why the amendment will not increase environmental impact, and
    - a revision of the amended document, clearly showing the proposed amendment.
- The ER will provide approval, or otherwise (such as for further information), to the proposed amendment, and that shall be returned in writing to the person requesting the amendment.

- The amendment will also require Snowy Hydro approval (as the Proponent), if the request is from the Principal Contractor.

Specific document reviews

As this Construction Environmental Management Strategy (CEMS) is for the construction period, the ER will review the plans listed below prior to commencement of construction:

- B33 - Biodiversity Management Plan
- B40 - Water Management Plan
- B43 - Aboriginal Cultural Heritage Management Plan
- B48 – Traffic Management Plan
- C1 - Environmental Management Strategy, including an air quality management plan, noise management plan, waste management plan and monitoring plan

Assessments required by the condition of approval prior to installation of the gas turbines will be reviewed before that time, including;

- B12 - Fire Safety Study, Hazard and Operability Study, Final Hazard Analysis
- B19 - updated plume rise assessment report

Reviews required of conditions that can be undertaken after commissioning (such as B29 noise compliance), or are operational requirements (such as condition B13 Emergency Plan, Safety Management System) will be completed at those times in accordance with the conditions of approval.

The ER will make a written statement to the Department after review of the documents identified above, as outlined in condition A23(a), the review to be undertaken before implementation of the documents. The timing of the review will be as clarified with the Department as provided for in condition A23(a). As requested by the Department, the specifics of condition A23(a) are included, the condition reads;

"From commencing the development, until commencing operation, or as agreed with the Secretary, the approved ER must:

> *(a) review the documents identified in conditions B5, B8, B12, B13, B19, B29, B33, B40, B43, B48 and C1 and any other documents that are identified by the Secretary, to ensure they are consistent with requirements in or under this approval and if so:*
>
> > *(i) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary); or*
> >
> > *(ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Department for information or are not required to be submitted to the Department);"*

7.3 Training and induction requirements

Environmental training, inductions, and awareness are key activities to be conducted by the Principal Contractor to ensure all staff working the Project are aware of environmental risks associated with construction, and their individual obligations.

Environmental training and awareness activities that will be conducted for staff and contractors include:

- General environmental training and awareness
- Specialised environmental training
- Site Awareness induction conducted

- Short-term workers induction
- Toolbox talks
- Targeted environmental awareness training
- Daily pre-start meetings.

7.3.1 Training needs and competency evaluation

Training needs will be determined, and training conducted for all personnel, contractors, and visitors to the Project Site.

All contractors and subcontractor representatives are required to work with the Principal Contractor's Project Environmental Manager to determine the environmental competency and training required for all site personnel and are responsible for ensuring training is conducted prior to work commencing.

7.3.2 Environmental training, awareness, and induction

The training in Table 7-3 describes the range of training expected to be conducted by the Principal Contractor for site personnel.

Table 7-3: Environmental training, awareness, and induction

Environmental training and awareness	Required personnel	Content and purpose
Site awareness induction	All personnel, including subcontractors and visitors prior to working or visiting the site	Environmental component can be covered in overall site induction. Conducted to ensure awareness of EMS requirements and ensure the implementation of environmental management measures
Environmental compliance training	All personnel, including subcontractors, prior to working on the site	Outline compliance obligations at the Project Site, and personnel's duties with regard to compliance
Incident investigation training	Determined by training needs matrix / Principal Contractor's Environmental Manager – employees who are responsible for leading incident investigations	Training in incident cause and analysis method for incident investigations
Specialised environmental training	Determined by training needs matrix / Principal Contractor's Environmental Manager	Training related to specific issues and activities that may require further training, such as use of spill kits, dust control procedures, vehicle washdown procedures, bushfire procedures or notification requirements to regulators in the event of an incident, or any other training required to fill gaps in competency
Short-term workers induction	All personnel and contractors working on the project for fewer than two days, where their tasks do not have significant risk of environmental harm	Briefing of responsibilities, and a site-specific induction for the work scope required to be undertake. Short term workers will be supervised by a fully inducted person for the duration of their work scope.

Environmental training and awareness	Required personnel	Content and purpose
Toolbox talks	Personnel and contractors on an as-needed basis	Raise awareness and educate personnel on environmental issues associated with construction. Discuss environmental issues relevant to upcoming works or previous incidents. They will include discussions of the key environmental aspects of the project, and the controls that staff need to be aware of.
Daily pre-start meetings	Personnel and contractors on-site each day	Inform personnel of the day's activities, environmental protection practices, work area restrictions, activities that may affect the works, coordination with other trades, and hazards. To be conducted before commencement of work each day or shift, or where changes occur during a shift.

Records for training and inductions conducted by the Principal Contractor will be maintained in the Principal Contractor's training database.

7.4 Incident and emergency management

The following definitions of an incident, material harm, and non-compliance have been provided together for the benefit of the reader and ease of interpretation of the document. The definitions provided below are as provided in the Infrastructure Approval under which this CEMS is required.

'Incident' – An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance

'Material harm' – Is harm that:

- involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or
- results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)

'Non-compliance' – An occurrence, set of circumstances or development that is a breach of the Infrastructure Approval under which this CEMS is required.

7.4.1 Pollution incident response management plan

An Environment Protection Licence (EPL) is required for the Project per the POEO Act prior to construction. Accordingly, a Pollution Incident Response Management Plan (PIRMP) will be prepared by the Principal Contractor (as the holder of the EPL). The PIRMP will outline the procedures in place to manage any pollution incidents at the Project Site (as shown in the "Premises Plan") and will be implemented immediately if a pollution incident occurs that causes or threatens harm to the environment.

7.4.2 Environmental incidents

Environmental incidents are to be managed in accordance with the Principal Contractor's Environmental Incident procedure. The procedure will address:

- Types of incidents

- Criteria for classifying environmental incidents
- Process for responding to and managing emergency situations
- Processes and legal requirements for the reporting and notification of an environmental incident.

For any environmental incident involving a breach of the Infrastructure Approval the Principal Contractor will work with Snowy Hydro to notify the Secretary through the Major Projects website no more than seven days after becoming aware of any incident, and a report must be issued to the Secretary and relevant authorities within 30 days of the incident. The reporting requirements can be found in Appendix 4 of the Infrastructure Approval.

For a breach of the EPL, the Principal Contractor will report to the NSW EPA in accordance with the reporting requirements of the EPL.

For incidents involving actual harm or significant risk of environmental harm, the Principal Contractor will notify the EPA immediately and follow the procedure in the PIRMP.

The Principal Contractor must provide the following names and contact details for key emergency response organisations and people onsite at all times. These details will be accessible in a hardcopy of the Emergency Response Plan and online through the Principal Contractor's internal internet service and be part of induction to the site:

- Police, Ambulance, Fire Services
- 24-hour emergency contact
- Principal Contractor Environmental Manager
- Principal Contractor Project Manager
- Environmental Representative
- Ecologist (subject matter specialist appointed by Snowy Hydro to support the project)
- Archaeologist (subject matter specialist appointed by Snowy Hydro to support the project).

7.4.3 Incident notification and reporting

The Principal Contractor will notify Snowy Hydro upon becoming aware of an incident, and Snowy Hydro will then notify the Secretary in writing via the Major Projects website immediately.

The key aspects the notification will address are:

(a) the development and application number (12590060);

(b) details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);

(c) how the incident was detected;

(d) when the Proponent became aware of the incident;

(e) any actual or potential non-compliance with conditions of approval;

(f) what immediate steps were taken in relation to the incident;

(g) further action(s) that will be taken in relation to the incident; and

(h) a development contact for further communication regarding the incident. Unless otherwise stated in the incident notification, this is the Snowy Hydro Approvals Manager on 0409 840 165.Within 30 days of the date on

which the incident occurred or as otherwise agreed to by the Secretary, the Proponent must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

The Incident Report must include:

(a) a summary of the incident;

(b) outcomes of an incident investigation, including identification of the cause of the incident;

(c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and

(d) details of any communication with other stakeholders regarding the incident.

7.4.4 Emergency management planning and response

Key elements of the Emergency Management Plan for construction is provided below, which will be prepared and implemented by the Principal Contractor. The Plan will address;

- Implementation and maintenance of a documented process to identify potential HSE emergency situations for the project and work activities undertaken by the Project;
- Regular review of the identified emergency situations for all packages of work;
- Access and egress situations, locations, and alert mechanisms for people at the project site;
- Ensure emergency response arrangements are communicated to all personnel and visitors.
- Integration of any requirements from the Pollution Incident Response Management Plan (PIRMP) required by the EPA;
- Contact details of respective emergency services, and notification requirements.

The Principal contractor will ensure designated emergency response personnel have:

- Been inducted in the site-specific emergency plans and procedures; and
- Have obtained any qualification or formal training defined by UGL as required to fulfil the role.

As part of the Emergency Response Plan the Principal Contractor will ensure emergency response practice drills:

- Are scheduled and carried out on site at least every 6 months
- Are scenario based and test a variety of the identified potential emergency situations
- Are recorded and evaluated for effectiveness
- Incorporate a process for the identification and management of corrective action

With regard to emergency response equipment the Principal Contractor will;

- Ensure a qualified person undertakes a first aid risk assessment to identify site first aid equipment and requirements in accordance with the relevant legislation, codes of practice and Australian Standards;
- Ensure a competent person identifies site emergency response equipment and requirements;
- Ensure there is a process for annual inspecting, testing and maintaining emergency and first aid equipment.

