

# Liddell Power Station Battery Energy Storage System Air Quality Management Sub Plan

Environmental Management Strategy

16-May-2024

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Environmental Management Strategy

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Job No.: 60698503

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## Quality Information

Document Liddell Power Station Battery Energy Storage System Air Quality Management Sub  
Plan

Ref 60698503


Date 16-May-2024

Originator A. Mitchell

Checker/s N. Standen

Verifier/s S. Walton

### Revision History

Rev	Revision Date	Details	Approved	
			Name/Position	Signature
0	10-Feb-2023	Draft for client review	Neil Standen Project Manager	
1	28-Mar-2023	Second draft for client review	Neil Standen Project Manager	
2	03-May-2023	Final draft for DPE review	Neil Standen Project Manager	
3	16-Jun-2023	Final	Neil Standen Project Manager	
4	05-Apr-2024	Spoil stockpiling update	Neil Standen Project Manager	
5	16-May-2024	Spoil stockpiling update	Neil Standen Project Manager	

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## Glossary and terms

Term	Description
AECOM	AECOM Australia Pty Ltd
AGLM	AGL Macquarie Pty Ltd
Approved Methods	<i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW</i> (Environment Protection Authority 2016)
AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
BAW	Bayswater Ancillary Works
BESS	Battery Energy Storage System
BESS Project (the)	Stage 2 of the Liddell Battery and Bayswater Ancillary Works Project consisting of the construction of a BESS with the storage capacity to facilitate a maximum discharge of up to 500 MW for a four-hour period, or up to 2 GWh
CCTV	Closed-circuit television
DPE	Department of Planning and Environment (now DPHI)
DPHI	Department of Planning, Housing and Infrastructure (formerly DPE)
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPA	Environment Protection Authority (NSW)
EPL	Environment Protection Licence
GWh	Gigawatt hours
ha	hectares
km	kilometre
kV	Kilovolt
LBBAWP	Liddell Battery and Bayswater Ancillary Works Project, consisting of a battery energy storage system at Liddell, decoupling works, and works associated with the ongoing operation of Bayswater
MW	Megawatt
NEM	National Energy Market
PM <sub>2.5</sub>	Particulate matter 2.5 micrometres or less in diameter
PM <sub>10</sub>	Particulate matter 10 micrometres or less in diameter
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
RTS	Response to Submissions
SEARs	Secretary's Environmental Assessment Requirements
Site (the)	Location of the existing solar array area to be used for the BESS
SSD	State Significant Development
TARP	Trigger, Action and Response Plan
TSP	Total suspended particulates

Term	Description
V	Volt
WOAOW	Bayswater Water and Other Associated Operational Works project, which involves improvements to the management of ancillary processes at Bayswater power station and to facilitate an improved rehabilitation outcome for the ash disposal area. These works may occur at the same time as the LBBAWP.

## 1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was commissioned by AGL Macquarie Pty Limited (AGLM) to prepare an Air Quality Management Plan (AQMP) for a Battery Energy Storage System (BESS) to be constructed as part of the Liddell Battery and Bayswater Ancillary Works Project (LBBAWP), NSW.

The LBBAWP is a State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011*<sup>1</sup>, and is subject to Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

An Environmental Impact Statement (EIS) was prepared in March 2021 in accordance with the Secretary's Environmental Assessment Requirements (SEARs). Development consent (SSD-8889679) was issued by the Department of Planning and Environment (DPE) (now Department of Planning, Housing and Infrastructure (DPHI)) on 8 March 2022.

### 1.1 Background

AGLM is progressing with plans to facilitate the efficient, safe and reliable continuation of electricity-generating works from the Bayswater and Liddell sites. The LBBAWP will be carried out in the following stages:

- Stage 1 - Decoupling Works: Alternative network connection arrangements for the Liddell 33 Kilovolt (kV) switching station that provides electricity to the infrastructure required for the ongoing operation of Bayswater power station, to associated ancillary infrastructure and to potential third-party industrial energy users
- Stage 2 - BESS: Replacement of a portion of Liddell's dispatchable electricity supply is required for the National Energy Market (NEM), including the construction of a grid-connected utility-scale BESS with a capacity of up to 500 megawatts (MW) and 2 gigawatt hours (GWh)
- Stage 3 - Bayswater Ancillary Works (BAW): Works associated with Bayswater power station, which may include upgrades to ancillary infrastructure, such as pumps, pipelines, conveyor systems, roads and assets, to enable maintenance, repairs, replacement or expansion
- Consolidated consents: Surrender and consolidation of various existing development approvals required for the ongoing operation of AGLM assets.

This management plan has been developed for Stage 2 only (i.e. the BESS), which is hereinafter referred to as 'the BESS Project'.

### 1.2 Site details

The AGLM landholding is located approximately 15 kilometres (km) southeast of Muswellbrook, 25 km northwest of Singleton, and approximately 165 km west northwest of Sydney in NSW. The total area of the AGLM landholding is approximately 10,000 ha, including the Bayswater and Liddell power station operational areas, the Ravensworth rehabilitation area, Lake Liddell and surrounding buffer lands.

Surrounding the AGLM landholding is predominantly land uses heavily influenced by industrial activity. The local area is dominated by large-scale infrastructure associated with Bayswater and Liddell power stations and open-cut mining activities. Agricultural clearing for the purposes of grazing is also present within and surrounding the AGLM landholding.

Elevations within approximately 10 kilometres of the AGLM landholding range from around 100 to 500 metres above sea level.

The majority of the AGLM landholding has been previously disturbed during the construction and operation of Liddell and Bayswater power stations and historic agricultural activity. The BESS will be located within the location of the existing solar array area (the site), shown as 'Area 2' in Figure 1. This location was selected as it is in close proximity to Liddell Power Station and is on previously disturbed

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<sup>1</sup> Now State Environmental Planning Policy (Planning Systems) 2021

operational lands no longer required for Liddell operations. Stockpiling for the BESS Project will occur within the former coal yards area, shown as 'Area 1' in Figure 1.

