



Hunter Power Project
Construction Air Quality Management Plan

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Hunter Power Project

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Glossary of terms

Term	Meaning
EPA Regulation	Environmental Planning and Assessment Regulation 2000
Mitigation	Action to reduce the severity of an impact
Principal Contractor	The Contractor engaged by Snowy Hydro Limited, who has control over the construction phase of the Project, and who will plan, manage, monitor and coordinate Health, Safety and Environment activities
The Project	The Hunter Power Project; formerly referred to as the Kurri Kurri Power Station Project
Project Site	The area of land that is directly impacted on by a development, including access roads, and areas used to store construction material
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)
Significant	Greater than 20% concentration value difference between impact site and reference site

Abbreviations

Abbreviation	Meaning
AQMP	Air Quality Management Plan
CEMS	Construction Environmental Management Strategy
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979 (New South Wales)
kV	kilovolt
km	kilometres
km/hr	kilometres per hour
LEP	Local Environmental Plan
m/s	Metres per second
MW	Megawatts
NEM	National Electricity Market
NSW	New South Wales
OCGT	Open Cycle Gas Turbine
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
The Project	The Hunter Power Project; formerly referred to as the Kurri Kurri Power Station Project
Project Site	The area of land that is directly impacted on by a development, including access roads, and areas used to store construction material
Proponent	Snowy Hydro Limited
Secretary	Planning Secretary under the EP&A Act, or nominee
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)
TARP	Trigger Action Response Plan

1. Introduction

This Air Quality Management Plan (AQMP) has been prepared for the construction phase of the Hunter Power Project (the Project) and is a management plan within the Construction Environmental Management Strategy (CEMS).

The objectives of this AQMP are to:

- Identify the potential impacts of the Project construction on the local air quality environment
- Detail the controls to be implemented to minimise construction air quality impacts
- Maintain compliance with Infrastructure Approval conditions, environmental protection licence and relevant legislation relating air quality.

Due to the nature of the activities undertaken during construction, this plan addresses dust and vehicle emissions.

As per Infrastructure Approval Condition C21 – staged plans, Snowy Hydro Limited (Snowy Hydro) will develop an AQMP as part of the Operational Environmental Management Plan. The operational AQMP will address air emissions during commissioning and operation, and will be submitted for approval by the Secretary prior to commissioning.

1.1 Project overview

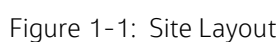
Snowy Hydro ('the Proponent') proposes to develop a gas fired power station near Kurri Kurri, New South Wales (NSW) ('the Project'). The Project involves the construction and operation of an open cycle gas turbine power station and electrical switchyard, together with other associated infrastructure. A layout of the Project is provided in Figure 1-1.

The Project Site address is 73 Dickson Road, Loxford. Access to the property is via Hart Road and the property is approximately 1.0 kilometres (km) from the M15 Hunter Expressway.

The major supporting infrastructure that is part of the Project would be a 132 kilovolt (kV) electrical switchyard located within the Project Site. The Project would connect into the existing 132 kV electricity transmission infrastructure located adjacent to the Project Site. Other supporting infrastructure elements of the Project include:

- Storage tanks and other water management infrastructure
- Fire water storage and firefighting equipment such as hydrants and pumps
- A permanent stormwater retention basin
- Maintenance laydown areas
- Diesel fuel storage tank(s) and truck unloading facilities
- Site access roads and car parking
- Office/administration buildings and amenities
- Workshop/storage areas.

Construction activities are anticipated to commence early 2022 and the Project is intended to be operational by the end of 2023. Project commissioning is not considered a construction activity and will be addressed in the Operational AQMP.



1.2 Context

The Project Site is within the broader property that is the former Hydro Aluminium smelter, which is highly disturbed and currently a construction site. While the broader property is outside of the Project Site and scope of this AQMP, the construction activities on the broader property are already industrial in nature and involve remediation and waste transport (internal to the site) as part of the property preparation for subsequent industrial users.

The Project Site and broader property would, after construction activities are completed, be part of a proposed Industrial Estate development. The proposed rezoning and subdivision around and including the Project Site would likely result in a new land use zoning and property description applying to the Project Site. The planning proposal, currently under consideration by Cessnock City Council and the NSW Department of Planning, Industry and Environment (DPIE), includes rezoning 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.

1.3 Construction activities

The key construction activities for the Project are summarised in Table 1-1, and Section 5 describes the impacts and risks associated with air quality.

Project commissioning, as an operational activity, will be addressed in the AQMP as part of the Operational Environment Management Plan.

Table 1-1: 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	<ul style="list-style-type: none"> Installation of environmental controls, which may include: temporary sheds, amenities, fencing, erosion and sediment controls, laydown/stockpiling areas, site surveys and, initial internal road building 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 -	<ul style="list-style-type: none"> Clearing of vegetation

Construction stage	Construction activity per program	Activity details
Site establishment and construction	Earthworks to prepare the Project Site and construction areas	<ul style="list-style-type: none"> 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) 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	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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
Post-construction/demobilisation	Demobilisation	<ul style="list-style-type: none"> Removal of construction equipment, site fencing and construction compounds Installation and establishment of landscaping

1.4 Construction program

The initial phase of construction to establish and prepare the Project Site is expected to commence in early 2022 pending approval of the Project. An indicative program for construction is shown in Figure 1-2.