7.4.5 Internal incident reporting

All health, safety, and environmental injuries, incidents, hazards and near misses will be reported to ensure they are managed correctly. The overall objective of reporting is to identify and mitigate risk, to avoid a recurrence of the event.

Reporting captures actual or potential incidents that have caused or may cause injury or damage to the environment and property because of the Principal Contractor's activities. This reporting includes all personal engaged on the Hunter Power Project and any risk posed to members of the public and is described in Table 7-4.

Table 7-4: Internal Environmental Incident Reporting requirements

Type	Guidance	Requirement
Environmental Incident	An incident is an "An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance". Environmental harm can occur because of a breach of one, or a combination of, three environmental management parameters: 1) Environmental law and/or regulation (including EPL/Infrastructure Approval conditions) 2) Environmental harm to a technical environmental area (e.g., physical biological harm, loss of public amenity) 3) Failure of an environmental risk management method.	▪ Notify the Secretary in writing via the Major Projects website immediately. ▪ Reported via the Principal Contractor's incident reporting system ▪ Report and investigate in accordance with Principal Contractor's incident investigation procedures ▪ Details of complaints must be recorded ▪ Details of response and any investigations undertaken as a result of the complaint ▪ Action taken as a result of the finding of the complaint investigation and signature of responsible person
Near Miss	A near miss is an unplanned event that doesn't cause harm to the environment, but had circumstances been different, the event could have resulted in harm.	Per environmental incident
Complaint	Complaints are communications from the public, landholders, or stakeholders that raise concerns with the Contractor's construction activities or behaviour of staff.	Refer to Section 6 for complaint management protocol.

7.5 Compliance management

7.5.1 Inspections

A regular program of inspections is required throughout the duration of construction. This schedule is to be revised for effectiveness each month to ensure environmental management plans are incorporating the appropriate environment protection measures.

The pre-start checklist and weekly inspection checklist will be developed by the Principal Contractor prior to the commencement of construction. The checklist is required to provide a surveillance tool to ensure safeguards are being implemented and housekeeping is maintained, and must:

- Ensure that environmental controls required for the day's activities are identified
- Identify where environmental practices are not being implemented
- Identify gaps in environmental management with potential to impact the environment.

Any gaps in the checklist or inspection schedule will be evaluated and prioritised after each inspection, and a target close out date to rectify issues will be documented.

Non-routine inspections of the construction site will be conducted in addition to the regular scheduled inspections by the Principal Contractor's Environmental Manager. A non-routine inspection will also be conducted upon the following:

- After an incident as required by an investigation
- During works with an assessed high environmental risk
- Upon completion of a construction stage
- A large increase in contractor/subcontractor staff begins working on site
- A severe weather event (high rainfall, strong winds).

The inspection schedule for construction is provided in Table 7-5.

Table 7-5: Inspection schedule

Inspection	Frequency	Location	Responsibility	Reporting requirements
Daily workplace inspection	Daily	Work area Equipment in work area	Principal Contractor	None
Pre-start equipment inspections	Daily	Equipment and machinery to be used on the day	Principal Contractor	Pre-start checklist
Environmental site inspection	Weekly	Project Site	Principal Contractor	Site inspection checklist
Joint Environmental site inspection	As requested by Stakeholders (Snowy Hydro, NSW EPA, DPIE)	As requested by Stakeholder	Stakeholder, Principal Contractor	Inspection report
Management (corporate) site visit inspections	Quarterly (minimum)	Project Site	Principal Contractor	Inspection report
Rainfall inspection (assessed if there is >80% potential for 10mm or greater rainfall in a 24 hour period)	Within 3 hours of the start of a rainfall event during work hours if rainfall is expected to exceed 10mm in a 24-hour period Within 24 hours of the start of a rainfall event or on the following day	Project Site	Principal Contractor	Site inspection checklist

Actions from all inspections are to be recorded and closed out within agreed to timeframes. Copies of all environmental inspection reports, logs, and notes will be prepared, and records are to be kept on-site.

7.5.2 Monitoring program

Monitoring will be conducted through construction to measure the effectiveness of environmental controls and their implementation. The monitoring requirements are included in the relevant environmental management plans and summarised in the Construction Monitoring Program in Appendix L.

Each monitoring program will include:

- Details of baseline data where available
- Parameters of the Project to be monitored
- Frequency of monitoring
- Location of monitoring
- Monitoring reporting requirements
- Procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory
- Any consultation to be undertaken in relation to the monitoring program.

The Principal Contractor is responsible for carrying out the monitoring program including ensuring that environmental monitoring equipment is maintained and calibrated according to the manufacturer's specifications, and appropriate records are kept.

7.5.3 Independent audits

Independent Audits during construction are required to obtain an independent and objective assessment of the environmental performance and compliance status of the Project. Independent Audits will be conducted by a qualified, experienced, and independent auditor, and the qualifications of the person conducting the audit must be agreed to in writing by the Secretary prior to the commencement of the audit.

The first audit must occur within 12 weeks from the start of construction, and no less than every 26 weeks from the date of the initial audit, or as otherwise agreed by the Secretary.

Audit reports and Snowy Hydro's response (as the Proponent on the Infrastructure Approval) must be submitted to DPIE within two months of the audit site inspection and be made publicly available. The Principal Contractor must do all that is reasonable and feasible to address audit observations, recommend mitigations measures, and implement those measures that are agreed.

7.5.4 Internal audits

The Principal Contractor will conduct internal environmental audits monthly (at minimum) throughout construction to ensure the ongoing adequacy and effectiveness of the CEMS. Internal audits will verify compliance with:

- The Infrastructure Approval requirements
- Other relevant requirements (licences, permits, regulations)

Audit reports identifying observations and actions will be provided to Snowy Hydro by the Principal Contractor and follow up reports will demonstrate how observations have been addressed.

Snowy Hydro will conduct internal audits of the Project at a system level, with the primary objective of ensuring that the Principal Contractor has systems and process in place to manage the requirements under this CEMS, other approval requirements, and are implementing robust environmental management of the Project Site. Snowy Hydro internal audits will be conducted on a quarterly basis.

7.5.5 Compliance register

A Compliance Register has been developed for the project that includes the conditions set out in the Infrastructure Approval, EPL and the EPBC Approval. The register will be maintained and updated throughout the course of the Project and will:

- Identify the requirements in the Infrastructure Approval conditions that must be complied with during the planning and conduct of construction works
- Detail the compliance monitoring methods to be used to assess compliance with each compliance requirement
- Detail the type of data or evidence that is to be collected to assess whether compliance has been achieved.

Compliance reports must be developed and submitted to the Department and made publicly available within 60 days of submission to the Secretary.

7.5.6 Non-conformance and non-compliance

Environmental non-conformance is a failure to comply with a requirement, standard, or procedure that is part of the environmental management system for the Project Site. Non-conformances may be identified through audits, inspections, monitoring, improvement opportunities, community consultation, complaints, incident management, or through any personnel working on the Project.

A non-compliance is an occurrence that is a breach of an approval condition or legislative or regulatory requirement. Non-compliances are also recorded as incidents as per the incident management process.

A non-conformance can generally be managed within the Project systems and processes, whereas a non-compliance will involve reporting and additional requirements from external agencies, typically NSW Planning and/or the NSW EPA. Refer to Section 7.4.

Construction activities associated with non-conformance or non-compliance may be stopped by the Principal Contractor or other Project personnel, until a corrective or preventive action has been put in place to resolve the non-conformance or non-compliance and ensure it will not continue or be repeated.

7.5.7 Non-compliance notification

In the instance of a non-compliance, the Secretary will be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance. Snowy Hydro will lodge the notification.

The Principal Contractor must notify Snowy Hydro whenever it is aware of a non-compliance.

The key aspects a non-compliance notification will address are:

(a) the development and application number (12590060);

(b) the condition of approval that the development is non-compliant with;

(c) the way in which the development does not comply;

(d) the reasons for the non-compliance (if known); and

(e) the corrective and preventative actions undertaken to address the non-compliance.

For clarity, a non-compliance which has been already been notified as an incident does not need to also be notified as a noncompliance to the Major Projects website.

7.5.8 Compliance reporting

Compliance Reports of the development will be carried out by Snowy Hydro with the support of the Principal Contractor, and also upon the advice of the Environmental Representative where applicable. Reporting is to be in accordance with, and upon the timing set out in, the *Compliance Reporting Post Approval Requirements (2020)* or subsequent version.

Noting that the *Compliance Reporting Post Approval Requirements (2020)* guideline specifies a minimum of 52 week interval for submission of compliance reports, Snowy Hydro will submit a compliance report every 26 weeks following the commencement of construction, until 6 months prior to the scheduled commissioning date. Noting that a pre-commissioning compliance report is separately required by the conditions of approval for the Project.

Snowy Hydro must make each Compliance Report publicly available on its webpage within 60 days of submitting it to the Secretary. The timing of submission of compliance reports for specific conditions are as set out in the conditions of approval.