The solar array area consists of approximately 5 ha of solar thermal equipment. This consists predominantly of steel pipes used for heat absorption and water and steam transfer, mirror reflectors and steel mounting structures, as shown in Figure 2. The former coal yard covers an area of about 20 ha and consists of approximately 5 km of conveyor and associated stacker / reclaimer equipment.

### 1.3 Project description

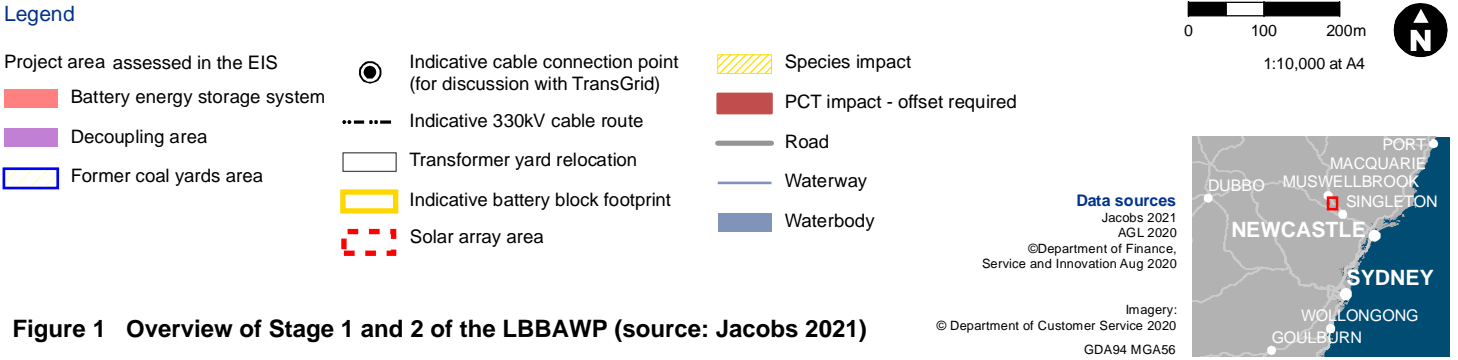
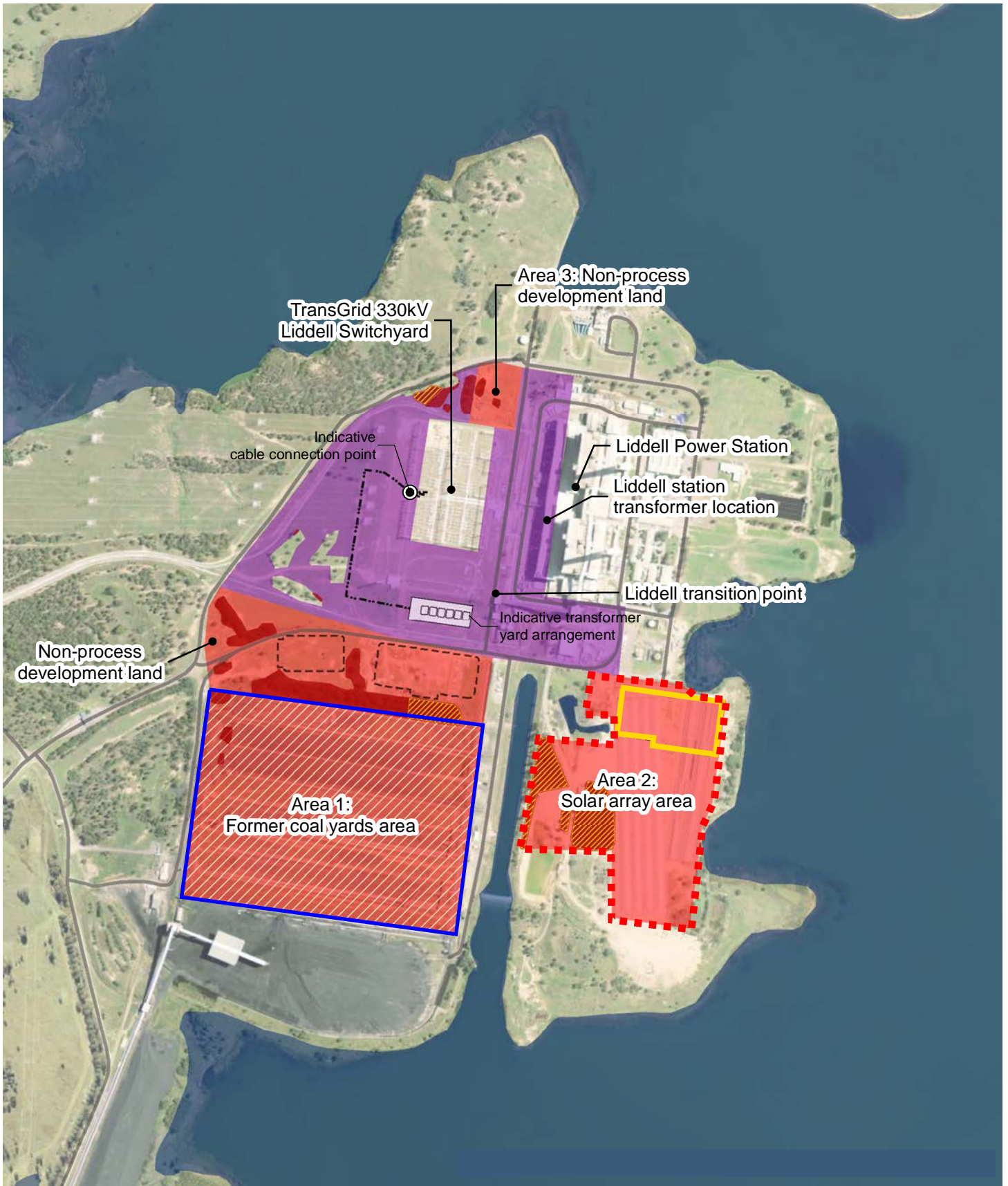
The BESS Project involves the construction, operation and decommissioning of a BESS with the storage capacity to facilitate a maximum discharge of up to 500 MW for up to a four-hour period or up to 2 GWh. The BESS will be located within 'Area 2', the existing solar array area, and will be connected to the existing TransGrid 330kV substation via a new 330kV high-voltage power line (refer to Figure 1).