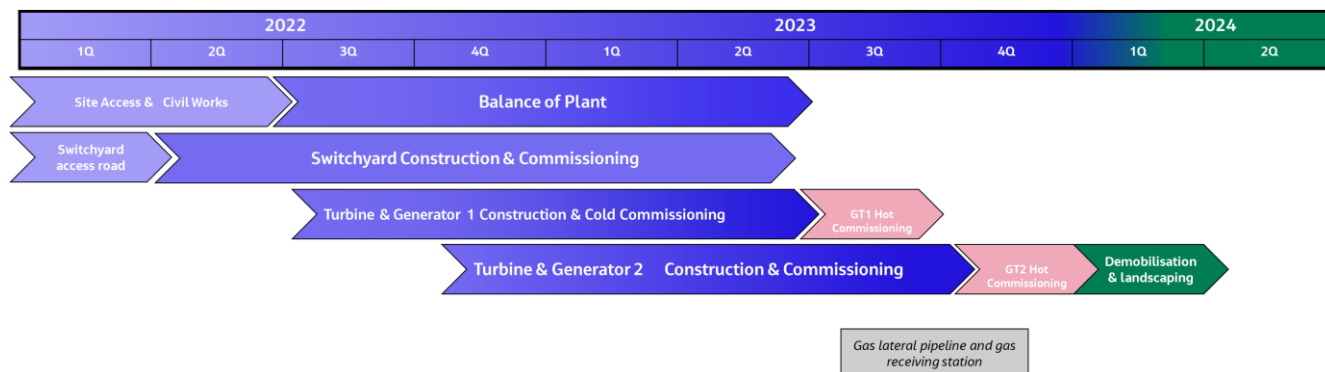


Figure 1-2: Construction program

1.5 Relationship to Construction Environmental Management Strategy

There are two primary interrelationships of this AQMP to other regulatory documents, which are outlined below.

Construction Environmental Management Strategy (CEMS)

A CEMS is required by Infrastructure Approval Condition C1, and an AQMP prepared in consultation with the NSW Environmental Protection Authority (EPA) is required as a sub-plan to the CEMS.

The CEMS will provide for the overarching management requirements for the Project. The CEMS will demonstrate systems and procedures to ensure that controls are established and maintained to manage the potential environmental impacts, compliance and performance through the construction phase of the Project in accordance with the Project approval and applicable legislative requirements.

Environment Protection Licence (EPL) for Scheduled Development Work

Any requirements relating to construction dust management and air quality included in the EPL for Scheduled Development Work will be incorporated into this AQMP. Draft EPL 21627 does not explicitly address construction dust, but does require that the premises be maintained in a condition with prevents the emission of dust, that all operations and activities occurring at the premises be carried out in a manner that will minimise the emission of dust and that trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times.

2. Legislative context

2.1 Overview

This AQMP has been prepared in accordance with the relevant legislative requirements applicable to air quality in NSW (Table 2-1). The detailed requirements of the legislation are provided in Appendix A of the CEMS.

Table 2-1: Summary of relevant legislation

Legislation	Key Requirements	Where addressed
<i>Environmental Planning and Assessment Act 1979</i>	This Act establishes a system of environmental planning and assessment of development proposals for the State.	Infrastructure Approval conditions and obligations have been incorporated into the AQMP.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	All scheduled activities within Schedule 1 of the POEO Act require an 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.	Draft EPL conditions are outlined in Section 4.4 of the CEMS and have been incorporated into the AQMP.
POEO Act Section 124 and Section 126	The occupier of any premises who operates any plant or deals with materials in or on those premises must do so in such a manner as to cause air pollution from those premises, and must: <ul style="list-style-type: none">▪ Maintain the plant in an efficient condition▪ Operate the plant in a proper and efficient manner▪ Must deal with materials in a proper and efficient manner.	Measures to address the impacts within Section 124 and 126 of the POEO Act have been incorporated into Section 5.2 of this AQMP.

2.2 Infrastructure Approval conditions

The Infrastructure Approval conditions relevant to air quality during construction are listed in Table 2-2, and are addressed in this AQMP.

Table 2-2: Infrastructure Approval conditions relevant to air quality during construction

Reference	Requirement	AQMP reference
C1	Prior to commencing construction, the Proponent must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (e) include: (i) the following plans: construction air quality management plan prepared in consultation with the EPA;	Construction AQMP (this plan)
B1	The premises must be maintained and operated in a manner that minimises or prevents dust emissions from the premises	Section 5.2
B2	The Proponent must carry on any activity, or operate any plant, in or on the premises by such reasonably practicable means as may be necessary to prevent or minimise air pollution.	Section 5.2
B3	Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.	Section 5.2
B4	The Proponent shall not permit any offensive odour to be emitted beyond the boundary of the site.	Section 5.2

2.3 EIS commitments

Environmental requirements established in the Environmental Impact Statement and Response to Submissions Report, additional to those identified in the Infrastructure Approval conditions, are listed in Table 2-3.