There is an opportunity to request and agree an alternative reporting method and timing with the Secretary to those identified in this section. If sought, this is to be done by Snowy Hydro in consultation with the Department.

7.5.9 Corrective and preventative actions

A corrective and preventative action process will be initiated following the identification of a non-conformance and/or non-compliance and be proportionate to the nature of the non-conformance and/or non-compliance. This process will follow the Principal Contractor's procedures and be communicated to staff through training and induction activities.

7.6 Documents and records management

7.6.1 Documents and records

The Principal Contractor's records management procedure will detail the requirements for the retention and management of records. All records are to remain legible and be available to the relevant authorities when requested.

Documents and records in relation to environmental management, monitoring, and reporting must be retained for the duration identified in the Infrastructure Approval, Environment Protection Licence, and as per applicable regulations. The Principal Contractor's EMS Document Control procedure is to outline retention durations.

All records are to be accessible onsite in electronic or hard copy, with the records expected to be required during the Project outlined in Table 7-6.

Table 7-6: Records management summary

Data type	Owner
Infrastructure Approval (EP&A Act)	Snowy Hydro
EPBC Controlled Action Approval	Snowy Hydro
Environment Protection Licence for Scheduled Development Work (power station site)	Principal Contractor
Other approvals, licences, and permits	Principal Contractor
Induction and training records	Principal Contractor
Toolbox talk attendance	Principal Contractor
Contractor induction and training records	Principal Contractor
Risk assessments	Principal Contractor & Snowy Hydro
Incident reporting and investigation	Principal Contractor & Snowy Hydro
Community engagement and Complaints register	Principal Contractor & Snowy Hydro
Incident reports	Principal Contractor

Data type	Owner
Waste receipts	Principal Contractor
Monitoring, inspection, and compliance reports/records	Principal Contractor
Minutes of CEMS and construction EMS review meetings	Principal Contractor
CEMS and associated management plans	Snowy Hydro
Contractor management plans addressing the CEMS and associated management plans	Principal Contractor
Audit reports	Principal Contractor and Snowy Hydro

7.7 Continual improvement and CEMS review

7.7.1 Improvement and review

The CEMS and associated plans will be regularly reviewed as part of a continual improvement process to ensure they remain current and relevant to the Project.

It is the Principal Contractor's responsibility to advise Snowy Hydro when a change to the CEMS or plan is required to enable the Project to continue or improve. Where an amendment is required, this will be made by Snowy Hydro and if required, agreed with DPIE, prior to the work that it relates to is conducted. The exact wording of condition of approval C5 is used below under 'Trigger events and CEMS review'.

Throughout the construction of the Project, the Principal Contractor will communicate to Snowy Hydro any proposed changes to their own environmental management documentation which may necessitate an amendment to the overall CEMS. In this case the Environmental Representative will also be consulted regarding the potential change.

It is a requirement the CEMS and all associated plans are reviewed and updated within three months of the following events:

- The submission of an environmental incident report
- The submission of an audit report
- The approval of any modification to the conditions of the Infrastructure Approval
- A direction of the Secretary.

Condition C22 provides for the Secretary to approve a revised strategy or plan required under the conditions of approval, or the stage submission of these documents, at any time. With the approval of the Secretary, the Proponent may prepare the revised or staged strategy or plan without undertaking consultation with all parties nominated under the applicable condition in this approval.

Prior to the commencement of commissioning, the revised CEMS and sub plans will be submitted to the Department for review and approval.

It is recommended that a non-routine review of the CEMS and all plans occur within 3 months of the following:

- Practical completion of a significant stage of construction works
- A significant change in site conditions
- A change in the applicable laws, approvals, EPL or Infrastructure Approval conditions
- If a new, major sub-contractor begins working on site
- If requested by the Principal Contractor or Snowy Hydro.

Trigger events and CEMS review

A summary table setting out the trigger events as identified in condition of approval C5 is set out below, with the associated sections of this CEMS that have been updated. This table would be updated as and when these events occur and there is a revision of a document under this approval identified in condition of approval C5.

Within 3 months of any of these events (unless the Secretary agrees otherwise) the Proponent must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary.

Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.

Condition C5 trigger event	**Section of this CEMS that has been amended, or associated study, strategy or plan**
(a) the submission of an incident report under condition C6 below;	N/A at time of first CEMS draft
(b) the submission of an audit report under conditions C15 to C19 below; and	N/A at time of first CEMS draft
(c) the approval of any modification to the conditions of this approval; or	N/A at time of first CEMS draft
(d) a direction of the Secretary under condition A2 of Schedule 2;	N/A at time of first CEMS draft

7.7.2 Change management

The Environmental Representative (ER) will be independent of Snowy Hydro Limited and approved by the Secretary. The ER will be suitably qualified and highly experienced in site work and will act as an advisor, provide document reviews and review the project's compliance against the project approval conditions. The ER will assess whether DPIE review is required for any changes made to management plans and will review Principal Contactor management plans/ subplans for consistency with the project CEMS and management plans, and for adequacy in general, ensuring the management plans adequately address environmental risks from project activities.

8. Environmental management

The following environmental targets have been established for the Project:

- Full compliance with statutory approvals
- No regulatory infringements, notices, or prosecutions
- Address non-conformances and corrective actions within timeframes specified in the CEMS
- Communicate regular Project updates and other information through the Project website
- Record and respond to complaints within timeframes specified in the CEMS
- Develop and maintain a program of ongoing environmental monitoring
- Capture lessons learned from environmental incidents and implement corrective measures to avoid repeating issues
- The Project minimises all impacts to human health and the environment though the life of the Project.

Individual detailed Management Plans are appended to this CEMS for environmental aspects where a higher level of detail is warranted. Appendix D contains a summary of the mitigation measures contained in the Project EIS. The mitigation measures from the EIS or where applicable Response to Submissions specialist studies are repeated in this section, or incorporated into the relevant individual Management Plans.

For environmental aspects where an individual Management Plan is not warranted, the environmental management and controls for that aspect are outlined in the following sections.

The Proponent commits to minimising any material harm to the environment that may result from the construction.

8.1 Water

A Water Management Plan, has been developed to manage risks associated with stormwater, groundwater, soil erosion and impacts to surface water. The Water Management Plan has been developed in accordance with the Infrastructure Approval Conditions B35 to B38 in consultation with NSW EPA, DPIE Water, Hunter Water Corporation and Cessnock City Council, and is provided in Appendix E.

8.2 Contaminated land

The site for the Project will be located on land that has been remediated from the contamination caused by its previous use as a smelter and has been validated by an accredited NSW EPA site auditor. A Site Audit Statement that covers the Project Site must be provided to the Secretary by Snowy Hydro prior to commencing construction as per Condition B46.

8.3 Acid sulfate soils and rock

A separate Management Plan is not provided for Acid Sulfate Soils, with the management requirements set out in this section.

The types of acid sulfate material which may be present at the Project Site are:

- Potential acid sulfate soils: Potential acid sulfate soils are soils containing iron sulfides (commonly pyrite) or sulfidic material which have the potential to produce sulfuric acid if they are drained or excavated.
- Actual acid sulfate soils: Are soils that have already undergone oxidation to produce acid, resulting in a soil pH of less than 4. These soils are typically characterised as possessing pale yellow mottling.

Left undisturbed, acid sulfate materials do not present any risk. But when they are exposed to air, the iron sulfides they contain react with oxygen to create sulfuric acid.

Acid sulfate soils risk was considered during preparation of the environmental impact statement (EIS), and potential and actual acid sulfate soils are considered unlikely to be present at the Project Site according to NSW Department of Planning, Industry and Environment (DPIE) planning maps (2019). Soils approximately 500 metres north and east of the Project Site, surrounding and within Black Waterholes Creek and Swamp Creek, are respectively classified as:

- 'Class 2 - high probability of ASS greater than one metre below ground surface' and
- 'Class 4 - low probability of ASS greater than three metres below ground surface'.

8.3.1 Site ASS assessment results

Laboratory testing results from geotechnical investigations during the EIS indicated a possible risk of ASS in the alluvial soils at depth. However, given the relatively shallow excavation proposed for construction of the Project (refer to Table 8-1), and limited dewatering, ASS disturbance is considered unlikely, or limited to specific locations that are identifiable and able to be managed.

Further laboratory testing is underway for ASS prior to construction in coordination with geotechnical investigations at the site. These results will be integrated into site management and will inform the management of any potential ASS.

Table 8-1 summarises the expected excavations during construction that may interact with the water table.

Table 8-1: Indicative excavation depths compared to inferred water table (Groundwater Impact Assessment Addendum, (Jacobs, 2021))

Excavation type	Excavation depth	Intersection with water table
Trench excavation for services installation	Nominally 0.8 m depth below final surface	Some intersection of water table is anticipated
Trench excavation for high voltage cabling	Nominally 1.2 m depth below final surface	Some intersection of water table is anticipated
Excavation for fuel oil storage tank and water storage tank foundations – Large Tanks	Up to 0.8 m depth below final surface	Some minor intersection of water table possible
Deep excavations for oil-water separator tank and neutralising tank	Up to 2.0 m depth below final surface	Intersection of water table is anticipated
Deep excavations for provisional stormwater basin	To 9 m AHD invert	Intersection of water table is anticipated; however, it is not anticipated that dewatering will be required, the basin excavation will be wet
Pile footings for turbine foundations (from base of shallow excavation)	To approximately 20 m below final surface	Pile footings will intersect with groundwater.