The BESS Project will involve the demolition of the existing solar array area for construction of the BESS and the former coal yard infrastructure for stockpiling purposes. Other redundant equipment may also require demolition and deconstruction to support construction of the BESS Project. The disturbance area for the BESS is expected to be around 20 hectares (ha). The BESS will be mounted on slab footings and will be containerised or otherwise enclosed in a formalised layout.

The approximate component requirements to achieve the maximum storage capacity for the BESS (based on indicative information provided by potential technology providers) are as follows:

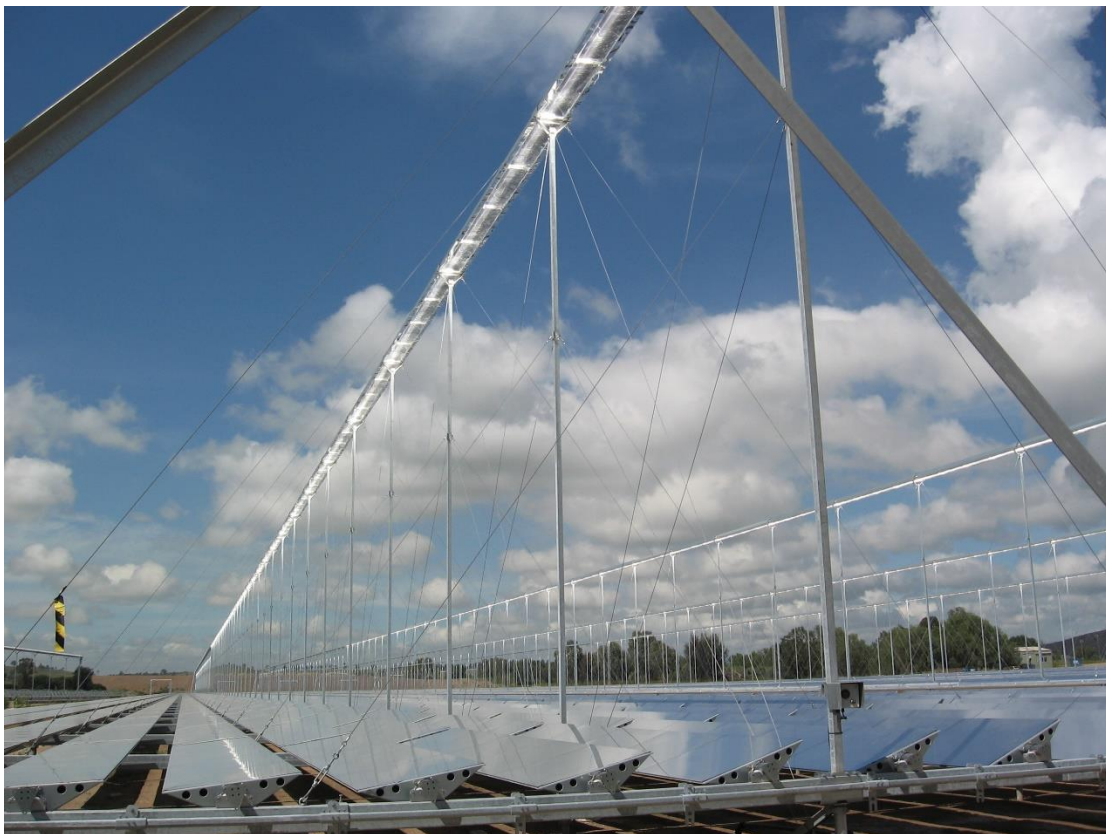
- Approximately 900 pre-assembled battery enclosures containing lithium-ion type batteries, internal cooling and fire suppression systems
- Approximately 148 medium voltage skid (inverter and transformers)
- Approximately 148 of 630 Volt (V) to 33 kV step-up transformers
- One control room, two electrical rooms, one social facility room and four storage rooms
- 33kV reticulation system and collector switchrooms
- Overhead, underground, or a combination of both, subject to detailed design, 330 kV line to connect to TransGrid 330 kV substation
- Two 33 kV / 33kV / 330 kV three-winding transformers and 330 kV connection equipment
- Ancillary infrastructure, including water tanks for bushfire protection purposes, lightning protection, security fencing and closed-circuit television (CCTV).

An indicative layout of the BESS is shown in Figure 3.