Table 2-3: EIS commitments

Source	Condition Requirements	Document Reference
AQ1	A dust management plan will be developed by the nominated Principal Contractor and included with the construction environmental management plan for the project.	AQMP (this 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.	Section 5.2

2.4 Consultation

Infrastructure Approval Condition C1(e)(i) requires this management plan to be prepared in consultation with the EPA. The EPA was invited to comment on the draft AQMP on 12 November 2021, however has declined this opportunity. A summary of this consultation outcome is provided in Table 2-4.

Table 2-4: Consultation feedback and response

Agency	Feedback	Response & section reference
NSW EPA	EPA responded they “encourage the development of [management plans] to ensure that proponents and licensees have determined how they will meet their statutory obligations and designed environmental objectives. Being a regulatory authority, the EPA’s role is to administer and regulate the statutes for environmental management and protection. As such the EPA does not directly get involved in the development of strategies to achieve those objectives and does not review or comment on such plans.”	Noted

3. Air quality criteria

EPA (2016) provides guidance regarding suitable air quality levels. The Approved Methods provide criteria for air pollutants, the concentration at which if exceeded would produce air quality impacts. The criteria are listed in Table 3-1.

Table 3-1: NSW EPA air quality impact assessment criteria

Substance	Statistic	Criterion
Particulate Matter as PM _{2.5}	Maximum 24-hour average	25 µg/m ³
	Maximum annual average	8 µg/m ³
Particulate Matter as PM ₁₀	Maximum 24-hour average	50 µg/m ³
	Maximum annual average	25 µg/m ³
Deposited Dust	Maximum increase in deposited dust level	2g/m ² /month
	Maximum total deposited dust level	4g/m ² /month

4. Existing conditions

4.1 Sensitive receptors

A sensitive receptor is a location where people are likely to work or reside and therefore have the potential to experience an air quality impact. This may include a dwelling, school, hospital or public recreation area (EPA 2016). Sixteen potentially sensitive receptor locations, mainly isolated residences, were identified as outlined in Section 15.2.2 of the Environmental Impact Statement (Jacobs 2021). These sensitive receptors are shown in Table 4-1 and were considered to be representative of locations potentially experiencing worst-case air quality impacts due to the Project because they were nearest to the proposed plant.

Sensitive receptors nearest to the Project Site are in the west, and south east so winds from the north through to west will have the highest potential to move dust from the Project to those receptors.