Although impacts due to ASS are not expected to occur, the risk of disturbing ASS may need to be managed during construction. The identified activities, aspects and potential impacts relevant to acid sulfate materials are summarised below.

Activity	Aspect	Potential impact
Bulk earthworks and piling works	Disturbance of acid sulfate material	Surface water or groundwater contamination via the release of acid into the environment.
		Increased acidity of downstream receiving environment potentially impacting aquatic life.
Stockpiling, handling and treatment of acid sulfate materials	Release of ASS material to the environment	Surface water contamination via the release of acidic run-off into the environment.

8.3.2 Management and mitigation measures

The implementation of the management and mitigation procedures will assist to mitigate potential risks associated with the disturbance and management of ASS and meet the requirements for ASS identified in the associated environmental documents, including legislation, the EIS and the Infrastructure Approval conditions.

The following measures align with the ASS management process and will be implemented in the event earthworks have the potential to disturb confirmed or suspected acid sulfate material.

Mitigation reference	Action / requirement	Responsibility
ASS1	Should future targeted investigation confirm the presence of acid sulfate material, any ground disturbing activity in that area will include a review to determine the most suitable ASS management measures (including whether excavation into acid sulfate material can be avoided). The review will consider the extent of any excavation required and the results of targeted investigations.	Principal Contractor
ASS2	Visual monitoring is to be undertaken during all ground disturbing works to identify suspected ASS. Preliminary visual checking will be based on material type, colour and consistency. Dark grey and black clays, silts and sands or butter-coloured jarosite present in surface spoil or any excavated material will be classified as suspected acid sulfate soils.	Principal Contractor
ASS3	Where ASS requires containment and treatment on site, an activity specific work method statement will be developed or modified which incorporates controls (where applicable) for: ▪ Management of excavation works ▪ Management of piling spoil ▪ Stockpile management ▪ Dewatering ▪ Off-site transport of acid sulfate materials ▪ On-site treatment of acid sulfate materials.	Principal Contractor

Mitigation reference	Action / requirement	Responsibility
ASS4	Site crews involved in activities where ASS management is required will be briefed on the specific environmental controls incorporated into the work method statement prior to commencing. Relevant information to be communicated includes: ▪ Identification and delineation of confirmed areas of acid sulfate material. ▪ Excavation methods and monitoring requirements. ▪ Construction and location of ASS treatment pads, haul routes and spoil containment during transport. ▪ ASS treatment pads to be used for confirmed ASS or suspected ASS which has been field-tested and is pending laboratory confirmation. ▪ Lime treatment methods of PASS including plant, materials and liming rates. ▪ Methods and frequency of verification testing to confirm neutralisation. ▪ Re-use or disposal location for treated ASS and records to be maintained.	Principal Contractor

8.3.3 Excavation of acid sulfate material

Excavation of acid sulfate material will be undertaken in a manner that minimises disturbance. Work crews should be briefed on specific requirements for excavation and will seek further advice from the Principal Contractor's Environmental Manager if unsure.

The following measures will apply if acid sulfate materials are likely to be disturbed by excavation.

Mitigation ref	Action / requirement	Responsibility
ASS5	Excavation to occur progressively, so that any rectification works can be quickly identified and implemented.	Principal Contractor
ASS6	Daily pH monitoring of excavation faces is to occur in any known areas of ASS, especially any below the natural water table if dewatering is occurring.	Principal Contractor
ASS7	Lime will be stored on-site and spread over affected areas if pH is shown to be declining.	Principal Contractor

8.3.4 Stockpile management

Stockpiling of acid sulfate material is to be minimised in terms of volume and time stored on site. The following mitigations and controls will be implemented where stockpiling is required.

Mitigation ref	Action / requirement	Responsibility
ASS8	Stockpiling is only to occur in the designated treatment and stockpile area of the site within a purpose-built earth bund with a sealed base and appropriately sized leachate collection sump(s)	Principal Contractor
ASS9	Design of stockpiles should minimise the surface area exposed to oxidation, with capping to be considered if storage is for longer than a few weeks	Principal Contractor
ASS10	Establish diversion banks up-slope of stockpile and treatment areas (if necessary) to prevent run-on water.	Principal Contractor
ASS11	If treatment of potential acid sulfate soils is not proposed, daily pH monitoring is to occur on these stockpiles. If pH levels in the soil or leachate water declines, then the material will require treatment prior to reuse or disposal.	Principal Contractor

8.3.5 Treatment of excavated acid sulfate material

Where ASS is to be treated on-site, lime neutralisation will be carried out in accordance with a work method statement and the liming rates provided by laboratory analysis. The following mitigations and controls apply to the treatment of excavated acid sulfate material.

Mitigation ref	Action / requirement	Responsibility
Treatment pad siting and design		
ASS12	A treatment pad area is required which includes sealed base layer, leachate collection system and exterior bund to prevent impacts to soil and groundwater.	Principal Contractor
ASS13	Treatment pad areas will be located within the site boundary, at least 50 metres from any waterway and will be sited on an elevated area, noting that the Project Site is at low risk from flooding.	Principal Contractor
ASS14	Stormwater and sediment retention features are to be established during set-up and use of the treatment areas to prevent contamination runoff to the environment, and regularly monitored to verify and maintain effectiveness.	Principal Contractor
Treatment process		
ASS15	Each delivery of potential or actual ASS to the treatment pad area must be accompanied by or awaiting the results of laboratory confirmation testing and the recommended liming rate.	Principal Contractor
ASS16	Soils identified as requiring treatment will be spread in layers on the impervious bund.	Principal Contractor
ASS17	Lime application and mixing methods will be dependent on the quantities of acid sulfate material to be treated. Lime must be thoroughly mixed with the soil if all of the acid generated by oxidiation of the iron sulfides is to be neutralised.	Principal Contractor

Mitigation ref	Action / requirement	Responsibility
ASS18	Lime will generally be applied at the rate recommended. If the recommended rate is over 20kg/tonne, lime will be placed in stages with field screening carried out between mixing events to avoid over liming.	Principal Contractor
Post-treatment verification		
ASS19	Post-treatment field screening will be carried out at a rate of 1 sample per 200m^3 of treated acid sulfate material.	Principal Contractor
ASS20	If post-treatment field screening results fail, additional lime is to be added at no more than 10kg per tonne at a time. The mixing and validation process is to be repeated.	Principal Contractor
ASS21	Once validation targets have been achieved, material may be disposed of on site or disposed of using the appropriate waste classification. Re-use on site is preferred.	Principal Contractor
Records		
ASS22	Records of ASS stockpiling and treatment will be maintained as part of a stockpile/ASS treatment register. The following information will be recorded: ▪ Date stockpile formed ▪ Date disposed ▪ Treatment or monitoring results (including pH results of untreated stockpiles) ▪ Reuse or disposal location and classification.	Principal Contractor

8.3.6 Dewatering

Dewatering can lead to in-situ development of ASS caused by oxidation because of groundwater changes. Dewatering is not considered a significant risk for the Project given the relatively shallow excavation proposed for construction of the Project, minimal dewatering requirements identified, short duration and the unlikely presence of ASS.

However, if future investigations or detailed design identifies a significant risk of in-situ ASS development from dewatering, the following mitigations will apply and will be incorporated into the Work Method Statement. If actual or potential ASS are encountered, additional dewatering controls will be required.

Mitigation ref	Action / requirement	Responsibility
ASS23	Monitoring for dewatering will include Groundwater levels and pH levels around dewatering zone commencing prior to dewatering, continuing throughout the activity and until water levels recover post dewatering.	Principal Contractor
ASS24	Water quality testing of discharge water is to occur in compliance with any licensing obligations. Any pH correction of acidic groundwater is to occur via approved methods.	Principal Contractor

8.3.7 Offsite transport and disposal of acid sulfate soil materials

Where potential acid sulfate materials are unable to be managed on-site the requirements of the Waste Classification Guidelines Part 4: Acid Sulfate Soils (NSW EPA, 2014) will be applied for off-site disposal.

8.4 Air quality

An Air Quality Management Plan is required for construction of the Project in accordance with Infrastructure Approval condition C1 and is provided in Appendix F.

8.5 Noise and vibration

Noise and vibration impacts associated with construction were modelled in the Noise and Vibration Impact Assessment as part of the EIS and Response to Submissions. Construction activities that could result in an increase to noise or vibration include:

- Cumulative impacts from all plant and equipment operating concurrently
- Increase in traffic volumes from both light and heavy-duty vehicles.