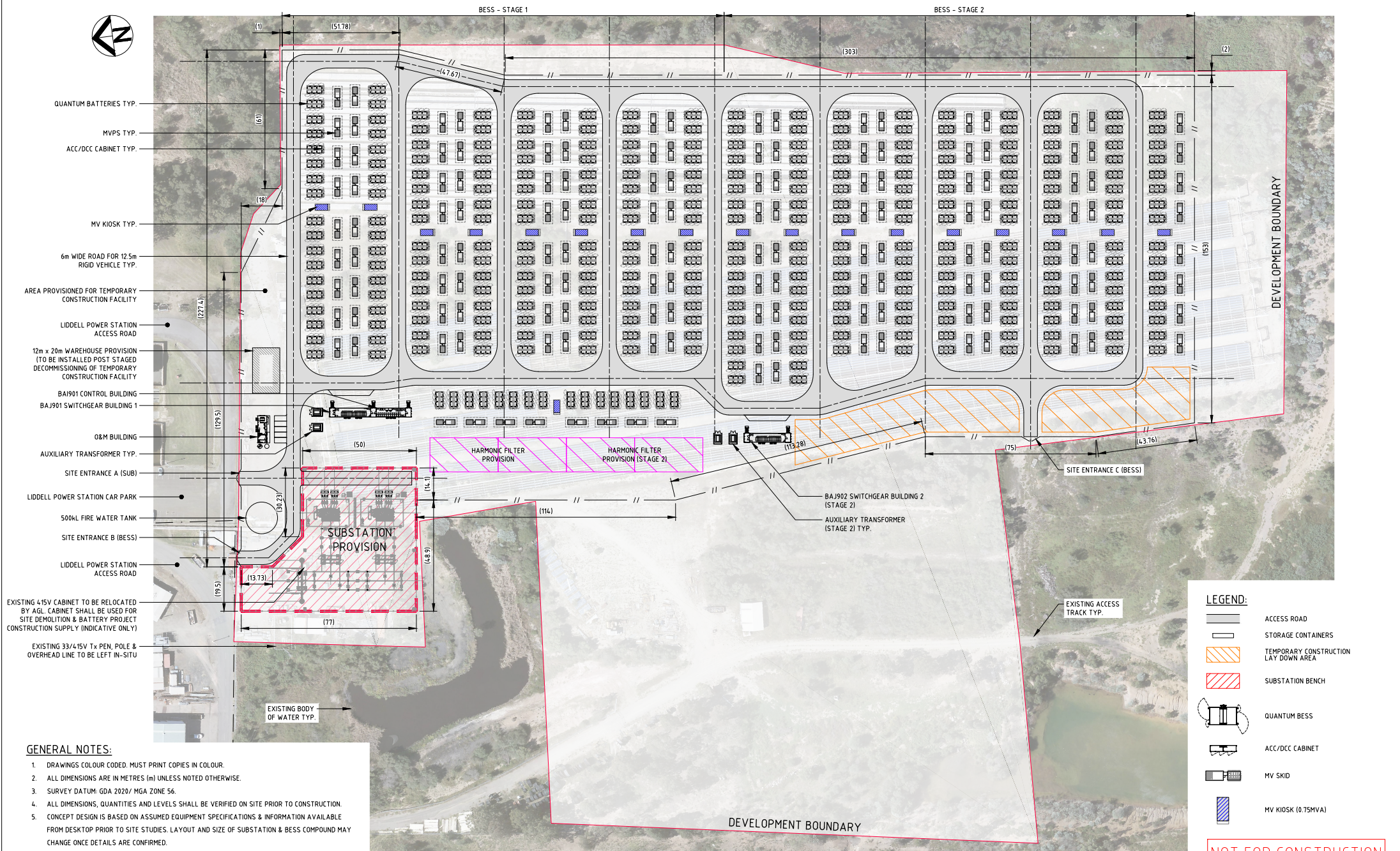
**Figure 1 Overview of Stage 1 and 2 of the LBBAWP (source: Jacobs 2021)**





**Figure 2 Existing solar array area**





ITEM	STAGE 1 (250MW/500MWh)	STAGE 2 (250MW/500MWh)	TOTAL (500MW/1000MWh)
AUX TRANSFORMER	2	2	4
MV KIOSK	8	8	16
MV SKID (INVERTER + TRANS.)	74	74	148
GRIDSOLY QUANTUM	444	444	888
ACCDC CABINET	148	148	296

**SITE PLAN**  
SCALE 1:500

REV	DATE	REVISION DESCRIPTION	DES	RVD	APP	AUTH	CLIENT
0.2	17.02.2023	EQUIPMENT & LAYOUT REVISED	L.M.	K.M.	J.L.	A.M.	
0.1	10.02.2023	ISSUED FOR INFORMATION	L.M.	K.M.	J.L.	A.M.	



ENERVEN PROJECT No: 699

**ENERVEN™**

NAME	DATE
DESIGNED L. MUNIZ	10.02.2023
REVIEWED K. MACKAY	10.02.2023
APPROVED J. LOMBARD	10.02.2023
AUTHORISED A. MALCOLM	10.02.2023

SIZE	DRAWING NUMBER	REVISION
A1	699.EEI.GN.DWG.003	0.2

**NOT FOR CONSTRUCTION**  
17.02.2023 11:40 AM

**LIDDELL BESS**  
CONCEPT SITE LAYOUT  
SITE PLAN - SATELLITE OVERVIEW

**Figure 3 Preliminary site layout (indicative only)**



## 1.4 Construction activities

Construction works associated with the BESS Project would be likely to involve:

- Installation and maintenance of environmental controls, including temporary and permanent water management infrastructure
- Establishment of access from the Liddell access road
- Demolition or deconstruction of existing infrastructure as required, including the existing solar array area and former coal yard infrastructure
- Establishment of a hardstand pad and construction laydown areas, including dedicated stockpiling areas
- Cut and fill to battery compound, transformer compounds, footings and construction laydown area
- Trenching of 33kV reticulation system
- Trenching and/or overhead line installation to TransGrid 330 kV substation
- Structural works to support enclosures, inverters, transformers, buildings and transformer compounds
- Delivery, installation and electrical fit-out
- Testing and commissioning activities
- Removal of construction equipment and reinstatement of construction areas.

Potential risks to air quality are outlined in Section 5.4.

## 1.5 Relevant approvals and conditions

### 1.5.1 Project approvals

Liddell power station was commissioned in 1971 and formed part of AGLM's integrated power generation complex. This complex also incorporates Bayswater power station (commissioned in 1985) and a range of supporting water management, coal supply, power supply and control system infrastructure.