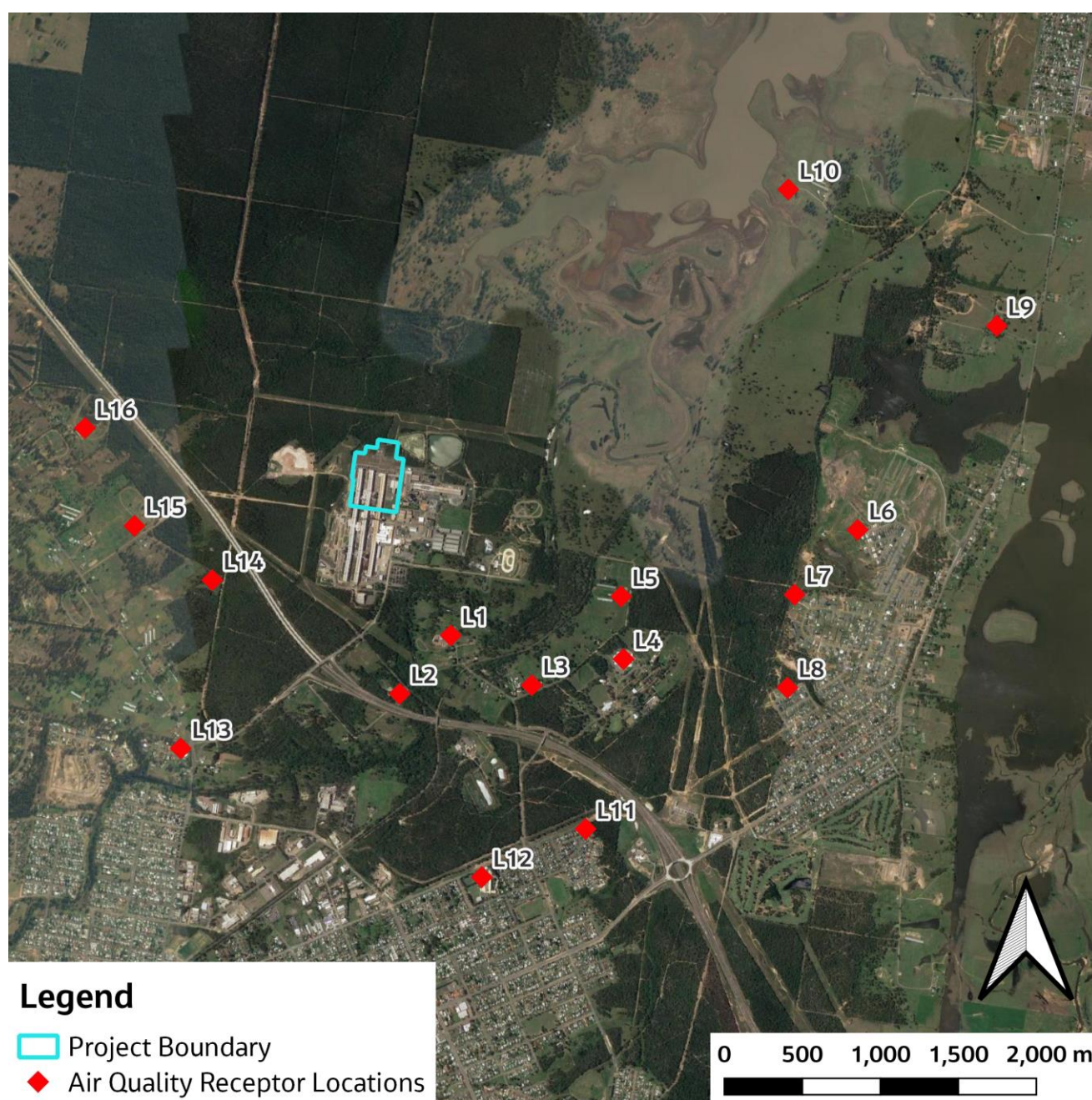


Figure 4-1: Sensitive Receptors

The receptors identified in Figure 4-1 are further detailed in Table 4-1.

Table 4-1: Sensitive receptor locations

ID	Address	Description
L1	6 Dawes Avenue, Loxford	Residence
L2	14 Horton Road, Loxford	Residence
L3	6 Bowditch Avenue, Loxford	Residence
L4	McLeod Road, Kurri Kurri	School; TAFE NSW – Kurri Kurri
L5	18 Bowditch Avenue, Loxford	Farmhouse
L6	30 Moorebank Road, Cliftleigh	Residence
L7	10 Howe Street, Cliftleigh	Residence
L8	7 Errol Crescent, Heddon Greta	Residence
L9	532 Main Road, Cliftleigh	Residence
L10	464 Cessnock Road, Gillieston Heights	Farmhouse
L11	21 Acacia Street, Kurri Kurri	Residence
L12	Cnr Deakin Street & Stanford Street, Kurri Kurri	School; Kurri Kurri High School
L13	7 Currawong Close, Weston	Residence
L14	103 Bishops Bridge Road, Sawyers Gully	Residence
L15	146 Sawyers Gully Road, Sawyers Gully	Residence
L16	78 Lumby Lane, Sawyers Gully	Residence

4.2 Meteorological conditions

Meteorological conditions are important for determining the direction and rate at which emissions from a source disperse. Key meteorological requirements of air dispersion models are, typically, hourly records of wind speed, wind direction, temperature and atmospheric stability.

The annual wind patterns for each year from 2015 to 2019 are shown by the wind roses in Figure 4-2 created using hourly average wind speed and wind direction data from DPIE's Beresfield air quality monitoring station (Jacobs 2021). The wind roses indicated that the most common winds in the area are from the west-northwest. This pattern of winds is common for the Lower Hunter Valley and reflects the influence of the northwest to southeast alignment of the Hunter Valley. Prevailing winds at the Project Site are from the west-northwest with minimal variation from year to year.

The meteorological conditions that most commonly lead to elevated dust concentrations include:

- Warm weather and extended periods without rainfall, resulting in less surface moisture
- Wind speeds greater than 18 kilometres per hour (km/hr). These winds are conducive to higher wind erosion rates.

The most effective dust mitigation measures should focus on controlling dust under unfavourable meteorological conditions, such as dry, windy, stable night-time conditions and/or when winds are blowing from construction activities towards sensitive receptors.