It is noted that there is a 1 dB exceedance predicted at NCA2 for phase 1 of construction and additional potential cumulative impacts with respect to the Noise Management Levels identified. These are predictions based on sound power levels assumed at the time of assessment. With this information there is guidance to the Principal Contractor that the noise mitigation measures already identified in the Construction Noise and Vibration Management Plan are required. The suite of mitigation measures are identified in Table 6-1 of that Plan. As such, no residential or non-residential exceedances are expected to occur as a result of either construction activity; however, a Construction Noise and Vibration Management Plan (CNVMP) has been developed to manage the noise and vibration risks associated with construction in accordance with Infrastructure Approval condition C1. The CNVMP has been developed in accordance with Infrastructure Approval Conditions B21 through B25 and is provided in **Appendix G**.

8.6 Waste

A Construction Waste Management Plan (CWMP) has been developed to manage the risks associated with waste generation and disposal during construction in accordance with Infrastructure Approval condition C1. The CWMP has been developed in accordance with Infrastructure Approval Conditions B44 and B45 and is provided in Appendix H.

8.7 Biodiversity

A Biodiversity Management Plan (BMP) has been developed to manage the risks to flora and fauna associated with construction. The BMP has been developed in accordance with Infrastructure Approval Condition B33 in consultation with BCS and is provided in Appendix I.

Impacts to flora and fauna due to dust will be mitigated through measures outlined in the Dust Management Plan Appendix F.

A Biodiversity Offset Plan has been prepared in accordance with the Infrastructure Approval Condition B34, which requires written evidence of the retirement of biodiversity credits for the respective ecosystem and species credit requirements.

8.8 Aboriginal heritage

A Cultural Heritage Management Plan (CHMP) has been developed to manage the risks to Aboriginal heritage associated with construction. The CHMP has been developed in accordance with Infrastructure Approval Conditions B43 in consultation with relevant RAPs and Heritage NSW – ACH, and is provided in Appendix J.

8.9 Non-Aboriginal heritage

No registered heritage items are located in, or within a one-kilometre radius of the Project Site. Construction is not expected to have a direct physical or visual impact on any nearby listed heritage items. Impacts as a result of construction are limited to unexpected finds.

The site boundary will be demarcated, to ensure that no works with the potential to impact on heritage items will take place outside the development footprint.

Measures that will be taken during the construction stage relating to Non-Aboriginal heritage are listed in Table 8-2.

Table 8-2: Non-Aboriginal heritage mitigation measures

EIS mitigation ref	Mitigation measure	Construction stage
NAH1	All contractors will be made aware of their obligations under the Heritage act 1977	▪ Installation of environmental controls ▪ Switchyard preparation ▪ Earthworks ▪ Any activity that has the potential to uncover items of heritage significance
NAH2, and Infrastructure Approval Condition B48	Should any unexpected non-Aboriginal heritage, including archaeological relics, be uncovered during construction, work will stop, and the area be cordoned off. A qualified archaeologist and if necessary, Heritage NSW will be contacted to assess the significance and advise on further requirements before work can recommence.	▪ Installation of environmental controls ▪ Switchyard preparation ▪ Earthworks ▪ Any activity that has the potential to uncover items of heritage significance

8.10 Traffic

A Traffic Management Plan (TMP) has been developed to manage the risks associated with the increase in traffic due to construction. The TMP has been developed in accordance with Infrastructure Approval Conditions B47 and B48 in consultation with Cessnock City Council and TfNSW and is provided in Appendix K.

8.11 Hazardous materials

The key impacts associated with hazardous materials during construction are risks associated with the transport and use of chemicals and diesel fuels on the construction site.

Table 8-3: Hazardous Materials Management

Measure / requirement	Stage	Responsibility
Consideration of hazards, risks and safety will be prioritised in the selection and design processes and equipment specifications, construction (as well as commissioning, and operation) (PHA1)	▪ Detailed design ▪ All construction	Snowy Hydro and Principal Contractor

Measure / requirement	Stage	Responsibility
The findings of the PHA and hazard table compiled during the risk workshop will be considered in future design stages and HAZOP workshops to minimise hazards and risks (PHA2)	▪ Detailed design ▪ All construction	Snowy Hydro and Principal Contractor
Minimise dangerous goods and hazardous chemical transport, storage, and handling at the Project Site	▪ Detailed design ▪ All construction	Principal Contractor
Hazardous materials surveys will be undertaken to inform construction planning	▪ Pre-construction	Principal Contractor
A spill response procedure will be developed as part of the Project's incident management protocols. The procedure and incident management protocols will detail processes, responsibilities and measures to manage hazardous substances and dangerous goods	▪ Pre-construction	Principal Contractor
An emergency response plan will be prepared and will include measures to manage emergency situations during construction	▪ Pre-construction	Principal Contractor
Compliance with AS 1940 for the storage and handling of all flammable and combustible liquids, including diesel fuel, including storage and handling of all chemicals, fuels and oils in accordance within a bunded area with a minimum bund capacity of 110% of the volume of the largest single stored vessel within the bund.	▪ All stages	Snowy Hydro and Principal Contractor
Ensure all chemicals, fuels and oils associated with construction (including during commissioning) are handled and stored in accordance with all relevant Australian Standards.	▪ All stages	Snowy Hydro and Principal Contractor
Handling and storage of hazardous liquids will be carried out in accordance with the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook	▪ All stages	Snowy Hydro and Principal Contractor
In the event of any inconsistency with the requirements above, the most stringent requirement shall prevail.	▪ All stages	Snowy Hydro and Principal Contractor
For the purpose of condition B17 (storage and handling of chemicals fuels and oils), any tanks or other storage vessels that are interconnected and may distribute their contents either by gravity or automated pumps must be considered a single vessel.	▪ All stages	Snowy Hydro and Principal Contractor

8.12 Landscape and visual

The overall visual impact of the Project is low due to the existing landscape character and sensitivity surrounding the Project Site, and limited visibility from sensitive viewing locations.

Construction activities will be visible from a section of Hart Road and Dickson Road as well as a limited number of other elevated locations. Visual impacts of construction activities will be temporary, short in duration, and limited to low viewer numbers.

The mitigation measures in Table 8-4 will be regularly inspected and audited.

Measures to reduce potential impact to visual amenity are included in Table 8-4.

Table 8-4: Landscape and Visual Managment Controls

Measure / requirement	Construction stage	Responsibility
Off-site visual impacts of the development, including the potential for any glare or reflection must be minimised (Infrastructure Approval Condition B49(a)) ▪ Lights will be turned off when not needed, including security lights. ▪ Sensor switches will be installed for permanent lighting on outside lights. ▪ Lights will be located as far as possible from neighbours and away from sensitive areas. ▪ Existing features surrounding the site will be used to hide the light source from view. ▪ Wherever possible, direct light downwards to illuminate the target area, and if there is no alternative to up-lighting, fit shields and baffles to help keep spill light to a minimum.	▪ Design ▪ Site preparation	Snowy Hydro Principal Contractor
Surfaces and finishes for the Project and associated infrastructure will be designed to reduce visual bulk and contrast of large surfaces and elements and allow them to blend into the context of the surrounding area (LV1 and Infrastructure Approval Condition B49(b))	▪ Design	Snowy Hydro
Offsite impacts due to light spill from security lighting will be minimised by adhering to Australian Standards (AS/NZ 4282:2019 Control of the obtrusive effects of outdoor lighting) (LV2 and Infrastructure Approval Condition B50(a,b)	▪ Design ▪ Site preparation	Snowy Hydro Principal Contractor
No commercial advertising signs or logos to be placed on site except for safety purposes (Infrastructure Approval Condition B49(c)	▪ All stages	Snowy Hydro Principal Contractor
Any external lighting associated with the development will be installed as low intensity lighting (except where required for safety or emergency purposes)	▪ Design ▪ Implementation	Snowy Hydro Principal Contractor

8.13 Bushfire risk

8.13.1 Bushfire risk management

The Project Site is flat and mostly cleared of vegetation and is adjacent to bushfire-prone vegetation to the north and west. An allowance for a 10 m asset protection zone as part of the bushfire hazard reduction is to be put in

place, as well as controls for bushfire fuel reduction and restrictions on high-risk construction activities identified in the Hazard Analysis taking place on total fire ban days.

Bushfire protection during construction will be covered as part of the Project/Site Induction and includes the following information:

- *Site Asset Protection Zone (APZ)* - An APZ will be established to the northwest and northeast of the site as site early works as per the Biodiversity Management Plan to ensure access for emergency vehicles and to provide separation for the Project Site from the surrounding bushfire hazard.
- *Site clearance:* the Project Site is a brownfield site that is largely devoid of bushfire prone vegetation. Most of the site would have low radiant heat exposure to any fire in nearby vegetation and any embers entering the site are unlikely to find sufficient fuel for a spot fire to establish. In case of an approaching fire in the vegetation to the north and west of the Project Site, workers could safely retreat towards the south-east, without necessarily needing to evacuate.
- *Strategic Fire Advantage Zone (SFAZ):* management of bushfire fuel hazard in the surrounding landscape by NSW Rural Fire Service (RFS) should moderate the behaviour of a fire, should one ignite, and reduce the threat it poses to construction personnel. The Hunter BFRMP (Hunter BFMC, 2009) identifies a SFAZ around the former Hydro Aluminium facility. The SFAZ includes areas of native vegetation and cleared land that surround the Project Site. Bushfire fuel hazard in these areas is actively maintained (by RFS) by periodic hazard reduction burning in the larger blocks of native vegetation. This is designed to moderate fire behaviour and reduce the risks posed to people and infrastructure by radiant heat and embers.
- *Access:* in the event of a fire, emergency services would access the site via Hart Road. External access (prior to construction of the proposed APZ access track) would be via the existing formal and informal track network.
- *Fire water supply:* the Project Site would have access to potable water from Hunter Water. A standpipe or connection point would be provided to enable fire response vehicles to refill in case of fire.
- *Hot works controls:* works that have potential to generate sparks and ignite fires would be subject to the contractor's hot works safety management procedures and could only be undertaken on TOBAN days if a permit is obtained from the RFS.