Bayswater and Liddell power stations are regulated under several planning approvals. Most development at the site pre-dates current planning requirements enforced through the EP&A Act; however, alterations and additions after 1 September 1980 were subject to the provisions of the Act.

Development consent (SSD-8889679) was granted for the LBBAWP on 8 March 2022, which includes the voluntary surrender and consolidation of various existing development approvals into SSD-8889679.

In accordance with Section 55 of the *Protection of the Environment Operations Act 1997* (POEO Act), Liddell operated under Environment Protection Licence (EPL) 2122, which is still active for the site even though power generation operations have ceased for the power station. Bayswater is operated under EPL 779.

### 1.5.2 Development consent conditions

In accordance with SSD-8889679 development consent condition C1, an Environmental Management Strategy (EMS) has been prepared for the BESS Project to provide a strategic framework for the environmental management of the development. A range of subplans has been developed to support the EMS and address development consent condition C1(e)(i).

This AQMP has been developed to manage potential air quality impacts arising from the BESS Project. The relevant conditions are outlined below in Table 1.



Table 1 Development consent conditions – air quality management

Condition	Requirement	Reference
C1	<p>Prior to commencing construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <p>(e) include:</p> <p>(i) the following subplans:</p> <ul style="list-style-type: none"> <li>• soil, stormwater, water quality, flood and spoil management;</li> <li>• construction and decommissioning noise, including an out-of-hours works protocol;</li> <li>• <b>air quality management;</b></li> <li>• contamination, including an unexpected finds protocol</li> <li>• waste management; and</li> <li>• traffic.</li> </ul>	This management plan
A12	<p>The Applicant must ensure that all plant and equipment used on site, or in connection with the development, is:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	Section 6.0, specifically management measure AQ4
B15	<p>The Applicant must take all reasonable and feasible steps to:</p> <p>(a) minimise odour, fume and dust emissions of the development;</p> <p>(b) eliminate or minimise the risk of spontaneous combustion; and</p> <p>(c) minimise to the greatest extent practicable, dust generating surfaces exposed on the site.</p>	Section 6.0
B28	<p>The Applicant must rehabilitate the development to the satisfaction of the Planning Secretary. The rehabilitation must comply with the objectives in Table 2.</p> <p><i>[Text extract from Table 2 of development consent]</i></p> <ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> </ul>	Section 6.0, specifically management measure AQ8

## 1.6 Scope, purpose and objectives

This AQMP has been developed in accordance with SSD-8889679 development consent condition C1 and to address relevant requirements associated with:

- SSD-8889679 development consent conditions
- EIS management measures, which were amended in the Response to Submissions (RTS) (Jacobs 2021)
- Bayswater Water and Other Associated Operational Works (WOAOW) management measures
- AGL plans and procedures.

The purpose of this AQMP is to:

- Summarise the potential impacts of the BESS Project on the local air quality environment as assessed in the EIS (Jacobs 2021)
- Identify environmental management measures to be implemented to minimise air quality impacts.

The objective of this AQMP is to mitigate and manage potential air quality impacts on the local environment as a result of the BESS Project and to maintain compliance with SDD-8889679.

All works undertaken by the Project Contractor must comply with the environmental management measures outlined in Section 6.0 of this plan.

## 1.7 Related reports and plans

There are environmental assessments, management plans and monitoring programs for existing and proposed operations within the AGLM landholdings. The following documents are considered related and may need to be read in conjunction with this AQMP:

- Environmental Monitoring & Reporting Schedule (AGLM-HSE-FRM-008.10.1) (AGLM, 2019)
- Air Quality, Greenhouse Gas and Noise Management Plan (AGLM-HSE-PLN-009.04) (AGLM, 2019)
- WOAOW Project: Air Quality Impact Assessment (Jacobs, 2019)
- Liddell Decoupling Works Air Quality Management Plan (Jacobs, 2022) (Stage 1 LBBAWP).

## 2.0 Legislation and guidelines

### 2.1 Legislation

This AQMP has been prepared in accordance with the relevant legislation and regulatory requirements within the EMS. Specifically:

- POEO Act (NSW)
- POEO (Clean Air) Regulation 2022 (NSW)
- *National Environment Protection (Ambient Air Quality) Measure 2021* (Commonwealth).

#### 2.1.1 POEO Act

The aim of the POEO Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment and reduce potential risks to human health and the environment. The POEO Act is the primary piece of legislation for the regulation of potential pollution impacts associated with scheduled operations or activities in NSW. Scheduled activities are those defined in Schedule 1 of the Act.

Liddell operated under EPL 2122, which specified the environmental performance requirements for operations, including emission limits of certain pollutants. EPL 2122 remains active for the site, however the BESS Project does not constitute a scheduled activity and is therefore not subject to the requirements of the EPL.

#### 2.1.2 POEO (Clean Air) Regulation 2022

The POEO (Clean Air) Regulation 2022 is the key regulatory mechanism in NSW for reducing emissions of harmful pollutants in the air. It contains provisions for the regulation of emissions to air from wood heaters, open burning, motor vehicles, fuels and industry.

#### 2.1.3 National Environment Protection (Ambient Air Quality) Measure 2021

The aim of the *National Environment Protection (Ambient Air Quality) Measure 2021* is to achieve National Environment Protection Standards as assessed in accordance with (set) monitoring protocols. The outcome is to achieve ambient air quality that allows for the adequate protection of human health and well-being.

## 2.2 Standards and guidelines

The main standards and guidelines relevant to this AQMP include:

- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (Environment Protection Authority (EPA), 2016)
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2007).