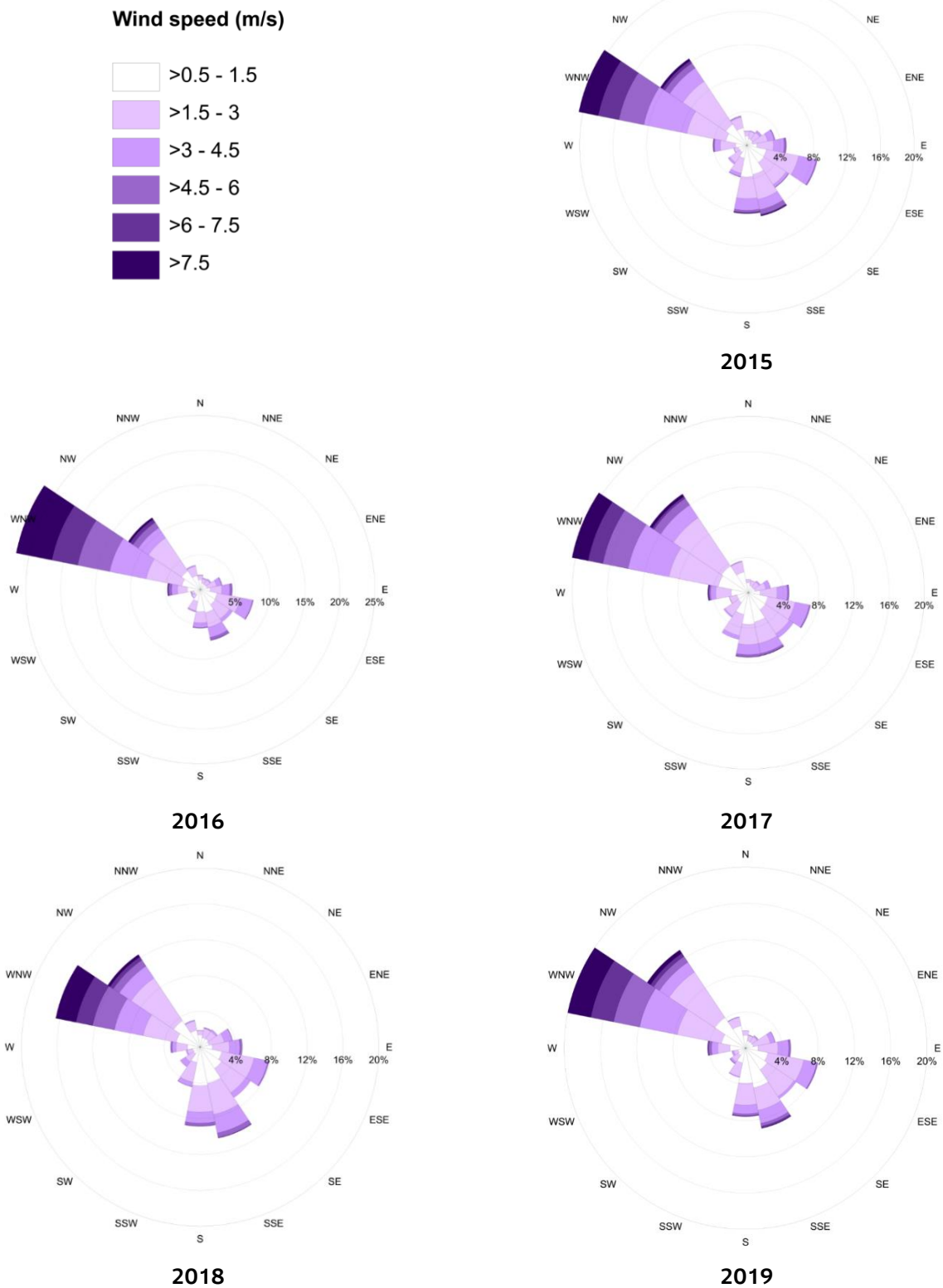


Figure 4-2: Annual wind roses: EPA Beresfield 2015-2019

5. Air quality impacts and management

5.1 Emissions during construction

Construction activities for the Project may have temporary, localised air quality effects due to dust and engine exhaust emissions from vehicles and machinery. It is expected that engine exhaust emissions will be insignificant.

Odour impacts are not expected to occur from Project construction activities, however Infrastructure Approval Condition B4 requires consideration of this risk. Controls for potential odour impacts have been considered in Section 5.2.

Dust and vehicle emissions from construction activities are from a variety of sources including material handling, material transport, wind erosion, and traffic on unsealed surfaces. These emissions mainly comprise of particulate matter in the form of suspended particulates, particulates less than 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$).

Dust and vehicle emission sources have been identified to develop the most effective controls, and to target the most substantial sources by construction stage (Table 5-1).

Table 5-1: Construction dust sources

Emission Source	Construction Activity						
	Site access and civil works	Site preparation - Switchyard	Earthworks to prepare the Project Site and construction areas	Construction of internal roads	Installation of above ground civil, mechanical, electrical plant equipment	Commissioning and testing	Demobilisation
Vegetation clearing		✓					
Wind Erosion		✓	✓				✓
Earthworks including site preparation and excavations		✓	✓	✓			
Movement of spoil and fill around site		✓	✓	✓			✓
Ground disturbance by vehicular movements and heavy plant and machinery	✓	✓	✓	✓	✓		
Concreting			✓	✓	✓		
Site landscaping							✓
Vehicle and heavy equipment emissions		✓	✓	✓	✓		✓

5.2 Impacts and controls

Potential air quality impacts due to construction and control measures are outlined in Table 5-2.

These control measures are to be used to reduce impacts to human health and the environment.

The premises will be maintained and operated in a manner that minimises or prevents dust emissions from the premises.

Two categories of controls are identified

- Standard controls – to be applied throughout the activity identified
- Controls for adverse meteorological conditions – to be applied when wind speeds are in excess of 18 km/hr which has the potential to generate excessive dust.

The Trigger Action Response Plan (TARP) in Section 5.3 outlines the protocol for conducting construction activities on high-wind speed days and/or when a complaint has been made.

Table 5-2: Construction air quality impacts and controls

Potential cause or impact	Control measures	Use
<i>Training</i>		
<ul style="list-style-type: none"> Lack of training and awareness could result in personnel not applying appropriate mitigation measures that could result in excessive dust generation that may have impacts to human health and/or flora and fauna. 	All construction personnel will be instructed through the site-specific induction or toolbox process with regards to the importance of reducing dust generation through construction activities	Standard
<i>Vegetation clearing</i>		
<ul style="list-style-type: none"> Dispersion of particulate matter in the air resulting in reduced air quality that may impact the health of Project personnel on site, or at sensitive receptors. Impacts to flora and fauna from dust fallout and deposition Reduced amenity at sensitive receptors from dust fall out and deposition 	Protocols for vegetation clearance outlined in the Biodiversity Management Plan are to be followed to reduce vegetation clearing where possible	Standard
	Vegetation clearing is not to occur past the outer 10-metre-wide Asset Protection Zone perimeter in the adjacent vegetation	Standard
	Minimise the amount of exposed area where possible	Standard
<i>Earthworks and movement of soil and fill</i>		
<ul style="list-style-type: none"> Dispersion of particulate matter in the air resulting in reduced air quality that may impact the health of Project personnel on site, or at sensitive receptors. Impacts to flora and fauna from dust fallout and deposition Reduced amenity at sensitive receptors from dust fall out and deposition 	A Soil and Erosion Management Plan will be prepared as part of the CEMS	Standard
	Source specific control measures routinely implemented (e.g. water spraying roads for dust suppression of traffic movements)	Standard
	Water carts will operate across the Project during all construction activities that have the potential to produce dust	Standard
	Regular (minimum daily) visual dust inspections of work areas to determine if additional dust suppression measures are required	Standard
	All potential dust generating material transported to the Project (including fill materials and road base) will be covered during transport, except during loading and unloading	Standard