Bushfire management will be considered and addressed in the Principal Contractor's Emergency Response Plan.

9. Appendices

Appendix A. Infrastructure Approval conditions

Appendix B. Legislative Obligation Summary

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Environmental Planning and Assessment Act 1979 (E&PA Act)	All	Establishes the planning and approvals process in NSW and provides for the making of Environmental Planning Instruments. The Project was declared by the Minister for Planning and Public Spaces to be Critical State Significant Infrastructure (CSSI) on 12 December 2020 and requires approval from the Minister for Planning (formerly Planning and Public Spaces) before it may proceed.	Overarching legislation for EIS process, including all relevant environmental impact assessments, identification of environmental risk and risk mitigation measures, which form components of the CEMS and all associated management plans.	Yes	Yes	Yes
Environmental Planning and Assessment Regulation 2000 (EPA Regulation)	All	Provides the form and content requirements for the EIS, which is reflected in the SEARs	Overarching regulations for EIS process, including all relevant environmental impact assessments, identification of environmental risk and risk mitigation measures which form components of the CEMS and all associated management plans.	Yes	Yes	Yes

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	All	The Project has the potential to impact Matters of National Significance (MNES) related to biodiversity, and because Snowy Hydro is a Commonwealth Agency, this Project is deemed a controlled action. Key actions that may result in a significant impact to the environment include: 1) Generation of emissions and pollutants that would impact air quality Potentially disturbing contaminated and or/acid-sulfate soils with potential flow on impacts to surface or groundwater	Potential impacts to biodiversity, contaminated land, and air quality were assessed in the EIS, and fulfill the requirements under the EPBC Act through a Bilateral Agreement. Mitigation measures defined in the EIS are incorporated into the CEMS in Sections 8.2 through 8.13, and in the associated CEMS plans.	Yes	Yes	Yes

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Protection of the Environment Operations Act 1997	Pollution and waste	All scheduled activities within Schedule 1 of the POEO Act require an Environment Protection Licence (EPL). This project qualifies under two categories: 1) General Electricity Works 2) Metropolitan electricity works (gas turbines) An EPL cannot be issued until a Planning Approval is secured.	EPL conditions are outlined in Section 4.4 of the CEMS and are included in associated management plans where required. A Pollution and Incident Response Management Plan will be prepared by the holder of the EPL	Yes	Yes	Yes
Airports Act 1996 & Airports (Protection of Airspace) Regulations 1996	Air quality Hazards	Airspace at and around airports are protected under this Act and Regulations; none of the three airports in the vicinity of the Project meet the criteria required for additional assessment, but the Project's exhaust stacks have been assessed for any potential intrusions on the airport's airspace.	No construction obligations required, but stakeholder consultation will continue through the operational stage of the Project. Inclusion in OEMP will be considered.	Yes	No	Consider

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Aviation hazard – Civil Aviation Safety Regulation 1998	Air quality Hazards	Duty to assess potential hazards and dangers to aviation where vertical exit velocity from gas efflux or exhaust plum exceeds 6.1m/s. An Aeronautical Impact and Risk Assessment of the Plume Rise was conducted for the EIS. Not applicable to construction stage of Project.		Yes	No	Consider
Native Title Act 1993	Cultural Heritage	Recognizes and protects native title rights that may allow Indigenous people to continue to hold rights to land and water. No Native Title applications were identified that affect the Project area.		No	N/A	N/A
State Environmental Planning Policy (State and Regional Development) 2011	All	Clause 24 of Schedule 5 refers to the "development for the purposes of Kurri Kurri Gas Fired Power Station Project' as being Critical State Significant Infrastructure (CSSI) and will require approval under Division 5.2 of the EP&A Act. Planning instruments do not apply to the Project, but supplemental instruments are to be considered in the environmental assessments in conjunction with SEARs.		Yes	No	No
State Environmental Planning Policy (Infrastructure) 2007	Land planning	Clause 34 of the SEPP (Infrastructure)(ISEPP) states development for the purpose of electricity generating works may be carried with consent on any land in a rural, industrial, or special use zone. Future zoning of the project site is expected to by IN3-Heavy Industrial. The Project is permissible with consent under the provision of the ISEPP.		Yes	No	No

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) *Section 5.22*		Developers are required to assess the hazards and risks associated with a proposed development before approval is given for construction and operations. While s5.22 of the EP&A Act, SEPP 33 does not formally apply to the Project, a Preliminary Hazard Analysis (PHA) was prepared as part of the EIS.	Recommendations and mitigations measurers to minimize or eliminate hazards during construction and operation will be taken into consideration for the CEMS and OEMP.	No	Yes	Yes
State Environmental Planning Policy (Koala Habitat Protection) 2019	Flora and fauna (koalas)	The Koala Habitat SEPP applies to all local government areas in Schedule 1, which includes the City of Cessnock. A biodiversity study was conducted and included in the biodiversity impact assessment as part of the EIS.	Recommendations and mitigations measurers to minimize or eliminate risks to the koala population during construction and operation will be taken into consideration for the CEMS and OEMP.	Yes	Yes	Yes

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
State Environmental Planning Policy No. 55 – Remediation of Land		SEPP 55 provides an approach to the remediation of contaminated land, to reduce the risk of harm to human health and the environment. While s5.22 of the EP&A Act, SEPP 55 does not formally apply to the Project, a contamination assessment was prepared as part of the EIS.	Recommendations and mitigations measurers to minimize or eliminate hazards during construction and operation will be taken into consideration for the CEMS and OEMP.	No	Yes	Yes
Cessnock Local Environmental Plan 2011	Land planning	The Project site is within the LGA of the City of Cessnock in Loxford, which is currently zoned RU2 Rural Landscape under the Cessnock Local Environmental Plan 2011 (LEP). This project would be permitted within the RU2 zone, and given it is classified as a CSSI, land use and permissibility requirements under the LEP do not apply. Efforts to rezone part of this area to IN3 will have no effect on the Project's statutory planning framework or approvals.		No	N/A	N/A

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Biodiversity Conservation Act 2016	Flora and fauna	Part 7 of the BC Act requires an application for CSSI approval under the EP&A Act is accompanied by a Biodiversity Development Assessment Report (BDAR).	A BDAR was prepared as part of the EIS process that determined potential biodiversity values that have the potential to be impacted by the Project. Mitigation measures to address potential impacts during construction are to be included in the Biodiversity Management Plan as part of the CEMS.	Yes	Yes	Yes
Heritage Act 1977	Cultural heritage Historical heritage	An approval or excavation permit is not required for approved SSI.	A Cultural Heritage assessment was conducted for the EIS. Mitigation measures to address potential impacts during construction are to be included in the CHMP as part of the CEMS.	Yes (assessment only, no permit)	Yes	No

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Aboriginal Land Rights Act 1983	Cultural heritage	Act established Aboriginal Land Councils at the State and local levels and have a statutory obligation to both take action to protect culture and heritage of Aboriginal people, and to promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area. The project site is within the boundary of the Awabakal LALC.	The Project Site is not subject to a claim under the Aboriginal Land Rights Act.	No	No	No
National Parks and Wildlife Act 1974	Cultural heritage	Section 86 states it is an offence to harm or desecrate an Aboriginal object or place.	A Cultural Heritage assessment was conducted for the EIS. Mitigation measures to address potential impacts during construction are to be included in the CHMP as part of the CEMS.	Yes	Yes	No
Protection of the Environment Operations Act 1997	All	Schedule 1 require an environment protection licence (EPL). This project qualifies under: 1) General electricity works 2) Metropolitan electricity works (gas turbines) An EPL is required for the operational stage of the Project.		Yes	No	Yes

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Protection of the Environment Operations (Clean Air) Regulation 2010	Air quality	Air emissions limits for solid airborne particles, Nitrous dioxide, and Sulphur dioxide, and fuel Sulphur content.	An Air Quality Impact Assessment was conducted for the EIS. Mitigation measures to address impacts to air quality are to be included in the Air Quality Management Plan as part of the CEMS, which includes management of dust and vehicle emissions	Yes	Yes	Yes
NSW EPA policy – air quality assessments	Air Quality	Approved methods for Air Quality modelling and assessing emissions of air pollutants for NSW.	These standards were incorporated in the Air Quality Impact Assessment as part of the EIS. Mitigation measures to address impacts to air quality are to be included in the Air Quality Management Plan as part of the OEMP, and will include requirements for air quality monitoring and modelling	Yes	No	Yes