Both these documents were updated in 2022, replacing the above versions of these documents. Given that the LBBAWP was assessed prior to 9 September 2022 (refer to Section 3.4), the assessment

remains in accordance with the 2016 version of the *Approved Methods for Modelling and Assessment*. However, monitoring conditions within an EPL must be undertaken in accordance with the 2022 version of the *Approved Methods for Sampling and analysis* (which replaces the 2007 version).

### 2.2.1 Approved methods for the modelling and assessment of air pollutants in NSW

The *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2016) (the *Approved Methods*) outlines the approach to be applied for the modelling and assessment of air pollutants from stationary sources in NSW.

The air pollutants most relevant to the BESS Project are particulate matter emissions from excavation works and material handling, transport and processing activities, as well as from wind erosion of stored materials and exposed surfaces.

The EPA has developed assessment criteria for:

- Particulate matter 10 micrometres or less in diameter (PM<sub>10</sub>) – to protect against health impacts
- Particulate matter 2.5 micrometres or less in diameter (PM<sub>2.5</sub>) – to protect against health impacts
- Total suspended particulates (TSP) – to protect against nuisance amenity impacts
- Deposited dust – to protect against nuisance amenity impacts.

### 2.2.2 Approved methods for the sampling and analysis of air pollutants in NSW

The *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (EPA, 2022) provides guidance for the monitoring and analysis of air pollutants in NSW for comparison with limits or performance criteria listed in statutory instruments.

## 3.0 Environmental impact assessment

An Air Quality Impact Assessment (AQIA) was prepared by Jacobs (2021) in accordance with the SEARs issued for the LBBAWP and to support the EIS. The key purpose of the AQIA was to establish suitable air quality assessment criteria, estimate emissions to air associated with the LBBAWP and present and discuss predicted potential impacts.

The AQIA also recommended suitable mitigation and management measures which have been included in this AQMP in Section 6.0, where relevant to the BESS.

The EIS was placed on public exhibition for a period of 28 days, between 15 April 2021 to 12 May 2021. Following this, a RTS report (Jacobs 2021) was prepared to consider and respond to any submissions received during the exhibition period, which resulted in changes to some of the management measures from the EIS. Therefore, the management measures in the RTS report supersede those in the EIS, where changes have been made.

## 4.0 Roles and responsibilities

Section 4.3 of the EMS outlines key roles and responsibilities for both AGLM and the Project Contractor working on the BESS Project.

## 5.0 Environmental setting and potential impacts

### 5.1 Sensitive receivers

There are 22 receivers identified within the vicinity of the LBBAWP, including 15 residential receivers, one passive recreational area and six industrial premises.

The locations of the fifteen residential receivers are detailed below in Table 2 based on the distance to the development site of the whole LBBAWP. The nearest residential receiver to the LBBAWP is also the closest receiver to the BESS footprint, being R12 about 3.5 kilometres northeast.

All receivers are shown in Figure 4.

**Table 2** Nearby representative sensitive receivers (UTM MGA Zone 56)

Receiver ID	X co-ordinate	Y co-ordinate	Approximate distance and direction to the LBBAWP
RR01	306177	6421554	6300 north
RR02	316337	6419837	7800 northeast
RR03	318041	6411978	3000 east
RR04	320245	6405818	8000 southeast
RR05	316832	6403296	8800 southeast
RR06	313729	6403903	8100 southeast
RR07	307735	6402915	5300 south
RR08	302782	6404017	1100 south
RR09	300275	6406687	1000 southwest
RR10	300383	6407252	1100 southwest
RR11	295636	6412963	6800 west
RR12	311493	6418878	2700 northeast
RR13	309979	6420335	3500 northeast
RR14	309141	6421575	4700 north
RR15	302022	6404606	700 south

## 5.2 Meteorology

The meteorological data collected at monitors operated by AGLM, as well as a number of other local industrial operators and DPHI, were reviewed to identify representative typical local meteorological conditions; these conditions showed annual prevailing winds blowing from the southeast and northwest.