Potential cause or impact	Control measures	Use
	Stockpile heights will be designed with maximum heights to reduce potential wind entrainment of materials	Standard
	Stockpiles of soils across the Project will be managed to reduce dust emissions including spraying with water or covering	Consider for adverse meteorological conditions
	Ceasing dust generating works will be considered during high winds	Consider for adverse meteorological conditions
<i>Ground disturbance by vehicular movements and heavy plant machinery</i>		
<ul style="list-style-type: none"> Dispersion of particulate matter in the air resulting in reduced air quality within the Project Site or at sensitive receptors, with impacts to human health 	Internal roads will be constructed with competent material and regularly maintained to reduce fine build up and minimise dust generation	Standard
	Speed restrictions and signage to be put in place	Standard
	Wash down facilities will be made available prior to vehicles leaving the Project Site to minimise mud and silt transfers offsite	Standard
	Regular cleaning and removal of surface material from internal roads and hardstand areas will be carried out	Standard
	Regular visual dust inspections of work areas to determine if additional dust suppression measures are required	Standard
	Internal roads and hardstand areas will be treated with water, the amount of water to be increased/decreased as required by the use	Consider for adverse meteorological conditions
	Application of chemical binding agents on unsealed roads may be considered for managing dust levels	Consider for adverse meteorological conditions

Potential cause or impact	Control measures	Use
<i>Concreting</i>		
<ul style="list-style-type: none"> Cutting or grinding of concrete that results in concrete dust (which may include respirable crystalline silica) emissions that can be inhaled or deposited onto surrounding flora/fauna habitats 	On-tool dust extraction and/or wet cutting methods will be applied when dust generating activities are being conducted (e.g. concrete cutting)	Standard
	Slurry will be managed and cleaned up prior to drying	Standard
<i>Vehicle and heavy equipment emissions</i>		
<ul style="list-style-type: none"> Emissions of pollutants (carbon monoxide, nitrogen oxides, sulfur oxides, particulate matter and volatile organic compounds) from combustion sources including earthmoving equipment, haul trucks, and site vehicles dispersed within Project site or at sensitive receptors that have an impact on human health 	Source emission reduction measures will be prioritised, such as minimising haul distances and traffic reduction measures	Standard
	All construction and maintenance equipment and vehicles are to be operated and maintained to the manufacturer's specifications, and be regularly serviced to minimise exhaust emissions	Standard
	Plant and equipment will be maintained so visible smoke is not emitted for a period greater than: <ul style="list-style-type: none"> Five consecutive seconds where plant is not registered for use on public roads, and 10 consecutive seconds where plant is registered for use on public roads 	Standard
	Engines and equipment will be switched off when not in use.	Standard
	Where reasonable and feasible, low emission plant and equipment will be adopted and used on site.	Standard
	Construction work will be conducted so as to minimise dust and/or sediment being tracked onto Hart Road and the public road network.	Standard

Potential cause or impact	Control measures	Use
<i>Odour emissions</i>		
<ul style="list-style-type: none"> Odour emissions occur outside of Project Site, resulting in a complaint or non-compliance. 	In the event excavated material is uncovered that has the potential to produce an offensive odour and needs to remain on site, stockpiles will be stored as far from sensitive receivers as feasibly possible.	Standard
	Where required, odourous stockpiles will be covered by a physical barrier (e.g. tarp) to suppress the odour.	Standard
	If odour cannot be suitably addressed by a physical barrier, an occupational hygienist will be consulted to advise on the use of odour suppressants on the stockpiles.	Standard
<i>Reporting</i>		
<ul style="list-style-type: none"> Lack of reporting of complaints or incidents could result in non-compliance and inability to manage dust generating activities 	All complaints/incidents regarding dust generation will be reported to the Project Manager, and by the Principal Contractor to Snowy Hydro	Standard
	Environmental Incident reports will be completed and forwarded to the Project Manager, who will work with the Principal Contractor to improve processes to reduce or eliminate dust generation at the Project Site.	Standard

5.3 Trigger Action Response Plan (TARP)

Contingency measures are to be implemented during periods of high particulate matter concentrations or adverse meteorological conditions. These measures include modification or ceasing of operations as required, as outlined in the TARP (refer to Figure 5-1).