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
NSW EPA Policy - Noise	Noise	Noise management levels (NMLs) are recommended for standard and non-standard construction hours. Construction considered to cause a noise impact if the predicted noise exceeds the applicable NML. Requirement for increase in total traffic noise from construction limited to 2dB above background noise levels.	A Noise and Vibration assessment was conducted for the EIS. Mitigation measures to address potential impacts during construction are to be included as part of the CEMS. Mitigation measures to address potential impacts during operation are to be included as part of the OEMP.	Yes	Yes	Yes
Pipelines Act 1967 (NSW) Part 3	Land planning	Not applicable; gas lateral pipeline not within construction scope of this project		No	N/A	N/A
Roads Act 1993 Section 138	Traffic	Not applicable, as Project is classified a Critical State Significant Infrastructure Project (CSSI)		No	N/A	N/A
Rural Fires Act 1997	Bushfire Risk	Projects located on bushfire prone land that are a CSSI do not require a bush fire safety authority to authorize the Project under s100B.		No	N/A	N/A
Water Act 1912 Water Management Act 2000	Water	The Water Act 1912 is limited to where the Water Management Act 2000 applies. This Project will use potable water mains for construction and operation; therefore, no approvals or licences are required under this legislation.		No	N/A	N/A
Environment and Protection Act Section 5.23(1)(g)	Water	A water management work approval is not required for approved SSI, including CSSI.		No	N/A	N/A

Legislation	Environmental Aspect	Description of relevance to Hunter Power Project	Implication for CEMS	Applicable to Project	Applicable to CEMS	Applicable to OEMP
Hunter Water Regulations 2015	Water	Division 2 of the Regulations requires regulation of activities within certain areas of the Hunter Region ('special areas'). This Project is not within a special area, and will require an EPL; therefore, Division 2 of the Regulations do not apply.		No	N/A	N/A

Appendix C. Standards and Guidelines

Environmental Aspect	Guideline/Standard
Biodiversity	▪ *Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method* (Department of Planning, Industry and Environment, 2020c) ▪ *Threatened species survey and assessment guidelines: field survey methods for fauna – Amphibians* (Department of Environment and Climate Change, 2009) ▪ *NSW Surveys Guide for Threatened Frogs - A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method* (Department of Planning, Industry and Environment, 2020a) ▪ *'Species-credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method* (State of NSW and Office of Environment and Heritage, 2018) ▪ *Policy and guidelines for fish habitat conservation and management – Update 2013* (NSW Department of Primary Industries, 2013) ▪ *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (Fairfull and Witheridge, 2003) ▪ *EPBC Act Policy Statement 1.1 Significant Impact Guidelines* (Department of Environment, 2013) ▪ *EPBC Act Policy Statement 3.21-Industry guidelines for avoiding, assessing, and mitigating impacts on EPBC Act listed migratory shorebird species* (Department of the Environment, 2015) ▪ *Saving our Species Hygiene Guidelines* (State of New South Wales and Department of Planning, Industry and Environment, 2020b) ▪ *Ecology and Management of Vertebrate Pests in NSW,* (NSW Department of Primary Industries, 2018) ▪ *Saving our Species Monitoring, Evaluation and Reporting Guidelines for conservation projects* (Office of Environment and Heritage NSW 2018b)
Cultural Heritage	▪ *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (Department of Environment, Climate Change and Water* (DECCW, 2010a) ▪ *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010b) ▪ *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (Office of Environmental and Heritage (OEH, 2011) ▪ *NSW Heritage Manual* (Heritage Office and department of Urban Affairs and Planning, 1994) ▪ *Statements of Heritage Impact* (Heritage Office and department of Urban Affairs and Planning, 2002) ▪ *Assessing Heritage Significance* (NSW Heritage Office, 2001) ▪ *The Burra Charter* (The Australia ICOMOS charter for places of cultural significance)

Environmental Aspect	Guideline/Standard
Air Quality	▪ NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2016) ▪ Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, 2005) ▪ Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006) ▪ National Greenhouse Accounts Factors (Commonwealth)
Groundwater	▪ NSW State Groundwater Policy Framework Document and component policies (DPI) ▪ NSW Aquifer Interference Policy 2012 (DPI) ▪ National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC) ▪ Guidelines for Development in the Drinking Water catchments (Hunter Water, 2017)
Surface Water	▪ NSW State Rivers and Estuary Policy (DPI Water) ▪ NSW Government Water Quality and River Flow Objectives ▪ ANZECC Guideline and Water Quality Objectives in NSW (Dec, 2006) ▪ Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) ▪ Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DECC, 2008) ▪ Managing Urban Stormwater: Soils and Construction (Landcom) ▪ Technical Guidelines: Bunding and Spill Management (EPA) ▪ NSW Guidelines for Controlled Activities (various) (DPI)
Contamination	▪ State Environmental Planning Policy NO. 55 – Remediation of Land ▪ Managing Land Contamination – Planning Guidelines SEPP 55- Remediation of Land (EPA) ▪ Guidelines for Consultants Reporting on Contaminated Sites (EPA) ▪ Contaminated Sites Sampling Design Guidelines 1995 (EPA) ▪ Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC) ▪ National environment Protection (Assessment of Site Contamination) Measure 1999 (with amendment April 2013) ▪ Acid Sulfate Soils Manual (OEH) ▪ Australian and New Zealand Guidelines for Fresh and Marine Water Quality (EPA)

Environmental Aspect	Guideline/Standard
Land and Soils	▪ Managing Urban Stormwater: Soils & Construction (Landcom) ▪ Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010) ▪ The land and soil capability assessment scheme: Second approximation (OEH) ▪ Guidelines for Surveying Soil and Land Resources (CSIRO) ▪ Australian Soil and Land Survey Handbook (SCIRO) ▪ Soil and Landscape Issues in Environmental Impact Assessment (DPI) ▪ Acid Sulfate Soil Manual, NSW Acid Sulfate Soil Management Advisory Committee, 1998 ▪ Waste Classification Guidelines Part 4: Acid Sulfate Soils (NSW EPA, 2014). This part of the EPA Waste Classification Guidelines applies to acid sulfate soils which are unable to be managed on-site ▪ National Environment Protection (Assessment of Site Contamination) Measure 1999.
Noise and Vibration	▪ NSW Noise Policy for Industry (EPA) ▪ NSW Road Noise Policy and associated Application Notes (EPA) ▪ Interim Construction Noise Guideline (DECCW, 2009) ▪ Assessing Vibration: a Technical Guideline (DEC, 2006) ▪ German Standard DIN 4150-3: Structural Vibration – effects of vibration on structures ▪ Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (ANZECC, 1990)
Transport	▪ Road and Related Facilities within the Department of Planning EIS Guidelines ▪ Guide to Traffic Generating Projects (RMS) ▪ Road Design Guide (RMS) and relevant Austroads Standards ▪ Austroads Guide to Traffic Management Part 12: Traffic Impacts of Project
Visual	▪ AS4282-1997 Control of the obtrusive effects of outdoor lighting
Hazards and Risks	▪ State Environmental Planning Policy No. 33 – Hazardous and Offensive Project ▪ Hazardous and Offensive Project Application Guidelines – Applying SEPP 33 ▪ Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning ▪ Hazardous Industry Planning Advisory Paper no. 6 – Guidelines for Hazard Analysis ▪ Hazardous Industry Planning Advisory Paper NO. 11 – Route Selection ▪ AS2885 Pipelines – Gas and Liquid Petroleum, Operation and Maintenance ▪ Planning for Bushfire Protection (NSW RFS) ▪ Advisory Circular AC 139-05 v3.0 Plum Rise Assessments (CASA)
Waste	▪ Waste Classification Guidelines (EPA)

Appendix D. Environment Mitigation Measures

The follow table contains the mitigation measures contained in the Environmental Impact Assessment report for the Project. This appendix only includes those mitigation measures relevant to construction.

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
Biodiversity	B1	The Construction Environmental Management Plan for the Project will include procedures for the demarcation and protection of retained vegetation, including all vegetation outside and adjacent to the construction footprint.	Biodiversity Management Plan
	B2	A pre-clearing inspection will be conducted by a suitably qualified ecologist to confirm the demarcation of limits of clearing are in place, and procedures for the clearing of vegetation and the relocation of flora and fauna.	Biodiversity Management Plan
	B3	A post clearance report, including any relevant Geographical Information System files, will be produced that validates the area of vegetation cleared.	Biodiversity Management Plan
	B4	The Construction Environmental Management Plan for the Project will include weed management and control measures in accordance with the *Biosecurity Act 2015*.	Biodiversity Management Plan
	B5	The Construction Environmental Management Plan for the Project will include pathogen management measures to prevent introduction and spread of amphibian chytrid fungus, *Phytophthora cinnamomi* and Exotic Rust Fungi.	Biodiversity Management Plan
Aboriginal Heritage	AH1	During site inductions for the Project's construction, all members of the construction workforce will undergo cultural awareness training. The training, to be coordinated by the Contractor's Environmental Manager, will incorporate material provided by the RAPs, with the specific aim of raising awareness of the cultural heritage values held by the local Aboriginal community, in respect of the Project Site and surrounding land.	Cultural Heritage Management Plan