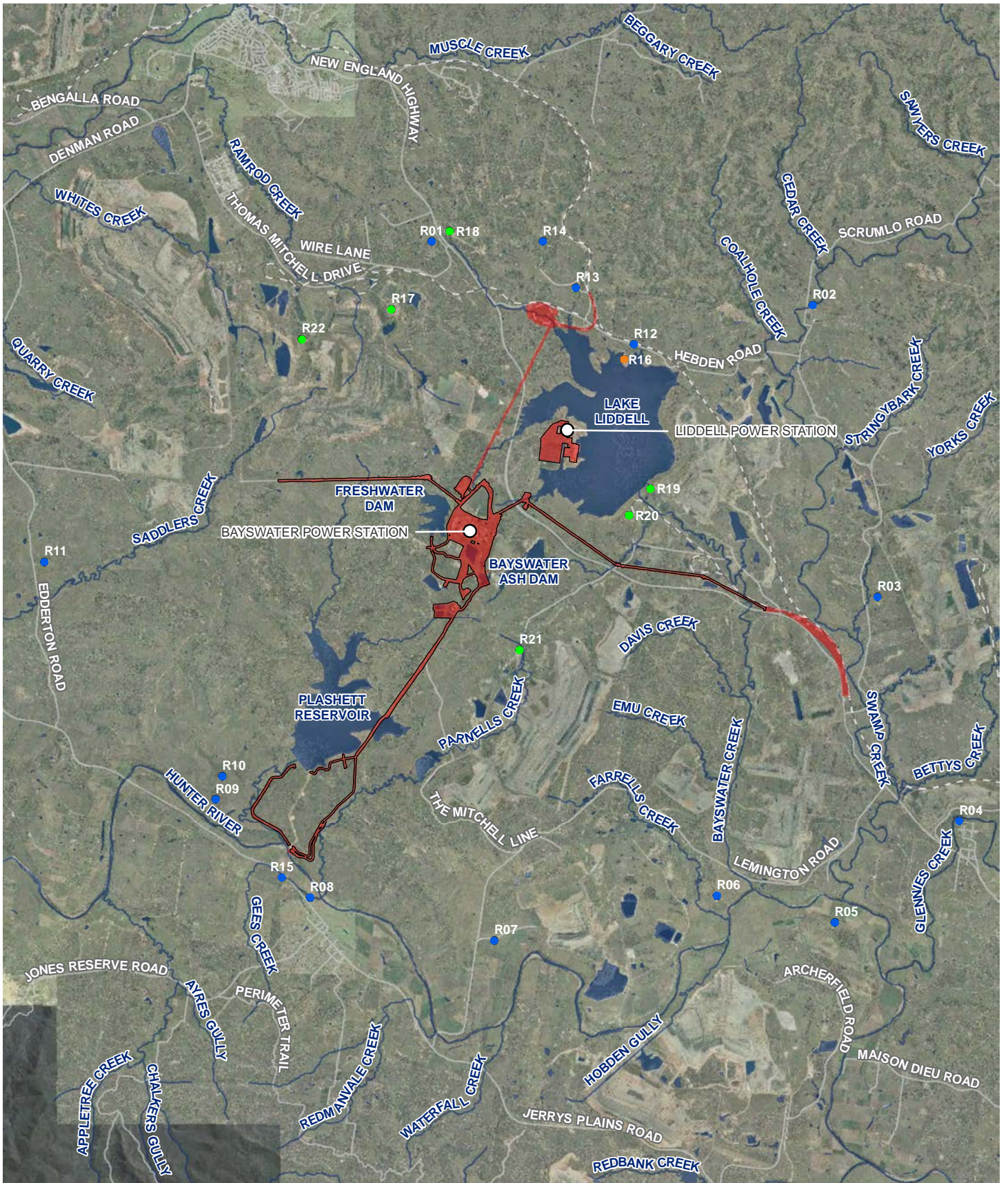
## 5.3 Background air quality

Data from air quality monitoring stations indicated that the EPA's daily impact assessment criterion was occasionally exceeded and that annual PM<sub>10</sub> and PM<sub>2.5</sub> concentrations and deposited dust levels were also occasionally measured above the relevant criteria.

Measurement data from all monitoring stations represent the contributions from all sources that have, at some stage, been upwind of each monitor. The background concentration may contain emissions from many sources such as mining activities, construction works, bushfires and 'burning off', industry, vehicles, roads, windblown dust from nearby and remote areas, fragments of pollens, moulds and domestic wood fires.

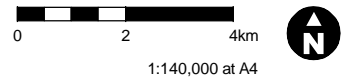
Measured exceedances against the impact assessment criteria outlined in the Approved Methods are expected to have been a result of widespread drought conditions (particularly in 2017 and 2018), with some exceedances also expected to arise from surrounding mining activities.





**Legend**

- |  |                  |                            |                    |         |           |
|--|------------------|----------------------------|--------------------|---------|-----------|
|  | Development site | <b>Sensitive Receivers</b> |                    | Railway |           |
|  | Project area     |                            | Industrial         |         | Road      |
|  |                  |                            | Passive Recreation |         | Waterway  |
|  |                  |                            | Residential        |         | Waterbody |



**Data sources**

Jacobs 2021  
 AGL 2020  
 ©Department of Finance,  
 Service and Innovation Aug 2020

Imagery:  
 Department of Customer Service 2020

GDA94 MGA56



**Figure 4 Noise sensitive receivers surrounding the LBBAWP (source: Jacobs 2021)**



## 5.4 Potential impacts

During construction, the primary risk to air quality would be dust generated from site clearing, materials excavation, handling, transport and placement, as well as from wind erosion of stored materials and exposed surfaces resulting in impacts at surrounding sensitive receivers. The intensity of dust-generating activities during construction is expected to be greatest at the BESS. There would also be exhaust emissions from plant and equipment used during the construction and fugitive emissions from stored fuels and chemicals.

There is potential for the BESS Project to occur at the same time as the WOAOW project; as a result, there is potential for cumulative impacts.

According to the impact assessment undertaken as part of the EIS for the construction phase of the LBBAWP, the EPA impact assessment criteria for TSP and PM<sub>2.5</sub> should not be exceeded at surrounding sensitive receivers, and no additional exceedances of 24-hour averaged PM<sub>10</sub> were predicted. Negligible (less than one per cent) contributions of annually averaged PM<sub>10</sub> and deposited dust were also predicted, although levels were noted to be already elevated above criteria at some receiver locations. It was therefore assessed that the BESS Project is not expected to result in unacceptable changes in local air quality during construction.

In addition, the assessment anticipated that there would be limited air quality-related risks during the operation of the BESS Project.

## 6.0 Environmental management measures

The management measures provided in Table 3 will be implemented to minimise potential air quality impacts from the BESS Project. These management measures will be implemented in addition to the relevant controls recommended for the WOAOW project, which are included in Table 4. The proposed monitoring for the BESS Project is discussed in Section 7.1.