TARP Level	Normal	Level 1 Alert	Level 2 – High Alert
Complaint	No dust or odour complaint	Dust or odour complaint (unvalidated)	Dust or odour complaint (validated)
Meteorological Conditions	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting <ul style="list-style-type: none"> Wind speed <18km/hr 	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: <ul style="list-style-type: none"> Wind speed >18km/hr 	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: <ul style="list-style-type: none"> Wind speed forecast >36 km/hr OR Wind speed forecast >18 km/hr and wind direction from N or NW
Operational activities	Normal operations	Continue operations and evaluate additional controls to suppress dust	Continue operations with additional controls to suppress dust, or modify operations
Trigger Actions Responses for Trigger Levels (Responsibilities)			
	Principal Contractor to: <ul style="list-style-type: none"> Maintain standard dust suppression activities Monitor operation 	Principal Contractor to: <ul style="list-style-type: none"> Evaluate effectiveness of controls throughout activity Plan and execute remedial actions as required: <ul style="list-style-type: none"> Additional watering Re-locating activities Conduct visual inspection to identify dust and/or air emission generating activities Investigate complaint, taking into consideration activity, meteorological conditions, and visual observation of impact to validate complaint Provide verbal response to complaint Record in complaints register 	Principal Contractor to: <ul style="list-style-type: none"> Maintain and evaluate effectiveness of controls throughout activity Plan and execute remedial actions as required: <ul style="list-style-type: none"> Additional watering Re-locating activities Reduced activity Conduct visual inspection to identify dust and/or air emission generating activities Investigate complaint, taking into consideration activity, meteorological conditions, and visual observation of impact to validate complaint Provide a verbal response to complaint Record in complaints register Communicate lessons learned to project personnel

Figure 5-1: Trigger, Action, and Response Plan for Dust Emissions

6. Compliance management

6.1 Roles and responsibilities

The roles and responsibilities of Snowy Hydro, the Principal Contractor and sub-contractors, as they relate to the implementation and review of the CEMS and associated plans, are outlined in Section 7.2 of the CEMS.

Key responsibilities of the Principal Contractor in implementing the AQMP are to:

- Ensure all site personnel are inducted and understand environmental impacts
- Lead daily pre-start meetings and discuss dust-generating activity with Project team
- Review meteorological conditions daily
- Record complaints in Complaint Register
- Participate in dust complaint investigations
- Determine additional controls to implement in high-wind conditions or high-dust generating activities
- Identify resources to implement additional controls to manage dust emissions
- Communicate lessons learned to Project personnel
- Identify resources to implement additional controls to manage dust emissions.

6.2 Inspections

A daily visual inspection prior to the commencement of works will be undertaken to assess the likelihood of dust emissions and evidence of excessive exhaust emissions. The daily inspection will include an assessment of wind and weather conditions alongside the works program to determine the likelihood of dust emissions and whether additional mitigation measures will be applied.

Weekly inspections will be undertaken involving a visual assessment of dust emissions to determine if current mitigation measures are appropriate or if additional measures will be required. Additional inspections to be carried out by the Principal Contractor include:

- Inspections of dust leaving the Project Site
- Inspections of dust resulting from construction vehicle movements
- Inspections of the adequacy of controls on stockpiles and soil movements
- Inspections on the adequacy of controls on unsealed roads.

Where the inspections determine that dust emissions are occurring and travelling off the Project Site, works will be suspended or further controls to prevent dust moving offsite will be implemented.

Routine inspections of the Project Site will occur as outlined in Section 7.5.1 of the CEMS.

Non-routine inspections relating to dust generating activities during construction will be conducted when there are any works that are considered high-risk (e.g. high dust-generating activities such as excavation and soil/fill transport) and during dust-conducive meteorological conditions (e.g. hot, dry and/or windy conditions, with winds exceeding 18 km/hr). The TARP will be followed for both activities.

6.3 Monitoring

Where a complaint has been made regarding dust impacts, or where dust emissions from the Project Site are suspected of potentially causing air quality impacts, dust monitoring will be undertaken. Dust will be monitored at the Project Site boundary nearest to the closest sensitive receiver, or at the residence where a complaint has been made. Monitoring for dust will be undertaken daily by the Principal Contractor, with an increased frequency during dust conducive meteorological conditions.

Construction air quality monitoring is summarised in the Monitoring Program in Appendix L of the CEMS.

6.3.1 Suspended dust

Dust will be monitored as PM₁₀ using a DustTrak Dust Monitor or equivalent device, operated by a suitably qualified person. Results of the monitoring would be logged monthly or at another interval recommended by an air quality specialist.

Where dust levels are above the criteria in Section 3, further mitigation will be undertaken to reduce dust levels and monitoring continued to confirm the effectiveness of the measures undertaken.

6.3.2 Deposited dust

Monitoring for deposited dust will involve the installation of 2 – 4 dust gauges between the Project and the nearest sensitive receptors. Dust gauges will be measured monthly by the Principal Contractor, with the results compared to the criteria in Section 3. Where levels are above the criteria, mitigation will be undertaken and monitoring continued to confirm the reduction of deposited dust levels.

6.4 Auditing

Auditing will occur as outlined in Section 7.5.3 and 7.5.4 of the CEMS.

Independent environmental audits will also be carried out as per the conditions of approval set out here.

C14. Independent Audits of the development must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (2020) or its latest version.

C15. Proposed independent auditors must be agreed to in writing by the Secretary prior to the commencement of an Independent Audit.