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
	AH2	In the areas where the deep alluvium will be impacted through piling or bulk excavation works for the Project, this will be monitored by an archaeologist and a representative of the Registered Aboriginal Parties (RAPs). Any Aboriginal objects uncovered during these activities will be collected and their location recorded on AHIMS, in accordance with s89a of the *National Parks and Wildlife Act 1974*. The artefact assemblage would be temporarily stored and analysed. Long term management of those objects will be determined by the RAPs.	Cultural Heritage Management Plan
	AH3	If skeletal remains are uncovered during the course of works, all work must stop immediately in the vicinity of the remains and the area secured, so that no further harm occurs. ▪ If it is identified that the skeletal remains are likely to be human and are likely to represent a crime scene, the NSW Police must be called in the first instance. The NSW Police will determine the appropriate course of action. ▪ If it is identified that the skeletal remains are likely to be human and are likely to represent Aboriginal ancestral remains, or human remains that would require consideration under the *Heritage Act 1977* (both Aboriginal and non-Aboriginal), both the NSW Police and Heritage NSW must be called. Heritage NSW will determine the appropriate course of action.	Cultural Heritage Management Plan
	AH3 (cont)	▪ Work may not recommence in this area until either NSW Police or Heritage NSW provide authorisation. ▪ If the remains are identified as Aboriginal, discussions and negotiations would need to occur with the relevant Aboriginal communities and Heritage NSW to determine the most appropriate course of action. These discussions would be led by Heritage NSW. ▪ If it is identified that the skeletal remains are not human, appropriate recording must take place and works can continue.	Cultural Heritage Management Plan
	NAH1	All contractors and subcontractors will be made aware of their obligations under the *Heritage Act 1977*.	CEMS Section 8.8

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
Non-Aboriginal Heritage	NAH2	Should any unexpected non-Aboriginal heritage items be uncovered and identified during the proposed works, works will cease, and the project area be cordoned off. A qualified archaeologist and, if necessary, Heritage NSW (in accordance with s146 of the *Heritage Act 1977*) would be contacted to assess significance and advise on further requirements before work can recommence.	CEMS Section 8.8
Hazard and Risk	PHA1	Consideration of hazards, risks and safety will be prioritised in the selection and design processes and equipment specifications, construction, commissioning, and operation	CEMS Section 8.10
	PHA2	The findings of the PHA and hazard table compiled during the risk workshop will be considered in future design stages and HAZOP workshops to minimise hazards and risks.	CEMS Section 8.10
Bushfire	BF1	Bushfire risk during construction will be managed in accordance with the Hunter Bush Fire Management Committee's (BFMC) Bush Fire Risk Management Plan (BFRMP; Hunter BFMC, 2009). Site bushfire emergency management arrangements will be addressed through the Principal Contractor's site emergency management plan detailing site evacuation protocols, emergency vehicle access, and water supply for fire fighting	CEMS Section 8.12
	BF2	Hot works controls: the Contractor will prepare and implement hot works safety management procedures. Works having the potential to generate sparks or ignite fires will be undertaken on total fire ban days only in accordance with a permit from the NSW Rural Fire Service.	CEMS Section 8.12
	BF3	Bushfire fuel hazard in the surrounding landscape will be managed in accordance with the Hunter Bush Fire Risk Management Plan. A 10 metre Asset Protection Zone will be established for the Project Site, consistent with: ▪ *ISSC3 Guide for the management of vegetation in the vicinity of electricity assets (*Industry Safety Steering Committee [ISSC], 2016, specifications for APZ for substations/switchyards) ▪ *Planning for Bushfire Protection* (NSW RFS, 2019) specifications for renewable energy generation facilities.	CEMS Section 8.12

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
Contaminated Land	CLM1	A hazardous materials and spill management plan will be prepared as a sub-plan of the CEMS. It will outline requirements relating to the storage of fuels and chemicals, waste management, as well as training and procedures for incident and spill response.	Water Management Plan
Groundwater	GW1	The Construction Environmental Management Plan for the Project will address temporary storage and handling of fuels, oils, and chemicals, including a Spill Response Plan.	Water Management Plan
	GW2	Subject to the outcomes of further geotechnical and groundwater investigations across the site to during detailed design, a dewatering procedure is to be prepared and implemented in the event of excavations encountering perched or shallow groundwater. These detailed design investigations are to also inform the need for excavation methods to address groundwater inflows, if necessary.	Water Management Plan
	GW3	Excavation activities will implement testing and management procedures for potential ASS. The procedures will be set out in an ASS management plan, which will be prepared during detailed design.	CMS Section 8.3
Surface Water	SW1	A construction erosion and stormwater management plan will be prepared as a sub-plan of the CEMS in accordance with the principles and requirements of *Managing Urban Stormwater – Soils and Construction, Volume 1* (Landcom, 2004), commonly referred to as the "Blue Book". It will outline measures to manage soil and water impacts including measures to minimise/manage erosion and sediment transport, dust control, design, and maintenance of sediment basin/s, dewatering of construction sediment basins and discharge criteria, and management of accidental spills.	Water Management Plan
	SW2	A construction surface water monitoring program will be developed and implemented during construction in accordance with the ANZG (2018) water quality guidelines.	Water Management Plan
Hydrology and flooding	HF1	The construction erosion and stormwater management plan will incorporate procedures and schedule for monitoring of the receiving waterway (tributary of Black Waterholes Creek) downstream of the discharge location(s) to identify any evidence of channel erosion and scour	Water Management Plan
Air Quality	AQ1	A dust management plan will be developed by the nominated Principal Contractor and included with the construction environmental management plan for the project.	Air Quality Management Plan

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
	AQ2	Construction plant and equipment will be well maintained and regularly serviced so that vehicular emissions remain within relevant air quality guidelines and standards.	Air Quality Management Plan
Noise and Vibration	NV1	A Construction Noise and Vibration Management Plan (CNVMP) will be developed to manage noise during construction. This will include consideration of plant selection, construction hours, plant maintenance, construction traffic and transport, staff awareness, construction staging and monitoring.	Noise and Vibration Management Plan
Traffic and access	TT1	A Construction Traffic Management Plan will be prepared and implemented by the Principal Contractor. The CTMP will include: ▪ Confirmation of haulage routes ▪ Access to construction sites including entry and exit locations ▪ Times of transporting to minimise impacts on the road network ▪ Measures to minimise the number of workers using private vehicles ▪ Employment of standard traffic management measures to minimise short-term traffic impacts expected during construction ▪ Management of oversized vehicles ▪ Site specific traffic control measures (including signage) to manage and regulate traffic movement ▪ Relevant traffic safety measures including driver induction, training, safety measures and protocols ▪ Identify requirements for, and placement of, traffic barriers. ▪ Requirements and methods to consult and inform the local community of impacts on the local road network due to the development-related activities ▪ Consultation with Transport for NSW and Council ▪ Consultation with the emergency services to ensure that procedures are in place to maintain safe, priority access for emergency vehicles ▪ A response plan for any construction related traffic incident ▪ Monitoring, review, and amendment mechanisms.	Traffic Management Plan

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
	TT2	To manage oversize overmass (OSOM) vehicle movements, a permit will be sought from the NHVR and a separate OSOM Transport Management Plan will be prepared and will include: ▪ Identification of route ▪ Measures to provide an escort for the loads ▪ Times of transporting to minimise impacts on the road network ▪ Communication strategy and liaising with emergency services and police.	Traffic Management Plan
	TT3	Affected parties including emergency services will be notified in advance of any disruptions to traffic and restriction of access impacted by the Project's construction activities.	Traffic Management Plan
Landscape character and visual impact	LV1	Surfaces and finishes for the Project and associated infrastructure will be designed to reduce visual bulk and contrast of large surfaces and elements and allow them to blend into the context of the surrounding area. This may include incorporating contemporary finishes, articulation in long elevations or large facades, alternating colours, or use of contrasting materials.	CEMS Section 8.11
	LV2	Offsite impacts due to light spill from security lighting will be minimised by adhering to Australian Standards (AS/NZ 4282:2019 Control of the obtrusive effects of outdoor lighting), implementing measures such as baffling, downward direction of lighting and sensor-triggering lighting to minimise lighting duration.	CEMS Section 8.11
Waste	W1	A Construction Waste Management Plan (CWMP) will be developed and implemented prior to construction commencement. This will include consideration of a waste management hierarchy, mitigation strategies (avoidance, mitigation, reuse, recycle or disposal), use of materials with minimal packaging requirements, removal of packaging offsite and fabrication of parts offsite and appropriate segregation of any waste materials.	Waste Management Plan
	W3	Any waste that cannot be recovered or recycled will be sorted and taken to a licenced treatment or disposal facility where it will be treated and disposed of according to its classification	Waste Management Plan

Environmental aspect	EIS reference	Mitigation measures	Relevant management plan
	W4	An audit regime will be implemented, in accordance with the Proponent's Health and Safety Environmental Management System during construction and operation which includes (but not limited to) quantities of waste, storage areas and contractor services.	Waste Management Plan

Appendix E. Water Management Plan

Appendix F. Construction Air Quality Management Plan

Appendix G. Construction Noise and Vibration Management Plan

Appendix H. Construction Waste Management Plan

Appendix I. Biodiversity Management Plan

Appendix J. Cultural Heritage Management Plan

Appendix K. Construction Traffic Management Plan

Appendix L. Construction Monitoring Program