**Table 3 Environmental management measures - air quality (EIS / RTS / development consent)**

Reference	Environmental management measures	Responsibility	Timing
AQ1	The following will be undertaken to manage fugitive emissions from stored chemicals: <ul style="list-style-type: none"> <li>Limiting the quantity of chemical products stored at the site to the extent practical</li> <li>Ensure that all storage tanks are fitted with the appropriate controls in line with the Protection of the Environment Operations (Clean Air) Regulation 2010.</li> </ul>	Project Contractor	Design Construction Operation Decommissioning
AQ2	Trucks entering and leaving the site that are carrying loads of dust-generating materials will be covered at all times, except during loading and unloading. <p>During the loading and unloading of materials, the following will be undertaken:</p> <ul style="list-style-type: none"> <li>Water sprays as applicable</li> <li>Minimising drop heights</li> <li>Reviewing and, where necessary, modifying or suspending activities during dry and windy weather and elevated background air quality conditions.</li> </ul>	Project Contractor	Construction Decommissioning
AQ3	While hauling materials in trucks, the following will be undertaken: <ul style="list-style-type: none"> <li>Regular watering of unsealed haulage routes</li> </ul>	Project Contractor	Construction Decommissioning

Reference	Environmental management measures	Responsibility	Timing
	<ul style="list-style-type: none"> <li>Regular inspection and removal of debris from plant and equipment to avoid the tracking of materials onto the adjacent road network.</li> </ul>		
AQ4	<p>The following will be undertaken to manage exhaust emissions from plant and equipment:</p> <ul style="list-style-type: none"> <li>Maintaining all equipment in a proper and efficient condition</li> <li>Inspecting all plant and equipment before it is used on-site</li> <li>Ensuring that all vehicles, plant, and equipment are operated in a proper and efficient manner</li> <li>Switching off all vehicles, plant and equipment when not in use for extended periods</li> <li>Avoiding the use of diesel or petrol-powered generators and use mains electricity or battery-powered equipment where practicable.</li> </ul>	Project Contractor	Construction Decommissioning
AQ5	Activities will be coordinated between the BESS Project and the WOAOW project to limit the potential for cumulative dust impacts where reasonable and feasible.	Project Contractor	Construction
AQ6	<p>The following will be undertaken to manage wind erosion from stockpiles and exposed surfaces:</p> <ul style="list-style-type: none"> <li>Watering stockpiles and exposed surfaces</li> <li>Progressive rehabilitation of exposed surfaces (as feasible) that are no longer required for construction.</li> </ul>	Project Contractor	Construction Decommissioning

**Table 4 Environmental management measures - air quality (WOAOW)**

Reference	Environmental management measures	Responsibility	Timing
AQ7	<p>The following measures will be implemented as required:</p> <ul style="list-style-type: none"> <li>Where reasonable and feasible, limit the extent of exposed areas and quantity of stockpiled dispersible materials</li> <li>Minimise dust generation from stockpiles, haulage routes, work activities and exposed ground surfaces</li> <li>Minimise generator and vehicle emissions</li> <li>Apply suitable speed limits on site haulage routes to minimise dust emissions</li> <li>Undertake watering of all unsealed trafficked haulage routes to minimise visible dust emissions</li> <li>Apply watering to activities involving the loading and unloading, compaction and handling of soil materials as required</li> <li>Cover or minimise truck loads</li> </ul>	Project Contractor	Construction Decommissioning

Reference	Environmental management measures	Responsibility	Timing
	<ul style="list-style-type: none"> <li>Modify or cease dust-generating works during unfavourable weather conditions</li> <li>Inspect and address corrective actions.</li> </ul>		
AQ8	Undertake revegetation of rehabilitation areas	Project Contractor	Decommissioning

## 7.0 Compliance and reporting

### 7.1 Monitoring and reporting

A recommended trigger, action and response plan (TARP) for the construction and decommissioning of the BESS Project is provided in Table 5. There will be no operational monitoring associated with the BESS Project.



Table 5 Trigger, action and response plan

Level	Trigger	Action	Responsibility
Normal	<ul style="list-style-type: none"> <li>Reasonably expected conditions in day to day operations</li> <li>No cause for action, routine dust management to be continued</li> <li>No dust or odour complaint</li> <li>Wind speed 18km/hr</li> </ul>	<ul style="list-style-type: none"> <li>Maintain standard dust suppression activities</li> <li>Monitor operation</li> </ul>	Project Contractor
Level 1	<ul style="list-style-type: none"> <li>Change from normal indicating a potential risk</li> <li>Not of a serious nature, acts as an alert and requires monitoring to detect further trends</li> <li>Dust or odour complaint (unvalidated)</li> <li>Wind speed &gt;18km/hr</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate effectiveness of controls throughout activity</li> <li>Plan and execute remedial actions as required: <ul style="list-style-type: none"> <li>- Additional watering</li> <li>- Re-locating activities</li> </ul> </li> <li>Conduct visual inspection to identify dust and/or air emission generating activities</li> <li>Investigate complaint, taking into consideration activity, meteorological conditions, and visual observation of impact to validate complaint</li> <li>Provide verbal response to complaint</li> <li>Record in complaints register</li> </ul>	Project Contractor
Level 2	<ul style="list-style-type: none"> <li>Moderate risk of dust related impacts occurring</li> <li>Remedial action needs to be planned and executed</li> <li>Dust or odour complaint (validated)</li> <li>Wind speed forecast &gt;36 km or wind speed forecast &gt;18 km and wind direction from north or north west</li> </ul>	<ul style="list-style-type: none"> <li>Maintain and evaluate effectiveness of controls throughout activity</li> <li>Plan and execute remedial actions as required: <ul style="list-style-type: none"> <li>- Additional watering</li> <li>- Re-locating activities</li> <li>- Reduced activity</li> </ul> </li> <li>Conduct visual inspection to identify dust and/or air emission generating activities</li> <li>Investigate complaint, taking into consideration activity, meteorological conditions, and visual observation of impact to validate complaint</li> <li>Provide verbal response to complaint</li> <li>Record in complaints register and report to Project Manager</li> <li>Communicate lessons learned to Environment and Project Team</li> </ul>	Project Contractor

## **7.2 Incidents and complaints**

Incident management will be managed in accordance with the process outlined in Section 4.5 of the EMS.

Complaints and enquiries will be managed in accordance with the process outlined in Section 5.3 of the EMS.

## **7.3 Document review and update**

It is a requirement of the EMS that all associated plans, studies and strategies 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 development consent
- A direction of the Secretary.