C16. The Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the *Compliance Reporting Post Approval Requirements* (2020) or its latest version, upon giving at least 4 weeks' notice (or timing) to the Proponent of the date upon which the audit must be commenced.

C17. In accordance with the specific requirements in the *Independent Audit Post Approval Requirements* (2020) or its latest version, the Proponent must:

- (a) review and respond to each Independent Audit Report prepared under condition C12 of this approval, or condition C14 where notice is given by the Secretary;
- (b) submit the response to the Secretary; and
- (c) make each Independent Audit Report, and response to it, publicly available within 60 days of submission to the Secretary, unless otherwise agreed by the Secretary.

C18. Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Secretary within 2 months of undertaking the independent audit site inspection, as outlined in the *Independent Audit Post Approvals Requirements* (2020) or its latest version, unless otherwise agreed by the Secretary.

C19. Notwithstanding the requirements of the *Independent Audit Post Approvals Requirements* (2020) or its latest version, the Secretary may approve a request for ongoing independent operational audits to be ceased,

where it has been demonstrated to the Secretary's satisfaction that independent operational audits have demonstrated operational compliance.

6.5 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.

A training needs and competency evaluation will also be completed, and training conducted for all personnel, contractors, and visitors to the Project Site.

Further detail on training and inductions are provided in section 7.3 of the CEMS.

6.6 Staging and Review of Management Plans

The Department's approval for the staging of management plans into construction and operation phases was provided on the 22nd of December 2021.

Regular reviews of management documentation will also occur and after certain events, including within 3 months (unless otherwise agreed by the Secretary) of the following triggers. The triggers for further review of this Management Plan include:

- (a) the submission of an incident report under condition C6;
- (b) the submission of an audit report under conditions C15 to C19;
- (c) the approval of any modification to the conditions of this approval;
- (d) a direction of the Secretary (Department of Planning Industry and Environment) under condition A2 of Schedule 2;
- (e) as initiated by the Principal Contractor or Snowy Hydro; or
- (f) upon the advice of the Environmental Representative.

Where revisions are made, then within 4 weeks of the review the revised document will be submitted to the Secretary for approval, unless otherwise agreed with the Secretary, or within the scope of the Environmental Representative role as set out in condition A23.

6.7 Review and improvement

The CEMS and associated plans, including this Air Quality Plan, 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.

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.

6.8 Incident notification and reporting

Incident and non-compliance reporting will follow the protocols outlined in Section 7.4 and 7.5.6 of the CEMS and as set out in this section 6.9.

Dust complaints are to be recorded in the Complaints Register and validated. Lessons learned and improvements should be communicated to the Project team after the following:

- An environmental incident
- Practical completion of a substantial stage of construction works
- A significant change in site conditions
- If a new, major sub-contractor begins working on the Project Site
- Completion of an audit where findings include aspects of the CEMS
- If requested by Snowy Hydro.

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;
- (a) outcomes of an incident investigation, including identification of the cause of the incident;
- (b) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
- (c) details of any communication with other stakeholders regarding the incident.

6.9 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.

6.10 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.

Snowy Hydro must make each Compliance Report publicly available within 60 days of submitting it to the Secretary.

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.

6.11 Complaints 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 the table below. Where the complaint rises to the level of a dispute it shall be managed in accordance with the steps outlined in section 6.3 in the Construction Environmental Management Strategy.

Table 5-1: Complaints and enquiries management

Complaints and enquiries management	
Responding to complaints received during standard work hours	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Record details of enquiry received Provide a response to enquirer on the next business day.
Responding to enquiries and complaints out of hours	<ul style="list-style-type: none"> 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.

6.12 Notification to the Department

As required by approval condition C13. Prior to commencing the construction, operations, upgrading or decommissioning of the development or the cessation of operations, the Proponent must notify the Department via the Major Projects website portal of the date of commencement, or cessation, of the relevant phase.

If any of these phases of the development are to be staged, then the Proponent must notify the Department in writing prior to commencing the relevant stage, and clearly identify the development that would be carried out during the relevant stage.

6.13 Access to Information

The following shall be adhered to regarding access to information as set out in approval condition C20.

Before the commencement of construction until the completion of all rehabilitation required under this approval, the Proponent must:

- (d) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this approval) publicly available on its website:
 - (i) the EIS;
 - (ii) all current statutory approvals for the development;
 - (iii) all approved strategies, plans and programs required under the conditions of this approval;
 - (iv) the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged;
 - (v) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this approval;
 - (vi) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;
 - (vii) any conditions of this approval, or any approved plans and programs;
 - (viii) a summary of the current phase and progress of the development;
 - (ix) contact details to enquire about the development or to make a complaint;
 - (x) a complaints register, updated monthly;
 - (xi) the Annual Reviews of the development;
 - (xii) audit reports prepared as part of any Independent Environmental Audit of the development and the Proponent's response to the recommendations in any audit report;
 - (xiii) any other matter required by the Secretary; and
- (e) keep such information up to date, to the satisfaction of the Secretary.

7. References

EPA 2016, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, State of NSW and Environment Protection Authority, August 2005, minor revisions November 2016, published January 2017.

Jacobs 2021, *Hunter Power Project Environmental Impact Statement (Rev 0 – Final)*, Jacobs Group (Australia), 22 April 2021.